



GOVERNMENT OF THE COOK ISLANDS

NATIONAL ICT POLICY

2023-27



ICT POLICY CONSULTATION WORKSHOP



GOVERNMENT DATA CENTRE

CONTENTS

1	Foreword	6
2	Purpose	7
3	Vision	7
4	Scope	7
5	National policy context	10
6	Recent developments in improving ICT connectivity and accessibility	14
7	Progress in achieving previous ICT policy objectives	22
8	Policy Aims: 2023 - 2027	30
9	ENGAGE	33
10	ENHANCE	47
11	ENABLE	57
	Annex A. Institutional structure	70
	Annex B. Glossary	73
	Annex C. References	74



1 FOREWORD

Kia Orana,

Information and communication technologies (ICTs) are key to opening the door to the digital world, enabling social and economic development. For the Cook Islands, ICTs offer a means to reduce the challenges of distance and geographic isolation with vastly improved access to education, health and other Government services, information and knowledge, and the global economy.

This National ICT Policy encompasses Government's over-arching goals for ICT-based development over the next five years. A key aim is to promote equitable access to reliable and affordable ICT infrastructure, and to encourage effective utilisation of this infrastructure by both public and private sectors. The ICT Policy also identifies strategies for successful outcomes, including improved digital literacy and skill development, and addresses legal and regulatory gaps such as cybersecurity, data protection and areas specific to online commerce.

The Government of the Cook Islands believes that successful implementation of this ICT Policy will spearhead a transformation in the way that citizens, business and Government interact and communicate, promoting lasting social inclusion and sustained economic growth. Furthermore, Government is committed to leading by example, with digital transformation initiatives being a mainstream priority for Ministries and agencies.

I would like to thank the many people involved in the preparation of this National ICT Policy. I am particularly grateful to the Asian Development Bank (ADB) for its facilitation role. It is my sincere hope that all stakeholders will come together in partnership to implement this Policy and achieve our common goals.

Kia Manuia.

**Honourable Mark Brown
PRIME MINISTER.**

2 PURPOSE

This National Information and Communication Technology (ICT) policy provides a framework to support and extend the benefits of digital opportunities for all. The policy aims to facilitate socio-economic development and enable greater participation in the local and global economy.

It will build upon the progress of the 2015–2020 ICT policy¹, which sought to promote effective coordination of public and private stakeholders towards achieving the common goal of effective engagement for all in today's information society. The focus is on putting the levers in place to achieve tangible outcomes, and uniting Government and people in action.



**HON. MARK BROWN
PRIME MINISTER**

3 VISION

We will use ICT to strengthen our connectedness and to achieve our Sustainable Development Goals (SDGs).



**BEN PONIA
CHIEF OF STAFF**

4 SCOPE

The term ICT was originally applied to any technology capable of supporting information and communications. The International Telecommunication Union's (ITU) working definition, adopted in 2014, is: "...technologies and equipment that handle (e.g., access, create, collect, store, transmit, receive, disseminate) information and communication"².

The meaning now commonly extends to associated devices, services and applications and their governance (*Exhibit 1*). Defined in this way, ICT encompasses digitalisation – the take-up of digital technologies and applications – through digital connections, platforms, endeavours and interaction. This should be differentiated from digitisation which means moving from manual or paper-based records to a digital format, although this policy covers both.



**TINGIKA ELIKANA
ASSOCIATE MINISTER OF
TELECOMMUNICATIONS**

1. Government of Cook Islands (2015), Cook Islands National Information and Communication Technology Policy July 2015 – 2020, 2015.
2. International Telecommunication Union (2014), Report on the work carried out by the correspondence group on the elaboration of a working definition of the term "ICT", 3 November 2014.



PUA HUNTER
Government ICT
Director

4 SCOPE cont...

The components of ICT and the related digital ecosystem are all within scope for this policy. It also extends to digital transformation which involves changing the way that processes work and services are delivered to embed digital technologies in organisations and society.

The policy does not address digital copyright and intellectual property, or the regulation of digital content. These large and complex issues may be best addressed in standalone initiatives. Although these are important digital matters, stakeholders identified other issues as being of higher immediate priority for the ICT policy. Finally, Government ownership interests in companies delivering ICT are also out of scope.

COMMUNICATIONS

Rapid increase in capability & connectivity

- Wired
- Wireless
- Mobile
- Satellite
- Broadcast

DEVICES

Consumers taking advantage of expanding number of new devices

- Phones
- Tablets
- Personal Computers
- Wearables

SERVICES/APPS

New business models using new technology

- Cloud Computing
- Big Data
- Internet of things
- Artificial Intelligence (AI)
- Robotics
- E-Commerce

GOVERNANCE

Digital technologies need appropriate institutions, practices & rules

- Information
- Data
- Cybersecurity
- Resilience
- Cybersafety

Exhibit 1: The components of ICT



CEIT COOK ISLANDS

—The Centre of Excellence in Information Technology
—**THE CODE AVENGERS** - Students learn how to design and build Robots. Through robotics they are taught computer science, computer programming, design, engineering principles, online safety and more.

If used effectively, ICT serves as a tool for strengthening good governance, promoting social inclusion and gender equality, preserving culture and the environment, improving the accessibility of healthcare and education, increasing transparency, and expanding economic / business opportunities.

The updated national ICT policy will inform future sectoral policies, legislation, and mid-to longer-term strategies, thereby providing input to Government business planning and forecast appropriations (Exhibit 2). The policy is consistent with the aims and objectives of existing national development plans and strategies.

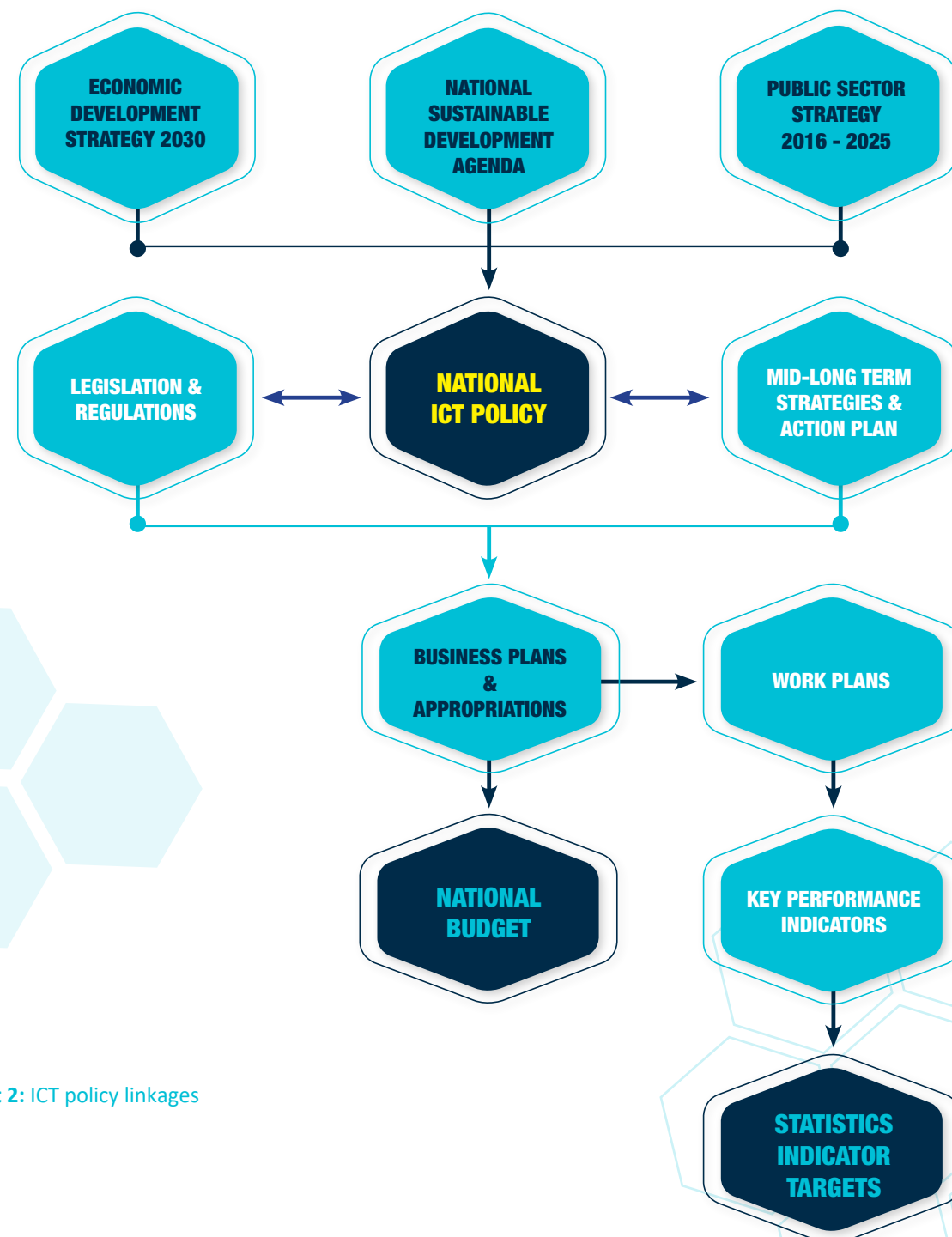


Exhibit 2: ICT policy linkages



Connectedness is a target of the National Sustainable Development Agenda 2020+³, encompassing connecting people physically, digitally and via telecommunications and ensuring equal access, affordability and reliability.

The Cook Islands National Sustainable Development Plan 2016 – 2020⁴ identifies the role of ICT in supporting the needs of all Sustainable Development Goals. In particular, the plan acknowledges that appropriate, reliable and accessible ICT infrastructure plays a key role in improving the standard of living through boosting economic growth and security.

The Cook Islands Economic Development Strategy 2030⁵ envisages transformation to a knowledge and information society, as well as reducing the digital divide, by capitalising on the telecommunications sector reforms which were a key outcome of the 2015 – 2020 ICT policy.

The Public Sector Strategy 2016 – 2025⁶ aims to improve stakeholder engagement, performance, service delivery, organisational management, and planning capabilities. To this end, key focus areas encompass improved information management and operational systems, and better use of technology.

3. Government of the Cook Islands (2021), Te Ara Akapapa'anga Nui NSDA 2020+ Te Akapapa'anga Uki One Generation • 25 Years, 2021.
 4. Government of the Cook Islands (2016), National Sustainable Development Plan, 2016 – 2020, January 2016. 5. Government of the Cook Islands (2021), Cook Islands Economic Development Strategy 2030, January 2021. 6. Government of the Cook Islands (2016), Cook Islands Government Public Sector Strategy, 2016 – 2025, 2016.



AIR TRAFFIC SERVICES
Georgia Short and Bronson Warwick
(ATS trainees)

RECENT DEVELOPMENTS IN IMPROVING ICT CONNECTIVITY AND ACCESSIBILITY

Evidence from around the world demonstrates that rapid progress occurs with ICT accessibility and affordability once telecommunications regimes are liberalised, permitting competitive market entry⁷. Within a relatively short time-period, a competitive model typically brings new and innovative services to the market, and encourages efficiencies in existing service provision, with the net effect of cheaper and more widely available services for consumers, households, government and businesses.

Prior to 2019, the sole provider of telecommunications, including retail fixed, mobile and Internet services, was Telecom Cook Islands (TCI), now under new ownership and renamed Vodafone Cook Islands (VCI), which is 40% owned by the Government. New market entry in the Cook Islands is now possible with the passing of the Telecommunications Act 2019, and the Competition and Regulatory Authority Act 2019. The Telecommunications Act encompasses a competitive framework for the sector while the second Act established an independent regulatory office, the Competition and Regulatory Authority (CRA). This office is now operating, following the appointment of a chairman in 2020.

By 2022, eight Internet service provider (ISP) licences had been issued by the Chair of the CRA. One of these ISPs already offers a nationwide satellite-based Internet service to residential and business customers, while others are developing service offerings. In the CRA Annual Report 2021-2022 it was noted that although the ISP licences authorise provision of mobile data services, to date none of the active ISP licensees had done so. Thus as at the end of 2022⁸, competition in the telecommunications market remains quite limited. The CRA Report notes an ongoing lack of investment interest in terrestrial mobile telephony network services, but indicates that continuing advances in wireless technology and service delivery from space may drive future improvements in market competition.

Private investment in the fixed network is occurring. VCI is undertaking a new Fibre to the Home (FTTH) project in Rarotonga, as well as extending its wireless broadband offering. The FTTH project, which replaces copper-based technology with fibre, is connecting the business community first, including most of Avarua and the large hotels. By 2024, VCI plans to pass 3000 homes with fibre, representing approximately two-thirds of total households on Rarotonga. Free connections are being offered to householders during the deployment phase. VCI is also undertaking work to improve connectivity on Aitutaki and other Pa Enua locations.

Another major step change in improving connectivity occurred in 2020, when the Manatua One Polynesia Cable became ready for service. This international submarine cable links the Cook Islands to the world via Tahiti and Samoa, whereas previously all islands were reliant solely on satellite connectivity. A State-Owned Enterprise, Avaroa Cable Limited (ACL), has been established to own and run the cable stations on Rarotonga and Aitutaki along with management of the Cook Islands' interest in the jointly owned Manatua Cable. In September 2022, ACL signed an agreement with cable provider Hawaiki to provide international capacity / connection to Australia from the Manatua cable termination point in Samoa⁹. This will support the availability of additional capacity for wholesale customers and improve resilience.

TELECOMMUNICATIONS PROGRESS – BY THE NUMBERS

In 2022 there were over 80 mobiles per 100 resident population, and 23 fixed broadband services per 100 resident population (Exhibit 3). The proportion of residents subscribing to fixed line services is slowly declining over time, which is consistent with experience in other countries. Meanwhile uptake of mobile services is increasing again following a noticeable decline in the peak COVID-19 years.

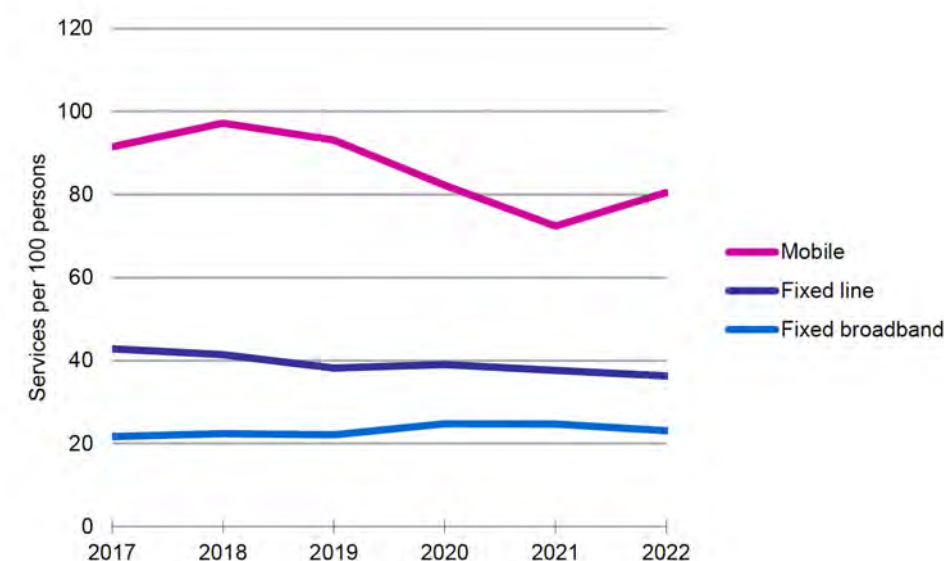


Exhibit 3: Fixed voice, fixed broadband and mobile services per 100 resident persons [Source: VCI]

In reality fixed broadband services provide broadband access to households and businesses. Thus, in relation to the number of households, there are around 90 fixed broadband services per 100 households. This indicates that household access to fixed broadband services is relatively high, although some take-up will be for businesses and holiday accommodation.

7. Jobodwana, Z. N. (2009), Telecommunications Liberalisation in Africa: Proposed Regulatory Model for the SADC Region, Journal of Digital Forensics, Security and Law, Vol. 4(4). 8. Competition and Regulatory Authority (2022), Annual Report 2021-2022. 9. Avaroa Cable Limited (2022), Hawaiki Cable to build Australian link for Avaroa, 20 September 2022.



Although the level of uptake of fixed broadband services has remained relatively constant over time, there is evidence that usage is increasing. Over the two years from September 2019 to September 2021, a period coinciding with COVID-19 restrictions, significant increases occurred in the Cook Islands in average fixed and mobile data usage (Exhibit 4).

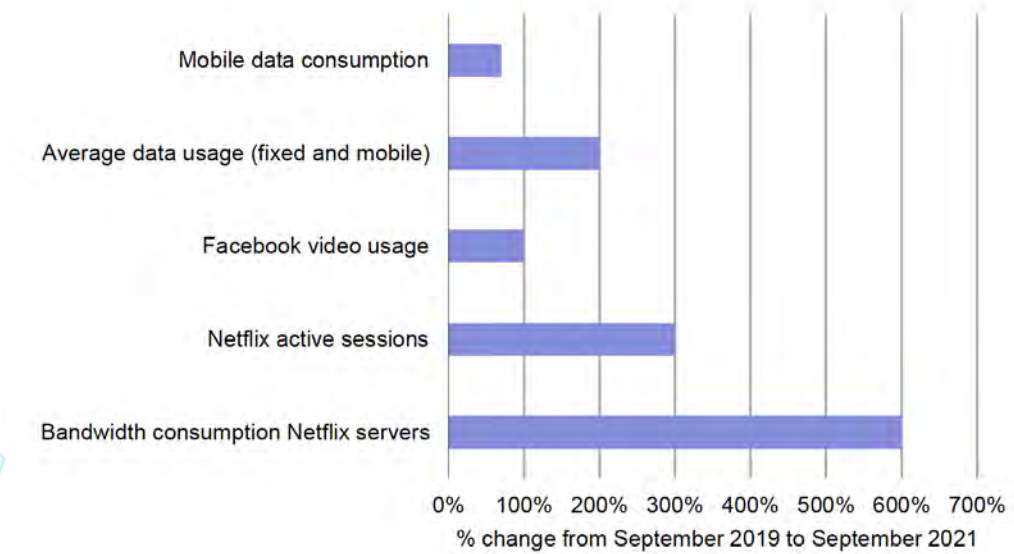


Exhibit 4: Percentage increase in Cook Islands ICT usage 2019 to 2021 [Source: VCI]

From 2016 to 2021 the frequency of use of the Internet has increased, with close to 80% of Cook Islanders using the Internet daily in 2021 (Exhibit 5).

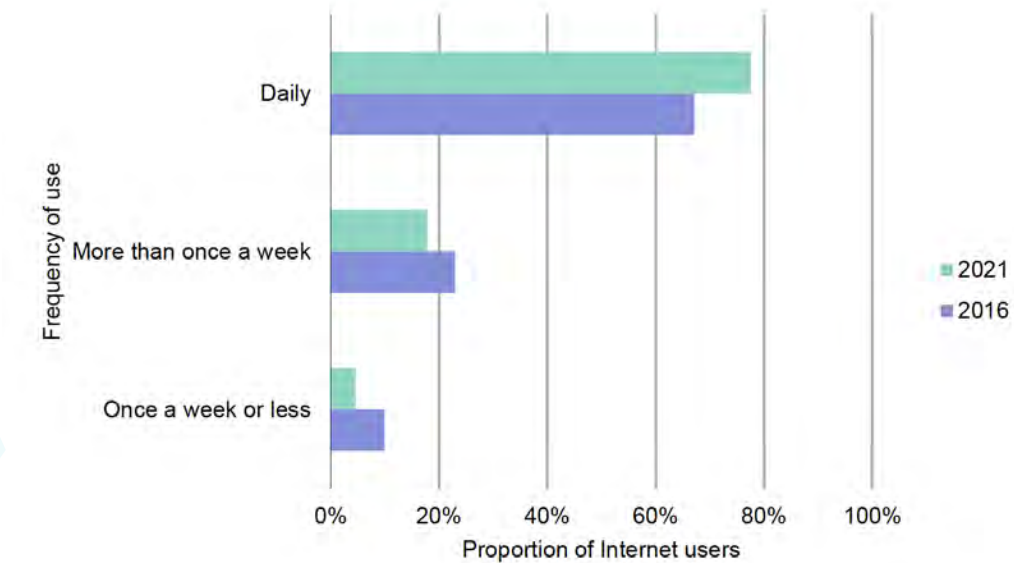


Exhibit 5: Frequency of Internet use by Cook Islanders, 2016 and 2021 [Source: Cook Islands Statistics Office]

The main purpose of Cook Islanders’ Internet usage in 2021 was overwhelmingly to access social media and entertainment (Exhibit 6). While usage of the Internet has increased for education, banking and purchasing goods since 2016, statistics indicate that, compared to entertainment, these are less important drivers for Internet access. There are a number of possible causes for this, including lack of suitable skills or devices, low availability or accessibility of some applications (for example, online education) and / or a lack of digital trust restricting engagement in commercial and banking applications.

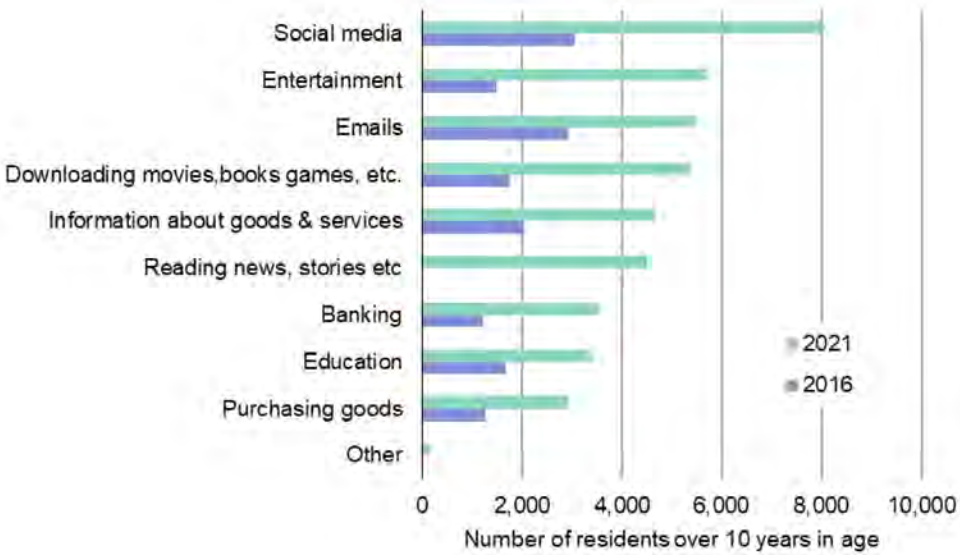


Exhibit 6: Purpose of Internet use, 2016 and 2021 [Source: Cook Islands Statistics Office]

Another potential barrier for Internet usage for some Cook Islanders may be affordability. The Broadband Commission of the United Nations specifies target broadband affordability as expenditure on entry-level services at less than 2% of monthly per capita Gross National Income (GNI)¹⁰. The CRA reports that in 2022 an entry level post-paid monthly mobile plan, priced at \$49 for 5GB per month, represents 1.8% of monthly per capita GNI.

On this measure, entry-level broadband is affordable in the Cook Islands. However, the CRA also reports that pre-paid mobile retail prices in the Cook Islands are relatively high compared to other small countries in the region, for a number of reasons including a lack of competition. Furthermore, pricing of fixed broadband plans remains differentiated by speed / bandwidth and data cap with no unlimited plans available. The plans with relatively high data caps may be out of reach for many Cook Islanders.

10. Broadband Commission for Sustainable Development (2022), What are the 2025 Broadband Advocacy Targets? Available at: <https://broadbandcommission.net/advocacy-targets/>.



AIRPORT AUTHORITY—RESCUE FIRE SERVICE

PROGRESS IN ACHIEVING PREVIOUS ICT POLICY OBJECTIVES

With the vision of empowering citizens and improving the quality of life of Cook Islanders through ICT, five main objectives were identified for the 2015 – 2020 ICT policy.

These were informed by a review of the status of ICT services, applications and usage in 2015. By 2022 significant advances have been achieved with tangible results evident across all of these objectives.

These advances occurred despite the disruptive impact of COVID-19 over the period 2020 to 2021. While the global medical emergency caused social isolation and economic hardship for the Cook Islands as international travel effectively ceased, ICT was quickly identified as part of the solution, adding further momentum to policy implementation efforts.

7.1 OBJECTIVE A – Universal Service Access

Important milestones have been achieved on the path towards equitable, affordable and non-discriminatory access to reliable quality ICT facilities and services for all.

These include:

- The Telecommunications Act 2019 which provides for subsidizing the provision of telecommunications to areas or customer groups which cannot reasonably be served on a commercial basis
- Government has entered a long-term contract that provides for improved Internet connectivity for government offices in the Pa Enua, prompting improvements for the general public in these locations
- The CRA has commenced development of a Universal Access Plan, aiming to provide affordable and high-quality telecommunications services to the Pa Enua
- The new open and competitive market structure should promote improved services and prices while the submarine cable offers expanded and faster international bandwidth.

The percentage of Pa Enua residents using the Internet has increased from 36% to 62% in the Southern islands and from 31% to 58% in the Northern islands between 2016 and 2021 (Exhibit 7) – an indicator of improving availability and access.

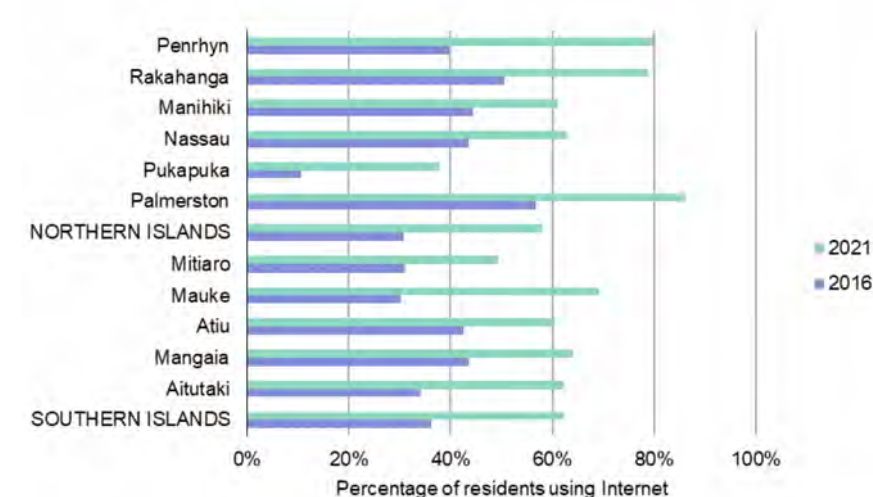


Exhibit 7: Internet use in the Pa Enua – percentage of residents
[Source: Cook Islands] Statistics Office]

7.2 OBJECTIVE B – Improved Government Service

While Government acknowledges that there is further work to be undertaken to enhance efficiency and effectiveness of Government operations and service delivery, progress to date includes:

- An upgraded centralised Government ICT system, implemented by the ICT Division of the Office of the Prime Minister (OPM), is being made available to all of Government
- Individual Government agencies and state-owned enterprises are continuing with development and implementation of digital plans. Examples include:
- The Ports Authority's digitisation transformation of its container cargo operations in collaboration with shipping companies and shipping agents
- Customs and Revenue Management Division's migration to an upgraded digital system with online tax returns, better integration, and electronic invoicing
- Ministry of Education's unlimited data for schools
- An online business registry
- Immigration Department's new digital system installed at the airport.



TEREORA COLLEGE — STUDENTS RESEARCH CENTRE
From left—Kayla-Marama Fraser, Georgina Vaine Keu,
Teii Ngametua and Eitiare Watson

Health Services in the Pa Enua

During the last five years significant advances have been made in the provision of health services in the Pa Enua, facilitated by ICT development. This included upgrading legacy infrastructure, a complete server upgrade, implementing back-up and service delivery processes, change management and introducing cybersecurity applications. There is a dedicated satellite dish on each island, with a back-up service available using multiple service providers.

In 2017 only two virtual health services were available, but now the establishment of teleconferencing and telemedicine facilities in all populated islands has been completed.

The current goal is to ensure sustainability, including strengthening systems for resilience to cope with climate change events. Work is underway on several ICT initiatives, including:

- implementing sharing of the Public Health database, which is currently a separate standalone system
- a Manage My Health application for registered patients
- an SMS messaging system for doctors to send reminders for follow-up appointments and for taking medication.

7.3 OBJECTIVE C – Human Resource Development Opportunities

Improved delivery, accessibility and effective utilisation of ICT-based services requires human knowledge. However, building local ICT human capital and capacity is a challenging undertaking for small and geographically isolated countries.

The existing educational opportunities available through the University of the South Pacific (USP) and the Cook Islands Tertiary Training Institute (CITTI) were extended in 2017 with the establishment of the India-Cook Islands Centre of Excellence in Information Technology (CEIT), a registered private tertiary provider located at the USP Campus in Rarotonga. The CEIT is a joint collaboration between the two Governments, providing specialised ICT training programmes.

The Centre offers advanced certified training and scholarship opportunities to IT professionals in-country. These courses are designed to meet the skill needs identified by the government and private sector. CEIT also provides basic computer literacy training to office workers and business professionals with the aim of improving workforce productivity.

7.4 OBJECTIVE D – Sustainable and green ICT systems and infrastructure

ICT may be utilised for supporting environmental management, as well as for predicting, monitoring and responding to emergencies and disasters, both natural and man-made. Recent progress includes:

- Provisions in the new Telecommunications Act 2019 for cooperation between Emergency Management Cook Islands and licensed operators in making appropriate plans for the continuation or restoration of telecommunications after a disaster or emergency. It also provides for the Response Executive to direct operators, after a state of disaster or emergency has been declared, to carry, or refrain from carrying, messages of a specified nature, or to provide telecommunications services of a specified kind.
- Implementation of new videoconferencing facilities and infrastructure from 2020 to 2022 for many Government departments, driven largely by COVID-19 related restrictions on travel. These are supporting increased ICT usage, and the substitution of virtual for physical meetings contributes to the reduction of carbon emissions.

7.5 OBJECTIVE E – Leveraging ICT for sustainable development

ICT is a tool for achieving social, economic and environmental outcomes across many different community groups, business and governmental sectors, as well as the entire nation. In recent years a number of diverse ICT initiatives have been undertaken, with many involving public-private collaboration.

CASE STUDY

e-Parliament – strengthening and promoting good governance and civil engagement

The Parliamentary Services Strategic Plan 2021 – 2025 envisages a transparently modern, inclusive and efficient parliament. Its mission statement emphasises inclusiveness:

A parliament that effectively, efficiently and transparently represents the people of the Cook Islands, legislates and scrutinizes the Executive; and enables the People of the Cook Islands to observe and participate in the country's governance and development process.¹¹

A key objective is to improve parliamentary working processes and procedures in order to increase transparency and accessibility. To this end, the Plan includes the development and implementation of e-Parliament using ICT.

Parliament has been livestreamed since 2019, with broadcasts on the parliamentary website, social media and radio. Already ICT has successfully enabled parliamentary participation by virtual means with real-time committee meeting attendance of members located in the Pa Enua and New Zealand. The aim now is to build on these positive experiences with ICT to increase the number of days possible for select committee meetings and parliamentary sittings. Improvements in ICT infrastructure to support this include the increased availability of fibre, and better VSAT technology.

Funding has been secured to provide all Members of Parliament with computer notebooks and training, which will remove the requirement for delivering written documentation in advance of meetings. This promotes considerable savings in time and resources as a result of effective ICT use.

Work has been underway on digitising all Acts and Hansard, and now Acts from as early as 1965 are available online with copies stored in the cloud. This is increasing transparency, as well as serving the environment as the demand for paper copies is now negligible.

11. Government of Cook Islands (2021), Parliamentary Services Strategic Plan 2021 – 2025,



Martin Kokaua (Air Navigation Service Technician Trainee)

ENGAGE

All citizens are able to engage, with reliable infrastructure available for communications, reducing inequality and promoting inclusiveness via better access to information and services; and with the ability to use ICT with tools, skills and confidence, meeting the diverse needs of communities and individuals.

ENHANCE

Government leading by example, seizing the opportunities offered by ICTs: driving productivity gains; building a strong and diverse workforce; progressing sustainable digital transformation to support open and transparent governance. Firms become more aware of the opportunities brought by ICT, including new channels for boosting productivity and growth, and greater investment is stimulated in innovative digital technologies and applications.

ENABLE

Creating a safe and secure digital environment and building trust to enable sustainable ICT use, and encouraging growth, innovation and investment.

Exhibit 8: Policy aims

This policy has three inter-related aims, all of which involve shared responsibilities. People will only truly engage with ICT if barriers are removed – this means that consistent and reliable technology is available to support digital engagement, and trust is developed in systems and applications to support ongoing engagement.

Government digital transformation will only be possible if suitable policies and strategies are in place to support trust and security. Development of a secure digital environment in which personal data is protected and safe requires the united commitment of all stakeholders.

The policy aims envisage continuing the previous policy objectives (Exhibit 9), building on progress to date, including the new telecommunications framework.

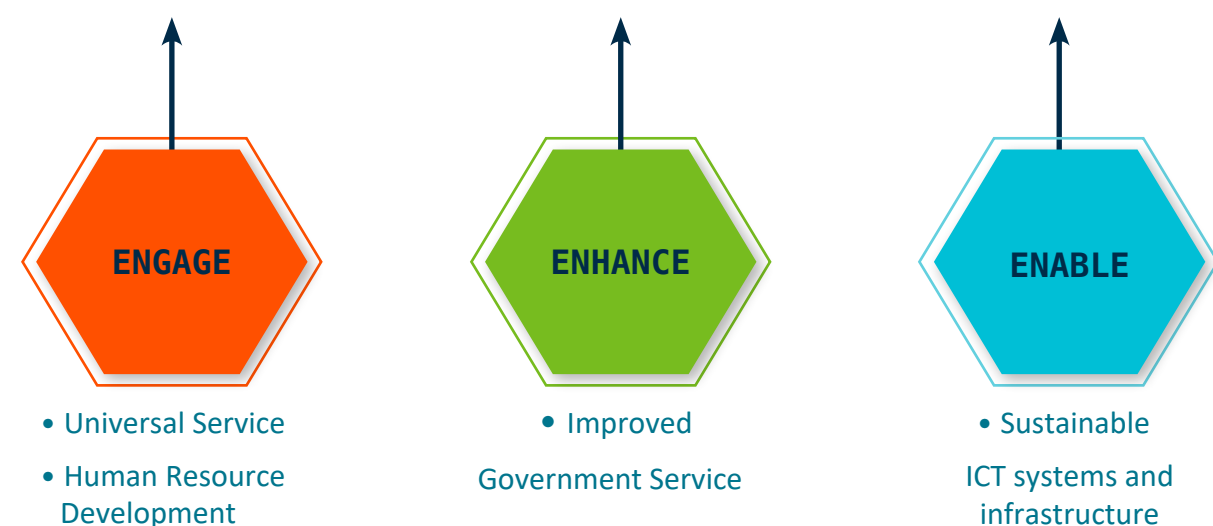
LEVERAGING ICT FOR SUSTAINABLE DEVELOPMENT

Exhibit 9: Relationship between previous and current ICT policy

Tangible results have been achieved for all five objectives of the 2016 policy. However, issues and barriers still remain in respect to all objectives, as identified by independent review and stakeholder engagement. New policy concerns are emerging with more pervasive accessibility and use of ICT priorities need re-assessment over time in the dynamic ICT environment. With limited resources and a small population base, collaboration between Government and the private sector remains key to successful and timely outcomes. Using assessment criteria based on identifying effective and proportionate measures, this updated policy has been developed with the assistance of stakeholder engagement and consultation.



AIRPORT AUTHORITY—
ELECTRICAL DEPARTMENT

9.1 OBJECTIVE 1 – to ensure that all citizens are able to engage effectively in the information society with no digital divide

9.1.1 Issues

Access to reliable telecommunications infrastructure at a reasonable price is the starting-point for entry to the digital world. In fact all of the potential benefits of digital engagement are predicated on the widespread availability of efficient communications networks, which consistently provide an acceptable quality of service.

The accessibility of high-quality networks which support high-speed broadband services is particularly important to the digital transformation journey. Many studies have demonstrated that the uptake of these services is a key enabler to unlocking significant income and productivity gains and even supporting step-changes in economic growth and development for many countries, including small island states.¹¹

The Pa Enua is characterised by small and remote populations for whom communications infrastructure is critical for social, economic and physical well-being. Effective, resilient and reliable ICT provides the people of the Pa Enua with:

- connection to family and friends on other islands and in the world beyond
- access to Government services including health and education
- the ability to share and record cultural experiences
- assistance with maintaining and expanding opportunities for business endeavours
- up-to-date news and information and diverse entertainment sources
- immediate aid responses in emergency and disaster situations.

The Southern Group islands now have an upgraded mobile network using 3G technology while Northern Group islands still rely on 2G services. Benefits are expected in Rarotonga and Aitutaki from the arrival of the Manatua Cable and the upgrade of the fixed network from copper to fibre technology.

11. See, for example, Hansen, S. L. and Jones, N. C. (2019), Economic impact of broadband in LDCs, LLDCs and SIDS, United Nations & ITU, 2019.

9.1.2 Barriers and obstacles

- Affordability and reliability of services in the Pa Enua
 - apart from Aitutaki, the Pa Enua will remain reliant on satellite-based international and domestic connectivity.
 - Pa Enua residents report that service interruptions are still frequent in some islands, often caused by weather conditions, and equipment faults affecting mobile and broadcasting services.
- The Pa Enua are susceptible to very serious weather events, yet some of the islands are currently unserved by an AM radio service which is vital for emergency management.
 - Pending restoration of this service, an FM service is operating as a temporary replacement. However, the reliability of FM is poor compared to AM.
 - The ubiquitous availability of communications via radio service is a constitutional requirement for parliamentary broadcasts, and in this role is a key enabler for community and individual participation in governance.
- Lack of telecommunications consumer complaints tracking and monitoring
- Lack of evidence for monitoring Quality of Service.

9.1.3 Initiatives

Collaboration between Government and the private sector is key to ensuring that the existing digital divide between the outer islands and the rest of the country diminishes and eventually disappears.

Initiatives already underway include:

- a contractual arrangement between Government and VCI to support a new and improved satellite service for Government services in the Pa Enua, for launch in 2023
- a Universal Access Plan and Fund is under development by the CRA, aiming to provide affordable and reliable telecommunications services to the Pa Enua
- the Telecommunications Act 2019 includes a procedure for customer complaints. If complaints are not adequately addressed by the service provider then the CRA may be approached to assist
- VCI agents stationed on every island to act as a local contact point for addressing faults.

9.1.4 Policies

- Inclusive and equal services to be available to all, regardless of location and personal situation with a technology-neutral approach
- A particular focus should be placed on the Pa Enua critical areas, including infrastructure and skills
- Review, rationalise and reduce or remove as far as possible any Government administrative / financial barriers to responsible and inclusive private investment in ICT infrastructure
- Regular monitoring of quality of service changes over time Reform the Broadcasting Act 1989 so that the regulation and licensing of broadcast television and radio is brought under the purview of the CRA, facilitating regular monitoring of the quality and content of broadcasting services.

9.1.5 Outcomes

Resolving the remaining issues associated with reliable and resilient infrastructure will create an environment where current inhabitants are motivated to stay, and former and potential new residents are encouraged to return and live.

Both resident and visitor experience will be enhanced through improved connectivity with the outside world available via the submarine cable. This will enable promotion of tourism with real-time images appearing on social media displaying Cook Islands' culture, land and seascapes, and hospitality. With working from home and working from anywhere becoming the new normal, skilled overseas-based Cook Islanders may return to homes in the Pa Enua and digital nomads may be attracted to our shores for longer working holidays.

9.2 OBJECTIVE 2 – to expand ICT skills and education across communities, business and Government through outreach

9.2.1 Issues

ICT education and training are important tools in ensuring digital engagement. Effective ICT engagement by all members of the public requires a reasonable degree of digital literacy.



ICT TEAM: Rooftop of Police Station

9.2.2 Barriers and obstacles

- A lack of digital literacy skills may potentially disempower and disconnect disadvantaged and minority communities, including the disabled and older people. In 2021 more than 62% of Cook Islanders who do not use the Internet were over the age of 50 (Exhibit 10).
- As “digital natives”, children and young people tend to be quick learners in this area, however it is important that instruction is available at schools on:
 - how to be computer-wise as well as computer-literate
 - how to use the tools of an Internet-based world
 - managing data and data literacy
 - online safety.
- ICT skills of teachers must be sufficiently developed to lead this instruction.

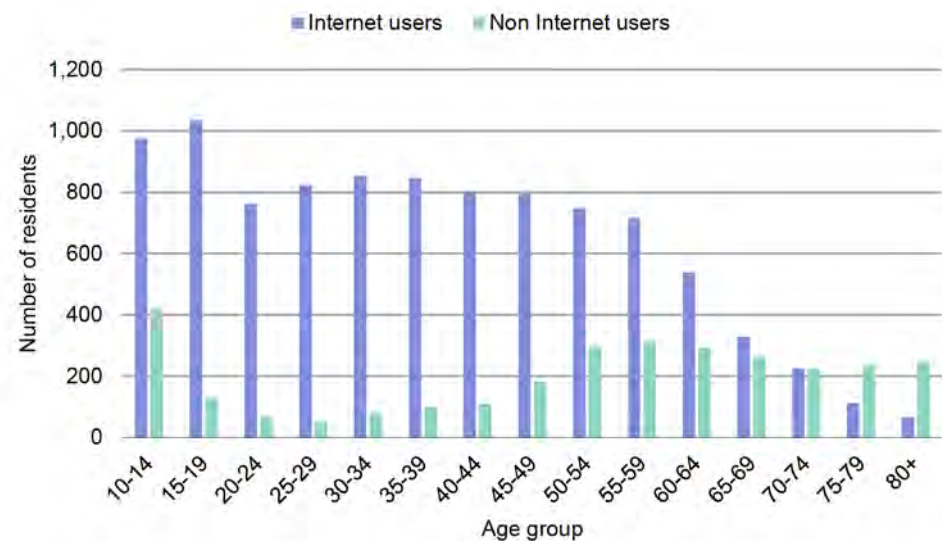


Exhibit 10: Internet users versus non-Internet users by age group, 2021
[Source: Cook Islands Statistics Office]

9.2.3 Initiatives

Government recognises the importance of strengthening capabilities for digital engagement, including the need to improve digital confidence among segments of the population. Some outreach programmes are already occurring, such as the initiative led by Climate Change Cook Islands of the Office of the Prime Minister (see box).

CASE STUDY

Developing digital skills for public safety

Increased use of ICT is crucial to build resilience to climate change and disaster events.

Climate Change Cook Islands of the Office of the Prime Minister is working to improve the skills of citizens in accessing online information in relation to key environmental news and issues. Dissemination and timely access of simplified and translated weather and disaster-related information is particularly important in the Pa Enua.

As social media channels are currently used, together with email communication, heavy reliance is placed on access to the Internet. The Climate Change office is undertaking training to improve social media skills in the Pa Enua, as well as training in the use of devices such as tablets.

Targeted training of women in the Pa Enua is ongoing to ensure gender engagement.

9.2.4 Policies

- Government will facilitate access to all citizens to opportunities to develop skills in the use of digital tools and accessing information through outreach programmes
- Collaboration with CITTI and the private sector to ensure availability of digital learning programmes, including adult and senior education
- Co-ordinate with industry and educational partners to promote ICT training and upskilling of schoolteachers
- Strengthen school-based teaching and learning programmes for instruction in the safe and productive use of ICT.

9.2.5 Outcomes

The enormous benefits of the digital world will be accessible to all Cook Islanders, regardless of age, gender, geographic location, economic circumstances or level of education. This will contribute to raising the standard of living and improving the quality of life.

9.3 OBJECTIVE 3 – to promote expansion of the qualified ICT skill-base in the Cook Islands

9.3.1 Issues

Government and business require qualified ICT professionals to implement, improve and sustain digital governance and commerce.

9.3.2 Barriers and obstacles

- It is often difficult to locate and retain the necessary skills on island with the many challenges commonly seen in Small Island Developing States (SIDS), such as geographic isolation, low population and, in the case of the Cook Islands, relative ease of movement to New Zealand and Australia.
- In many instances reliance must be placed on outsourcing and the use of overseas consultants to address the gaps
 - important to ensure that there are associated opportunities for knowledge transfer, upskilling and training of resident Cook Islanders.

9.3.3 Initiatives

Currently scholarships for study abroad and domestically are open and not restricted to specific focus areas, however scholarships are being awarded for study areas that will contribute to sustainable development. ICT is identified as a key area for scholarships and a small number of students are currently on ICT scholarships. All students are currently required to serve a two-year bond working in-country after completion of study courses.

9.3.4 Policies

- Develop and implement a specific strategy to attract and retain critical IT government staff
- Promote and support training, qualifications and development of ICT professionals, including generic and specialist skills, and provide incentives to retain these professionals in the Cook Islands.
- Harness overseas skill-sets for local capacity building
- Leverage opportunities to draw on support from other countries and bodies
- Promote upskilling and training opportunities for Government staff.

9.3.5 Outcomes

Investment in targeted training will provide a greater pool of local skilled resources, which is crucial for meeting the ICT needs of digital-intensive organisations, including Government and business. This will in turn support digital transformation initiatives and the growth of the information society.

9.4 ENGAGE ROADMAP

POLICY	STRATEGY	INDICATORS
Inclusive and equal services for all with focus on improving services in Pa Enea	Network resilience / redundancy review. Expedite return of AM radio in Pa Enea.	Reliable affordable high-speed broadband is available to all.
Review, rationalise and reduce or remove Government barriers to responsible and inclusive private ICT investment	Facilitate efficient access to rights of way. Ensure equitable access is available to public infrastructure. Ensure no barriers to remediation efforts for network failures in the Pa Enea.	A reduction in the number of days to obtain access for building or repairing infrastructure.
Monitor quality of service	Measurement of service performance, by individual island, which will, in the first instance, establish a performance baseline, against which subsequently progress may be assessed at regular intervals. Publication of quality of service monitoring updates. Transparent reporting procedures to be established.	A marked improvement in quality of service in every island from the performance baseline over time.
Reform the Broadcasting Act 1989	New legislation for regulation and licensing of broadcast television and radio.	Completion of the legislation.
Facilitate access to opportunities to develop skills in digital tools and accessing information	Support and extend community outreach by public agencies and departments. Ongoing support of public awareness and education for adults, such as the Cyber Smart Week 2021.	An increase in the percentage of people using the Internet.
Collaboration with CITTI and the private sector to ensure availability of digital learning programmes	Use of devices for accessing the Internet. Guidance on sourcing reliable information on the Internet. Instruction in basic software applications.	An increase in the usage of the Internet for activities other than social media and entertainment.

Exhibit 11: ENGAGE policy roadmap



AIRPORT AUTHORITY
Paulureau - Electrical Trainee



POLICY	STRATEGY	INDICATORS
Co-ordinate with industry and educational partners to promote ICT training and upskilling of schoolteachers	Training designed and targeted to the particular needs of teachers.	All schoolteachers are ICT-capable and have increased confidence with ICT.
Strengthen school-based teaching and learning programmes for instruction in the safe and productive use of ICT	Review best practice approaches; operationalise.	All students have access to instruction in the safe use of ICT.
Develop and implement a specific strategy to attract and retain critical IT government staff	Identify requirements for specialised and targeted skills (such as database management, cybersecurity) and support development.	No ICT skills shortages are observed.
Promote and support training, qualifications and development of ICT professionals	Encourage ICT applicants for educational scholarships with bond to return to Cook Islands for a minimum time-period Create educational scholarships specifically for women to undertake qualifications in ICT or to participate in courses to improve / extend existing skills.	The number of ICT-qualified individuals assisted through educational scholarships increases over time, with 50% uptake by women.
Expansion in the number of projects / initiatives which include overseas engagement.	Government ICT contracts which engage overseas experts to include local training components. Explore ways of mobilising ICT skills of overseas-based Cook Islanders.	Few or no ongoing gaps in local capacity are observed.
Leverage opportunities to draw on support from other countries and bodies	Capitalise on existing partnerships and explore new opportunities via regional bodies, and international organisations.	Expansion in the number of projects / initiatives which include overseas engagement.
Promote upskilling and training opportunities for Government staff	Promote opportunities for Pa Enea Government staff through the USP, CEIT and CITTI. Facilitate regular and as required upskilling of all Government staff to keep pace with technological change and the implementation of government information systems.	Productivity improvements are evident in the workforce.

Exhibit 11 (cont): ENGAGE policy roadmap



APII NIKAO SCHOOL
Marae 4 Technology Class
Metua Peua and Kariti Greese



AIRPORT AUTHORITY
—AIRPORT SECURITY SERVICE

10.1 OBJECTIVE 4 – to promote effective whole of Government ICT operational management

10.1.1 Issues

The Government's IT network serves a total of approximately 2,500 users encompassing most Government offices. The ICT Division, a small group within the OPM, provides cross-Government IT infrastructure, support and training, as well as undertaking policy functions and special IT projects as required.

Centralisation avoids duplicated or overlapping functions, thereby improving efficiency and freeing human and capital resources for more productive engagement elsewhere. It also facilitates increased standardisation with respect to IT hardware and software, improving cost-effectiveness and simplifying training and procurement processes.

10.1.2 Barriers and obstacles

- Many individual Ministries or departments maintain separate IT staff, systems and groups, and engage in various autonomous IT projects.
 - Funding for such projects is obtained from disparate sources, rather than channelled through one central point.
 - In some cases this leads to difficulties in co-ordination across agencies and costly duplication of effort and resources.
- Highly specialised applications require particular IT support skills. Examples include the Ministry of Health's specialised patient management information systems, the Ministry of Education's student management system, the government-wide Financial Management Information System and many more.
 - differentiated levels of access, training and ongoing support are required for these systems to be fully integrated with day-to-day operations.

10.1.3 Initiatives

The recently upgraded centralised Government IT system, administered by the ICT Division, provides a timely opportunity for a step-change in operational efficiency with many potential synergies through virtual co-location of networks of all Government entities. In the longer-term virtual network co-location will be complemented by the improved physical proximity that will occur as Ministries and agencies eventually relocate from many geographically dispersed office buildings to the new central Vaikapuangi Government Centre scheduled for development in Avarua. While the new IT system is centralised, each agency has its own virtual network so any exposure to vulnerability will be limited.

10.1.4 Policies

- Promote synergies, rationalisation and centralisation of ICT functions, and the funding which support these, across all of Government
- Provide training and support for users and the new upgraded IT system
- Monitor and evaluate the change process.

10.1.5 Outcomes

The operational improvements facilitated by ICT will lead to more inclusive, agile and resilient government, as well as efficiency gains and cost reductions. Confidence will develop in the new centralised system which will drive further efficiencies.

10.2 OBJECTIVE 5 – to promote a Government-wide approach to improve services for all using ICT

10.2.1 Issues

Digital services, applications and skills, supported by robust IT infrastructure, offer the potential to transform Government from a paper-based organisation to a highly efficient, responsive and agile public service. The use of ICT as a tool to achieve better government through improved service delivery and operations is referred to as e-Government. The potential benefits of implementation of e-Government include significant improvements in internal (Government-to-Government, or G2G) and external (Government-to-Business, or G2B, and Government-to-Citizen, or G2C) public services.

Clear lines of responsibility and adequate resourcing must be established to ensure that a cost-effective holistic Government-wide approach is adopted to continue and complete digital transformation of the public service in the Cook Islands.

10.2.2 Barriers and obstacles

- An e-Government review conducted in 2019¹² identified that implementation of changes was occurring in an ad hoc manner with limited planning and documentation.
- Responsibility was assigned to the small team in the ICT Division of the OPM for all activities related to e-Government, ranging from building the infrastructure to developing policies and addressing operations and maintenance issues.
- Accommodating the responsibility to drive the e-Government project wholly within this Division as currently resourced is proving challenging.

10.2.3 Initiatives

ICT offers Government and businesses opportunities to streamline processes, improve data and information management, and to introduce new and improved services and applications. The Government is committed to leading by example and, as the largest purchaser of IT products and services, is well placed to do so. As an example, with the inclusion of payments systems on websites, Government can promote uptake of digital services. As such to date the initial focus has been on successful implementation of efficient digital G2G processes. Once these are in place efforts will be focussed on G2B and G2C. Government's market-making role as the largest buyer of IT services and products should be recognised. For example, by including payment systems on websites, Government can promote uptake of digital services.

Policy directions for e-Government in the Cook Islands are already articulated in the Public Sector Strategy for 2016-2025. This strategy presents a "Public Service of Excellence" which is the foundation for an e-Government approach. Several e-Government projects are already underway across several Ministries. However, a centralised monitoring and support structure is yet to be put in place.

10.2.4 Policies

- The change process associated with eGovernment implementation and digital transformation shall be effectively managed and co-ordinated with rigorous oversight and sufficient resourcing
- Overall implementation of eGovernment is to be guided by a user-driven approach, whether the users are citizens, businesses or Government agencies
- Regular monitoring and evaluation of progress with e-Government implementation is to occur.

10.2.5 Outcomes

Successful implementation of e-Government will lead to significant improvements in efficiency, accessibility, quality, timeliness and cost-effectiveness of Government service delivery. It will support savings in Government expenditure, including reduced travel, printing and communications costs.

The ability to engage digitally with Government agencies will support cost and time savings for individuals and business representatives who are no longer required to attend Government offices in person to for routine transactions (for example, to apply for driving licences). E-government will promote many other social benefits for citizens, such as facilitating greater engagement in consultative processes and enabling improvements in 'know-your-customer' processes.

12. Asian Development Bank (2019), Government of the Cook Islands eGovernment Assessment & Recommendation, May 2019.



THE ISLANDER RESTAURANT & BAR
Afa Vaomotou (Waiting staff)

10.3 OBJECTIVE 6 – to foster the growth of innovative commercial ICT services and applications to grow the digital economy

10.3.1 Issues

Innovation by businesses in the ICT / digital space may propel sustainable economic growth, increasing productivity and expanding digital trade and commerce. As ICT is an input to many other sectors of the economy there is further scope for growth via knock-on or multiplier effects. Innovation requires commitments to research and development activities, supported by investment.

10.3.2 Barriers and obstacles

- As the Cook Islands emerges from a period of high economic uncertainty triggered by the COVID-19 pandemic, potential and existing business ventures may require incentives and encouragement to innovate and invest in ICT services and applications.

10.3.3 Initiatives

The Cook Island Government SMART Economy Initiative (SMART) of 2020 – 2021 attracted considerable local interest, and tangible outcomes, in return for a relatively small Government investment of \$2 million. Applications were invited for innovative ICT business development proposals involving, for example, software applications and services (ecommerce apps), Internet of Things (IoT), big data applications, and financial technology services (fintech).

SMART was a short-term initiative, and as such it should be treated as a proof-of-concept endeavour. Preliminary outcomes from the initiative were largely positive.¹³ Given the encouraging performance of this initiative, further growth in ICT / digital businesses may be stimulated through assistance with start-up finance.

10.3.4 Policies

- Establishment of a fund for catalyst seed or start-up financing for ICT / digital and data-driven technologies to foster digital entrepreneurship and innovation, subject to available financing.

10.3.5 Outcomes

The number of innovative digital businesses will continue to grow and flourish in the Cook Islands. These businesses will create value by bringing new services and applications to the market, as well as facilitating changed business processes. Overall outcomes will be measured by total contribution to ICT sector revenue and employment over time.

13. Ministry of Finance and Economic Management (2022), SMART economy initiative, Performance as at 28 February 2022, February 2022.

10.4 ENHANCE ROADMAP

POLICY	STRATEGY	INDICATORS
Promote synergies, rationalisation and centralisation of ICT functions across all of Government	Promote standardisation with respect to IT hardware. Ensure documentation of current and new processes.	The total spend on ICT functions across All of Government declines over time.
Provide training and support for users and the new upgraded IT system	Develop standard training modules. Document user processes for new and existing information management systems.	All users are trained promptly. All information management systems have full user manuals and associated training plans for onboarding new staff.
Monitor and evaluate the change process	Establish baselines (financial, administrative) for measuring impact of change.	Financial and administrative improvements over time in relation to baselines.
The change process associated with e-Government implementation and digital transformation shall be effectively managed and co-ordinated with rigorous oversight and sufficient resourcing	Support and provision the ICT Division of OPM for oversight of digital transformation and implementation of ICT policy. A new position – Chief Digital Officer (CDO) – to be established for management of change process. Prioritise plan for implementing digital G2G processes.	Implementation of G2G e-Government will be completed within two years.
Overall implementation of e-Government is to be guided by a user-driven approach	Ensure that digital public services are developed to meet the needs and preferences of citizens and businesses.	Public feedback will indicate a high level of satisfaction with digital public services.
Regular monitoring and evaluation of progress with e-Government implementation	Monitoring of the progress will be conducted using core ITU indicators	The indicators show equal or better performance than comparable countries in region.
Establishment of a fund for catalyst seed or start-up financing for ICT / digital and data-driven technologies	Develop and administer competitive application process. Monitor and report on progress of successful applicants	The contribution of ICT / digital companies to national income will increase over time.

Exhibit 12: ENHANCE policy roadmap

CASE STUDY

SMART INITIATIVE – Collaboration with the private sector to encourage continued development of the ICT

The initiative commenced in July 2020 under the Government's Economic Response Plan, with first stage applications closing in January 2021. Performance evaluations were published in February 2022. The aim of the \$2 million initiative, which provides grants and tax credits, is to support commercially-viable business ventures that will provide new or scaled-up innovative ICT applications and services to businesses and consumers. Ventures funded include:

- Cook Islands Business Hub, SCO (Socially Conscious Outsourcing) Rarotonga Limited – development of a business hub with workstations for the use of business owners and young Professional Pathways employees who undertake outsourced services and access higher education without leaving the Cook Islands.
- ICT and IoT infrastructure for SMART islands, ICT Nexus Limited – introducing an Internet of Things (IoT) network service to enable enterprise-grade solutions and vertical cloud-based applications for businesses, organisations, education and government across Rarotonga, Aitutaki and eventually the whole of the Pa Enua.
- Aitutaki Digital TV network, Araura TV and Radio – digitising the television network to serve more than 500 homes and businesses in Aitutaki with four channels, encompassing news, spiritual well-being, sports and entertainment and tourist information.
- Mobile payment solution, ExplorePay – the first locally built and operated fintech company, offering contactless and secure payment facilities from anywhere.
- Aerial surveying, Akau Film – using the latest Unmanned Aerial Vehicle (UAV) and software technology, conducting baseline surveys of high-risk areas for measuring future environmental changes and disaster impact on behalf of public and private entities.



ICT TEAM: Police Department rooftop tower



AIR RAROTONGA CHECK-IN COUNTER

11.1 OBJECTIVE 7 – To develop a safe and secure enabling framework for the digital economy and society

11.1.1 Issues

Increased ICT availability and Internet participation in the Cook Islands brings both opportunities and risks. Cybercriminals may potentially expose sensitive financial, commercial and personal data, as well as endanger the delivery of critical Government services (for example, finance and health) using various forms of malware, including denial-of-service attacks. Such activities threaten the integrity and security of networks and systems, and the data stored within these.

Personal safety may be at risk as criminals utilise the Internet for scams, phishing activities and identity theft, often targeting vulnerable individuals and groups. Cultural collateral, including music and video, may be expropriated and exploited. Young people and children may be deceived by social predators, intimidated and bullied by acquaintances, and exposed to unsuitable adult content, grooming and misinformation.

11.1.2 Barriers and obstacles

- There is currently no legislation in the Cook Islands that adequately targets cybercrime.
- There is no enabling framework which will create a safe environment and support Cook Islanders' trust in ICT
 - Failure to prevent and mitigate the impact of disruptive forces and protect communities from digital harm will create a barrier to delivery of potential benefits of ICT.

11.1.3 Initiatives

A range of separate initiatives is already underway to address ICT safety and trust issues, including:

- practical advice for online safety for individuals and businesses is available from the Get Safe Online Cook Islands website.¹⁸
- collaboration with international partners
- new 'offences involving computers' proposed in the Crimes Bill 2019 (Part 7, Subpart 9), currently with a Select Committee
- a national identification project led by the Ministry of Justice, which may set the platform for moving into the digital space.

18. <https://www.getsafeonline.org.ck/>.



SMARTIE - (First South Pacific Super-app)
Brett Baudinet, CEO and Founder

11.1.4 Policies

- Strengthen processes for authentication and verification of individuals' identities
- Establish effective legal frameworks to deter and penalise cybercrime
- Harmonisation, coordination and integration of existing cybersecurity policies into one overarching Government policy, including a digital security risk management policy
- A centralised Government system for addressing cybersecurity issues and attacks
- Cybersecurity training to be delivered across Government Ministries and agencies
- Ongoing initiatives to inform public awareness and improve understanding of cyber risk.

11.1.5 Outcomes

The key to creating a secure digital environment lies in preventative action. Both public and private sectors must aim to be cybersecurity ready, and resilient to malicious cyber activities. Cybersecurity skills and knowledge will be developed, supporting a sustainable culture of heightened cybersafety awareness. However, it is also important to recognise that security breaches may still occur despite rigorous cybersecurity systems and processes. As such, appropriate mitigation, deterrent, and enforcement measures and penalties will be in place to address cybercrime activities.

11.2 OBJECTIVE 8 – to develop systems which build trust in governance, protection and privacy of data

11.2.1 Issues

Data plays a central role in informing social, economic, environmental and commercial policies and decision-making. Government uses data for a wide variety of purposes, including supporting policy development and effectiveness, operational decisions, dispute management, accountability and reporting, and workforce planning. Commercial enterprises have a strong interest in gathering and analysing customer data for future marketing and business development purposes. New business models are emerging which are entirely data-driven, illustrating the value of obtaining, storing and using personal data.

In many instances it is in Government and citizens' interests for sensitive information to be shared across public agencies and other organisations. Sharing for the public good may facilitate positive social, economic and environmental outcomes. Timely data sharing can be particularly important when real time actions are required – for example, when financial misconduct is occurring.

The development of new data governance laws for the Cook Islands may be assisted with an understanding of approaches already adopted in other jurisdictions and regions. It will also be important for facilitation of international trade and e-commerce to ensure that any new legislative framework is consistent with legal requirements of trading partners. For example, in 2018 the European Union (EU) enacted a suite of privacy and security standards in the General Data Protection Regulation (GDPR)¹⁹. This imposes a series of obligations on all organisations worldwide which collect data related to people in the EU. The physical location of these organisations in the world is irrelevant. If the privacy standards of the GDPR are violated then severe financial penalties will be imposed.

11.2.2 Barriers and obstacles

- No legal frameworks have been developed for governance, protection and privacy of Cook Islanders' data – that is, there are no privacy laws and no legal rights to data
- There is a need for timely and routine data sharing across some Ministries, departments and agencies. For example, the Ministry of Health must share data for civil registration purposes and in interactions with the Ministry of Justice and welfare agencies.

11.2.3 Initiatives

Existing Government policy is to encourage the sharing of information across public sector agencies as a means of enhancing performance, except where the law requires withholding such information.²⁰ Any personal information is only to be used for the purposes for which it was gathered, and individuals are entitled to access their personal information and request corrections if inaccurate. However, individual agencies are currently tasked with developing processes for this.

11.2.4 Policies

- A policy review and consultative process will inform a clear legal framework for data governance and privacy rights for individuals
- Appropriate legal frameworks are to be established for privacy and data protection
- Operational changes within Government will ensure consistency with the new privacy and data protection requirements
- Sufficient resourcing will be devoted to achieve the policy objectives
- Consumer awareness of privacy rights will be promoted.

11.2.5 Outcomes

An all-of-Government approach to data governance and protection will be implemented and maintained. There will be full transparency regarding how personal data is used and kept safe. Trust in digital technology will be developed to encourage growth in online interaction with Government, and financial and cashless transactions for businesses and individuals.

¹⁹. European Commission (2018), General Data Protection Regulation, May 2018. Available at: <https://gdpr.eu/article-1-subject-matter-and-objectives-overview>. ²⁰. This policy is already reflected in some Government policy documents. See, for example, Government of the Cook Islands (2018), Official Information Management Policy, May 2018.



APII NIKAO SCHOOL
RESEARCH THEME FOR THE TERM /TE MOANA NUI O
HIVA/OCEAN ZONE
Nalija Taripo, Genesis Pau-Vaetoru, Savanah Anguna.

11.3 OBJECTIVE 9 – to provide effective protection for consumers engaged in online activities

11.3.1 Issues

Survey evidence from 2020 indicates that about 45% of Cook Islands firms sell online or buy and sell online.¹⁷ However, in 2021 only 31% of Cook Islands Internet users purchased goods online, according to census information. Building digital trust through cybersecurity and data protection measures will promote increased digital engagement for many applications. However, engaging in online transactions involves considerably more trust than purchasing goods or services in actual shops or business premises. For example, product purchasing decisions are taken with reliance only on online advertising without any viewing of the item, credit card details are provided online, and then a delivery process follows.

11.3.2 Barriers and obstacles

- No additional consumer safeguards are available as yet to support confidence in e-commerce and other online business transactions such as purchasing digital content and subscriptions.
 - As problems could arise at any stage in this chain of events, it is reasonable for consumers to be empowered with rights and recourse to remedies, and for consumers to know and understand these rights.
- There is no legal equivalence between paper-based and electronic forms of exchange for online transactions, or e-transactions legislation.

11.3.3 Initiatives

As part of an examination of barriers to business Government has identified the need to ensure that business laws provide an enabling environment for all types of business including e-commerce¹⁸. As such Government has already completed a review of e-commerce settings, including existing laws, regulations and codes, and is moving to a detailed policy development stage.

The public service policy with respect to information management¹⁹ encompasses a preference for electronic records as these require less physical storage space and are easier to retrieve than paper records. Alternatively paper records may be used where these are necessary for evidential purposes, and where required to reduce risk of loss or damage to ecopies. However, there is no legislation encompassing e-transactions which officially recognises the equivalence of paper-based and electronic transactions.

11.3.4 Policies

Progress recommendations from the e-commerce review, in particular to address legislative gaps and implement effective enforcement mechanism

11.3.5 Outcomes

Effective regulatory and legislative measures will enable and support the development and growth of electronic transactions. Both public and private sector stakeholders and individuals will benefit as these measures enable participation in digital government and facilitate digital business activity such as e-commerce.

11.4 OBJECTIVE 10 – to foster sustainable green ICT to protect the environment

11.4.1 Issues

As the ICT sector expands, inevitably so too does electronic waste (e-waste) as devices and products are used and discarded. E-waste can contain hazardous material and so cannot be consigned to landfill. Without careful stewardship e-waste may lead to adverse impacts on the environment and ecosystem, as well as health and well-being. The Solid Waste Management Strategy²⁰ identified the need to minimise and better manage e-waste, while the subsequent Solid Waste Management Policy encompasses safe storage of hazardous e-waste as an interim arrangement, prior to transfer to overseas environmentally sound disposal facilities.²¹

11.4.2 Barriers and obstacles

There is no current initiative to ensure regular removal of e-waste.

11.4.3 Initiatives

The Government vision is to achieve zero waste and in general recycling initiatives in the Cook Islands are relatively advanced by regional standards. Progress with waste management has occurred with proactive collaboration between Government and the private sector. Solid waste is removed from the Cook Islands periodically, and there have been at least two occasions when substantial amounts of e-waste were removed.

11.4.4 Policies

- Promote safe and ongoing disposal of e-waste to ensure zero environmental impact
- Introduce an annual e-waste collection / recycling initiative for Government ministries and agencies
- Encourage the use of environmentally friendly products and practices in ICT.

11.4.5 Outcome

- All e-waste will be safely re-processed or arrangements will be put in place for removal from the country on a regular basis.

17. Nextrade Group (2020), Cook Islands - Digital Economy Development Survey, 21 September 2020. 18. Government of the Cook Islands (2022), Cook Islands Economic Recovery Roadmap, March 2022. 19. Government of the Cook Islands (2018), Official Information Management Policy, May 2018.

20. Government of Cook Islands (2013), National Solid Waste Management Strategy, 2013 – 2016, 2013. 21 Government of Cook Islands (2016), Solid Waste Management Policy, 2016 – 2026, 2016.



11.5 ENABLE ROADMAP

Policy	Strategy	Indicators
Strengthen processes for authentication and verification of individuals' identities	Explore synergies between national ID initiative and digital unique identifiers, together with other potential benefits such as administrative efficiencies, and review privacy implications. Develop policy and implement.	A reliable means of online identity verification is available within two years.
Establish effective legal frameworks to deter and sanction cybercrime	Identify appropriate legal provisions, informed by international experience and precedents. Develop a standalone Cybersecurity / Cybercrime Act which will offer more scope to target and address the many different aspects which comprise cybersecurity.	Completion of legislation within two years.
Harmonisation, coordination and integration of existing cybersecurity policies into one overarching Government policy	Review all existing policies Establish best practice for overarching policy Develop a digital security risk management policy	Completion of overarching policy within one year.
Develop a centralised Government system for addressing cybersecurity issues and attacks	Establish measures and security processes to prevent and stop cyberattacks and recover any data.	The number of cyber incidents to be lower than other countries in the region.
Cybersecurity training to be delivered across Government Ministries and agencies	Initial training once the centralised system is in place. Follow-up training as required, in recognition that capabilities and skills must continue to adapt and evolve to keep pace with the changing ICT environment	The number of cyber incidents initiated from errors by individuals will decline.
Ongoing initiatives to inform public awareness and improve understanding of cyber risk	Review and update current initiatives	The number of cyber incidents involving the public will decline.
Policy review and consultative process will inform a clear legal framework for data governance and privacy rights for individuals	Consult on requirements for consent for data collection / storage; limits on the extent of personal data which may be collected; how the data may be used. Develop and enact legislation.	Data governance and privacy legislation is enacted within two years.
Promote safe and ongoing disposal of e-waste to ensure zero or minimal impact on the environment	Partner with private sector in new initiatives such as e-waste days Ensure funding to support regular e-waste disposal.	Appropriate disposal of e-waste occurs at regular intervals.

Policy	Strategy	Indicators
Appropriate legal frameworks are to be established for privacy and data protection	A review of approaches to privacy and data protection in other jurisdictions, including consideration of possible alignment with established legal frameworks of trading partners A review and potential update of the Public Records Act 1984 Drafting and enactment of the relevant laws, reflecting the outcome of the policy consultative process and informed by precedents from other jurisdictions	Completion of the legislation within three years.
Operational changes within Government will ensure consistency with the new privacy and data protection requirements	Review of current processes for sharing information and dealing with personal information in individual agencies. Review to ensure secure systems and mechanisms for data sharing are in place in Government networks, which comply with the requirements of the new regime	Full compliance with the new regime will be achieved within a reasonable timeframe after passing of legislation.
Sufficient resourcing will be devoted to achieve the policy objectives	Appointment of Chief Data & Privacy Officer (CDPO) to lead required workstreams	Completed implementation of all data governance and privacy initiatives within four years.
Consumer awareness of privacy rights will be promoted	Campaign to ensure individuals and other stakeholders are aware of the new data protection and privacy rights and arrangements CDPO to take responsibility for ensuring that individuals and other stakeholders are aware of the new data protection and privacy rights and arrangements.	All individuals are confident that their privacy will be protected in online activity.
Progress recommendations from the e-commerce review mechanism	Draft and enact new policy and legislation.	An increase in the proportion of businesses participating in the digital economy.
Introduce regular e-waste collection / recycling initiative for Government	Review Government processes for disposing of e-waste	Annual disposal of e-waste from Government ministries and agencies
Encourage the use of environmentally friendly products and practices in ICT	Review Government procurement practices in order to minimise future e-waste.	Green policies are in place with respect to Government ICT procurement practices.

Exhibit 13:ENABLE Policy Roadmap

A.INSTITUTIONAL STRUCTURE

The ICT Division of OPM will take overall responsibility for the implementation of the ICT policy, together with overseeing monitoring and evaluation processes. The Ministry of Finance and Economic Management will provide assistance with, and guidance on, financial and economic aspects of the ICT policy.

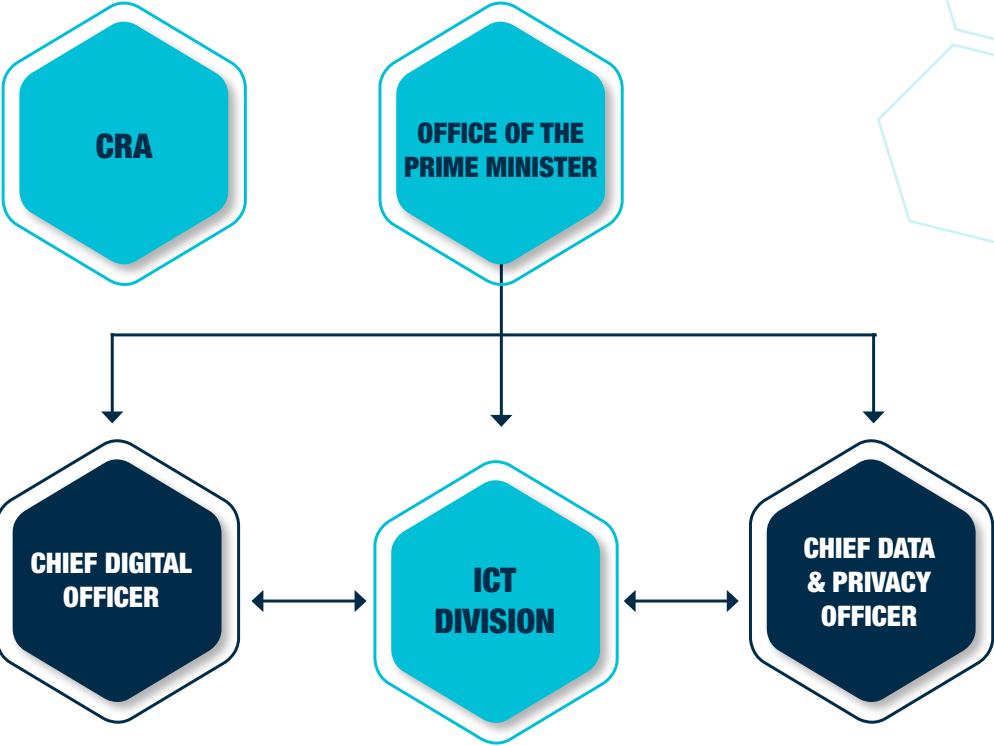
Embedded in this policy is a new institutional structure (Exhibit A.1) in which roles and responsibilities may be clearly assigned in order to implement the policy and associated strategies.

The three main implementing bodies – that is, the ICT Division, the Chief Digital Officer (CDO) and the Chief Data and Privacy Officer (CDPO) – will all be situated within the Office of the Prime Minister (OPM). As the ICT Division is currently located within the OPM this will avoid disruption, and facilitate a rapid start on policy implementation.

The CDO and CDPO are both new operational roles, encompassing activities and initiatives to implement the policy. As this will require budgetary allocations, the ICT Division of OPM will review requirements and develop a business plan for budgetary approval.

The CRA is an independent statutory body. In the exercise of its powers it must have regard to published economic policies of Government. It is anticipated that the CRA will also have an interest in other issues addressed in the ICT policy, given the inherent relationships with its duties.

EXHIBIT A. 1: ICT GOVERNANCE STRUCTURE



ICT TEAM — Technical Training
Harmon Harmon, Phillip Ngatoko, George Ellis Jr
Wally Wuatai, Mary Manea

CHIEF DIGITAL OFFICER

Some jurisdictions in the region have already established dedicated departments or groups to assume responsibilities for digital transformation, led by a CDO. The key role for the CDO is overseeing eGovernment projects, however various other roles may be performed, including:

- driving and co-ordinating Government ICT policies, strategies and legislation
- overseeing other digital initiatives, such as cybersecurity
- engaging with key stakeholders such as industry, development agencies, and non-governmental organisations (NGOs) to ensure that digital services meet user needs and to develop partnerships for addressing the work programme
- developing and maintaining a monitoring and evaluation framework
- overseeing procurement and purchasing
- encouraging development of the local ICT sector and increasing awareness of the changes in order to ensure sustainability.

CHIEF DATA AND PRIVACY OFFICER

While the main focus of the CDO is internal to Government, the CDPO role involves external outreach as well as internal functions. Key responsibilities include:

- leading data governance, protection and privacy workstreams
- leading consumer protection initiatives
- public outreach.

B.GLOSSARY

ACL: Avaroa Cable Limited

Broadband: A communications channel which carries traffic at a rate higher than dial-up communications

CEIT: Centre of Excellence in Information Technology

CDO: Chief Digital Officer

CDPO: Chief Data and Privacy Officer **CITI:** Cook Islands Tertiary Training Institute

CRA: Competition and Regulatory Authority

Digitalisation: Take-up of digital technologies and applications

Digital transformation: Changing the way that processes work and services are delivered to embed digital technologies in Government, businesses and society

Digitisation: Transition from manual or paper-based records to a digital format

e-commerce: electronic commerce

e-Government: electronic Government

e-waste: electronic waste

EU: European Union

Fintech: Financial technology services

FTTH: Fibre to the home – that is, replacing copper technology with fibre

G2B: Government-to-business transactions, processes or services

G2C: Government-to-consumer transactions, processes or services

G2G: Government-to-Government transactions, processes or services

GB: Gigabyte

GDPR: General Data Protection Regulation

GNP: Gross National Product

ICT: Information and Communications Technologies – that is, technologies and equipment that handle (e.g., access, create, collect, store, transmit, receive, disseminate) information and communication, associated devices, services and applications and their governance

IoT: Internet of Things

ISP: Internet Service Provider

ITU: International Telecommunication Union

Know-your-customer: A systematic process undertaken by financial organisations or businesses to verify the identity of current and potential customers

MFEM: Ministry of Finance and Economic Management

NGO: Non Government Organisation

OPM: Office of the Prime Minister

SCO: Socially Conscious Outsourcing **SIDS:** Small Island Developing States

SMART: A short-term Government economic initiative providing seed funding for ICT projects

TCI: Telecom Cook Islands

UAV: Unmanned aerial vehicle

USP: University of the South Pacific

VCI: Vodafone Cook Islands

C. REFERENCES

- Asian Development Bank (2022), Cook Islands ICT Policy, 24 March 2022.
- Asian Development Bank / Kitskoo (2019), eGovernment roadmap definition for the Government of the Cook Islands, stakeholder workshop, 31 January 2019.
- Asian Development Bank / Kitskoo (2019), Government of the Cook Islands eGovernment Assessment & Recommendation, May 2019.
- Avaroa Cable Limited (undated), Beyond the Manatua One Polynesia Cable.
- Avaroa Cable Limited (undated), Seizing the opportunity: Maximising the impact of the Manatua One Polynesia Cable in the Cook Islands.
- Competition and Regulatory Authority (2022), Annual Report, 2021-2022.
- Competition and Regulatory Authority (2021), Annual Report, 2020-2021.
- European Commission (2018), General Data Protection Regulation, May 2018.
- Government of the Cook Islands (2019), Competition and Regulatory Authority Act, 2019.
- Government of the Cook Islands (2021), Cook Islands Economic Development Strategy 2030, January 2021.
- Government of the Cook Islands (2022), Cook Islands Economic Recovery Roadmap, March 2022.
- Government of Cook Islands (2017), Cook Islands Government ICT infrastructure plan, December 2017.
- Government of the Cook Islands (2018), Official Information Management Policy, May 2018.
- Government of the Cook Islands (2013), Cook Islands Telecommunications Industry Principles, 29 January 2013.
- Government of the Cook Islands (2019), Cook Islands Telecommunications Market Competition Policy 2019.
- Government of the Cook Islands (2022), Final ToR E-commerce Acceleration Plan and legislative gap assessment, 2022.
- Government of the Cook Islands (2019), Information, Communication and technology (ICT) strategy 2019 – 2024.
- Government of the Cook Islands (2015), National ICT Policy 2015-2020, 2015
- Government of the Cook Islands (2021), National Investment Infrastructure Plan (NIIP), 2021 – 2030, June 2021.
- Government of Cook Islands (2013), National Solid Waste Management Strategy, 2013 – 2016, 2013.

REFERENCES Cont...

- Government of the Cook Islands (undated), National Sustainable Development Agenda 2020+ (2021 – 2121).
- Government of the Cook Islands (2016), National Sustainable Development Plan, 2016 – 2020, January 2016.
- Government of Cook Islands (2016), Solid Waste Management Policy, 2016 – 2026, 2016
- Government of the Cook Islands (undated), Te Ara Akapapa'anga Nui NSDA 2020 + Te Akapapa'anga Uki One Generation – 25 Years.
- Government of the Cook Islands (undated), Te Ara Akapapa'anga Nui NSDA 2020 + Te Kaveinga Iti 5 Year Score Card.
- Government of the Cook Islands (2019), Te Kaveinga Nui: The National Sustainable Development Plan 2016-2020 2019 Indicator Report, 2019.
- Government of the Cook Islands (2021), Te Kaveinga Nui: The National Sustainable Development Plan 2016-2020 2020 Indicator Report, November 2021.
- Government of the Cook Islands (2019), Telecommunications Act, 2019.
- Hansen, S. L. and Jones, N. C. (2019), Economic impact of broadband in LDCS, LLDCS and SIDS, United Nations & ITU, 2019.
- International Telecommunication Union (2011), Framework for a set of e-Government core indicators, December 2011.
- International Telecommunication Union (2014), Report on the work carried out by the correspondence group on the elaboration of a working definition of the term "ICT", 3 November 2014.
- Jobodwana, Z. N. (2009), Telecommunications Liberalisation in Africa: Proposed Regulatory Model for the SADC Region, Journal of Digital Forensics, Security and Law, 4(4).
- Ministry of Finance and Economic Management (2022), SMART economy initiative, Performance as at 28 February 2022, February 2022.
- Nextrade Group (2020), Cook Islands – Digital Economy Development Survey, 21 September 2020.
- PwC (2020), Pacific Digital Transformation: Realm Countries Digital Government Assessment, Executive Summary for Policymakers, November 2020.
- United Nations Conference on Trade and Development (2014), A framework for Information and Communications Technology Policy Reviews: helping countries leverage ICT for development, 2014.



GOVERNMENT OF THE COOK ISLANDS

