# 2022/23 Action Plan for the Digital Strategy for Aotearoa

**SEPTEMBER 2022**

Te Kāwanatanga o Aotearoa
New Zealand Government

# 2022/23 Action Plan for the **Digital Strategy for Aotearoa**

Digital technologies hold significant opportunities for Aotearoa New Zealand to foster a productive, sustainable and inclusive economy. They can enable innovation and the development of new products and services, improve government services and the efficiency of our economy, and increase our resilience to shocks.

The Digital Strategy for Aotearoa (DSA) sets out a vision to seize these opportunities – an aspiration that Aotearoa New Zealand's people, communities, economy and environment are flourishing and prosperous in the digital era. The DSA benefited from strong community engagement, with 10 virtual hui, over 100 written submissions and a vibrant online discussion, reflecting the importance of digital technologies for our future society.

### Turning vision into reality

This Action Plan will help turn the DSA's ambition into reality. It provides a living roadmap for the Government's implementation of the DSA, setting out concrete actions that will advance the goals of Mahi Tika – Trust, Mahi Tahi – Inclusion and Mahi Ake – Growth. Combining a 5-year time horizon with an annual "refresh", the Action Plan will allow us to remain responsive to emerging technologies and policy challenges and help ensure our efforts are targeted at the highest priorities. An initial reflection together with stakeholders will take place later in 2022.

This first Action Plan describes 11 flagship initiatives that will advance the DSA in the near-term. These initiatives collectively cover a broad range of issues, from infrastructure and cyber security to skills and Māori innovation capacity, through to building our national digital "brand" and acting on the global stage for a more trusted digital environment. The Action Plan also briefly highlights examples of other activities that will contribute to implementing the DSA over the next few years, such as initiatives to tackle digital exclusion through building skills amongst older people and Pacific peoples. A key strength of the Action Plan's initiatives is that they reinforce each other to spur progress on Aotearoa New Zealand's digital transformation. Many contribute to multiple goals, reflecting how progress on one front – say, trust – can give momentum to others.

With an eye to the future, the Action Plan also signposts 4 issues that we know we must tackle: data ethics and the development and use of artificial intelligence, enhancing our cyber security, the challenges and opportunities of digital inclusion, and digital twins. These issues emerged in the engagement process on the DSA and reflect our shared ambition to design and use digital technologies in world-leading, ethical and equitable ways that reflect our uniqueness. We will continue to flesh these out in the coming months, including their resourcing needs and the lead agencies that can drive progress.

Like any good navigation aid, this Action Plan has a clear destination, but there are multiple possible routes. Our 5-year timeline, depicted overleaf, gives us a clear line of sight using the route we see before us at this time. The annual refresh and the decisions taken by future governments may adjust our course, but the goal of an inclusive, trusted digital nation remains our endpoint.

As we advance, we are guided by the ambitious targets for 2032 set by the DSA. To assess progress against our goals, we will regularly monitor and gauge where we stand against the DSA's measures of success. By bringing together initiatives from across the whole of government, reflecting the input of our businesses and communities, this Action Plan and its future updates places us on a clear path to digital success.

# **Roadmap to 2027** and measures of success

## 2022

- Digital Boost Checkable tool launched
- Innovation Trailblazer Grant launched
- Maori Data Governance initiative co-design and implementation continues
- Activation of Tech Story
- 5G spectrum allocated
- Pacific Community Digital Hubs established
- Digital Identity Services Trust Framework Bill passed

## 2023

- Lifting Connectivity in Aotearoa launched
- Remote Users Scheme commences
- Christchurch Call Leaders meeting (2023)
- Digital Skills and Talent Plan being implemented
- Digital Device Fund rollout
- Data roadmap for Cyber Resilience Measurement Framework created
- Digital accessibility and connectivity support to Pacific communities via 0800 Tech Hub line rolled out

## 2024

- Rural Connectivity Upgrades complete
- Pacific STEAM internships programme with industry partners established
- Data collection and creation for Cyber Resilience Measurement Framework begins
- Dedicated Digital Skills Body in place

## 2025

- Data Ethics and AI Centre established
- National Digital Twin infrastructure and interoperability

## 2026

- Digital Economy measurement framework in place
- HIRA (National Health Information Platform) complete

## 2027

1 YEAR | 2 YEARS | 3 YEARS | 4 YEARS | 5 YEARS

## Ongoing work programmes

***Note:*** *The action plan and roadmap will be reviewed and refreshed annually out to 2032. Items in light grey are not yet funded or committed into work programmes.*

New Zealand Cyber Security Strategy Implementation (Ongoing)

Christchurch Call Action Plan implementation (Ongoing)

Digital Inclusion Action Plan implementation (Ongoing)

Te Pae Tawhiti Transformation programme (MSD) (Underway)

Digital Commerce programme (NZTE) (Ongoing)

Office for Seniors Digital Literacy Training Initiative (Ongoing)

Te Whata data platform and Pacific Data Fale o Aotearoa delivery continues (Ongoing)

## Measures of success

- All New Zealanders feel safe and supported online
- The economic impacts of cyber-incidents in New Zealand are lower than in comparable countries
- All New Zealanders are able to use verified digital identity should they choose to
- High-speed internet is available to all New Zealanders
- All New Zealanders have the tools, skills and confidence to do all they want online
- All New Zealanders can afford a quality internet connection and internet enabled device
- Digital & ICT exports on track to becoming New Zealand's leading export earner
- All New Zealand businesses are born digital, and supported to adopt the digital tools that work for them
- The digital sector employs more than 10% of the New Zealand workforce in high value jobs

## ADVANCING 11 FLAGSHIP INITIATIVES

The Action Plan's flagship initiatives contribute in different degrees to the 3 themes of the DSA:

### DIGITAL IDENTITY SERVICES TRUST FRAMEWORK

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
|---|---|
| Department of Internal Affairs | Progress the Digital Identity Services Trust Framework legislation through the legislative stages. |

Digital identity is about verifying a person's identity online. It is growing in importance, as digital service providers need to know who a person is or to confirm information about them in order to provide a range of services, such as banking or healthcare. The Digital Identity Services Trust Framework will set out rules for the delivery of digital identity services, address gaps in current regulation and assist the development of trusted, people-centred digital identity services. It will provide New Zealanders with the confidence to share identity information about themselves with prospective employers or digital service providers in a secure and privacy-enhancing way that is flexible and incorporates tikanga Māori. It will also enable businesses to have greater confidence in the validity of the information they rely on and will support cyber security and our fight against privacy breaches. A Digital Identity Services Trust Framework Bill was introduced into Parliament in September 2021 and is currently progressing through legislative stages.

**Want to know more?**

› www.digital.govt.nz/digital-government/programmes-and-projects/digital-identity-programme/trust-framework

### ĀROHIA INNOVATION TRAILBLAZER GRANT

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
|---|---|
| Ministry of Business, Innovation and Employment (implemented by Callaghan Innovation) | Introduction of new grant from mid-September |

Innovation can take many forms, from rolling out new products and services, to improving production and business processes. In the digital age, innovation is increasingly data-driven, collaborative and service-oriented, and does not necessarily involve dedicated research and development (R&D) activities. To fill a gap in the current funding landscape, the Government is introducing the Ārohia Innovation Trailblazer Grant for non-R&D innovation with potential to create spillovers to the rest of the economy. This initiative broadens the type of innovation support offered to those like digital firms whose innovation activities are not always eligible under the Research and Development Tax Incentive (RDTI).

**Want to know more?**

› https://www.mbie.govt.nz/about/news/new-grants-to-boost-business-innovation/

**KEY:** **MAHI TIKA – TRUST** **MAHI TAHI – INCLUSION** **MAHI AKA – GROWTH**

## CHRISTCHURCH CALL

**Strong contribution to:**

The March 2019 terrorist attack on two mosques in Christchurch had an unprecedented online impact and marked a turning point for the tech sector and governments in how they work to address terrorist and violent extremist content (TVEC) online. Together with France, in May 2019 New Zealand brought together Heads of State and government with leaders from the tech sector alongside civil society to adopt the Christchurch Call – a pledge to eliminate TVEC online while preserving human rights and a free, open, and secure internet. Internationally coordinated multistakeholder responses are critical to achieving results. New Zealand and France continue to lead an active coalition of over 55 governments, 10 major tech companies and more than 70 civil society organisations and experts in driving work to fulfil the 24 Call Commitments, and the work programme agreed at the 2021 Leaders' Summit. This includes building a sustainable and effective global community to power the Call work, addressing algorithms and their role in amplification and radicalisation, achieving greater transparency from governments and tech companies, and improving crisis readiness and response capabilities.

**Want to know more?**

› www.christchurchcall.com

**LEAD AGENCY**

Department of Prime Minister and Cabinet / Ministry of Foreign Affairs and Trade

**ACTION IN 2022**

Continue work on agreed priorities under 2021 work plans

Convene a meeting of Call leaders to assess progress and affirm priorities for next 2 years

## MĀORI DATA GOVERNANCE

**Strong contribution to:**

Data governance policies and frameworks shape the way in which we can unlock the potential of data to help solve economic and societal challenges, as well as the way we address risks associated with accessing and sharing data. The Māori Data Governance initiative aims to develop and implement guidance about a data governance approach that reflects iwi and Māori interests and embeds Te Tiriti. A process of co-design, co-led by the Data Iwi Leaders Group and Stats NZ, will provide government agencies with an approach to data governance that enables Māori data needs, interests and aspirations and ensures future developments are informed by and with Māori. The model aims to be applicable across the data system, allowing its adoption and implementation across key data agencies. A high-level working group – Te Ohu Raraunga – comprising iwi and Māori data experts (Taha Māori group) and key Crown agencies (Taha Kāwanatanga group) is developing the governance model.

**Want to know more?**

› https://data.govt.nz/toolkit/data-governance/maori/

**LEAD AGENCY**

Stats NZ

**ACTION IN 2022**

Te Ohu Raraunga developing governance model using waka hourua concept

Completed model ready for testing and implementation by early 2023

**KEY:** MAHI TIKA – TRUST MAHI TAHI – INCLUSION MAHI AKA – GROWTH

## NEW ZEALAND'S CYBER SECURITY STRATEGY

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
| --- | --- |
| Department of Prime Minister and Cabinet | Continued rollout of Cyber Security Strategy<br>The launch of a cyber security skills programme for intermediate and secondary schools |

Strengthening trust in the online environment is essential if we want individuals, firms and communities in Aotearoa to benefit from digital technologies and for us to reach our goal of becoming a world-leading digital nation. The ongoing rise in cyber-enabled threats during the COVID-19 pandemic, as vividly illustrated by the May 2021 cyber attack on the Waikato District Health Board's hospital facilities that heavily impacted services and treatments for several months, only accentuates this. New Zealand's Cyber Security Strategy was launched in 2019 to enable New Zealand to thrive online. Its priorities are to support cyber security aware and active citizens, build a strong and capable cyber security workforce and ecosystem, foster an internationally active, resilient and responsive New Zealand, and drive a proactive approach to tackling cybercrime. Implementing the strategy is a flagship initiative under the DSA, to build national resilience and ensure the public and private sectors are working hand-in-hand to support a more secure online world. Measuring our progress in lowering the economic impacts of cyber incidents and improving cyber security practices is within the scope of this work.

Ensuring that we have the workforce to meet the growing demand for cyber skills will be foundational to our efforts to lift our national cyber security. Building a diverse domestic cyber talent pipeline will remain a focus of longer-term efforts. As part of this work, the Government is exploring opportunities to partner with industry to tackle workforce and skills shortages. This includes partnering on initiatives for New Zealand intermediate and secondary school students to develop students' cyber security knowledge, lifting their skills in this area, and to raise their interest in and awareness of cyber security careers. New Zealand's reputation as a trusted partner creates an attractive platform for the domestic cybersecurity industry to export its products and services to the world.

**Want to know more?**

- https://dpmc.govt.nz/our-programmes/national-security/cyber-security-strategy" Cyber Security Strategy — Department of Cabinet and Prime Minister

## DIGITAL BOOST

**Strong contribution to:**

Small enterprises (those with 19 or fewer employees) make up 97% of Aotearoa New Zealand's firms and 29% of employment.[1] Improving their capabilities to adopt and use digital technologies will not only have a tangible impact on their own productivity and resilience, but will also enable stronger growth, productivity and job creation across the country. The Digital Boost programme offers training and support to small businesses to help them improve their digital skills, with the goal of reaching 90,000 firms. Recently launched, Digital Boost Checkable is a free digital diagnostic tool that performs detailed reviews of a business's digital presence and provides a prioritised plan for what to fix and how. The next phases of this programme will include expansion of the *Digital Boost Alliance* whose members develop commitments to collectively drive the uptake of digital technologies across Aotearoa. *Digital Boost* is currently funded to June 2023.

**Want to know more?**

- Digital Boost https://digitalboost.co.nz
- Digital Facilitation Scheme www.mbie.govt.nz/business-and-employment/business/support-for-business/digital-boost/digital-facilitation-scheme/

**LEAD AGENCY**

Ministry of Business, Innovation and Employment

**ACTION IN 2022**

Introduction of "Checkable" diagnostic tool

Digital Boost Alliance Roadmap

## ACCELERATING MĀORI INNOVATION

**Strong contribution to:**

Digital technologies offer significant opportunities for Māori, from revival of te reo Māori and revitalisation of cultural identity, to harnessing mātauranga for innovative businesses, to job creation for rangatahi. Accelerating Māori Innovation seeks to work across a range of activity in the Māori digital economy and increase the participation of Māori in the digital sector as business owners, entrepreneurs and employees. A first step under this initiative will be to complete a report on the sector ecosystem to enhance the visibility of existing Māori activity and make connections for stronger impact. Beyond this ecosystem map, the future work of the Māori Spectrum Commission can be woven into this, and the Government will continue discussions with representatives of the Data Iwi Leaders Group to explore steps and joint work that will enable Māori to pursue innovative activity using digital technologies. Future steps could also include developing a "champions" function to provide active support for Māori in the sector.

**Want to know more?**

- https://digitaltechitp.nz

**LEAD AGENCY**

Ministry of Business, Innovation and Employment

**ACTION IN 2022**

Completion of research to map the Māori-in-tech ecosystem

Agreement with Data Iwi Leaders on joint work to advance Māori innovation

1 See NZ Business Demography Statistics (February 2021) at www.stats.govt.nz/information-releases/new-zealand-business-demography-statistics-at-february-2021

**KEY:** MAHI TIKA – TRUST MAHI TAHI – INCLUSION MAHI AKA – GROWTH

## IMPROVING RURAL CONNECTIVITY

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
|---|---|
| Ministry of Business, Innovation and Employment (and partner agency, Ministry for Primary Industries) | Remote Users Scheme launched<br>Rural Capacity Upgrade programme extended |

Being able to participate digitally is essential for inclusion in today's economy and society. Whether it is for online public services, for health and education, for staying in touch with family and friends, or for supporting innovative development and application of digital technologies across our businesses and communities, people in all regions of Aotearoa New Zealand should have access to broadband and voice connectivity that meets their life and work needs. With its initiative on Improving Rural Connectivity the Government will deliver on its 2020 election manifesto commitment to provide an additional $60 million to improve connectivity to the most under-served regions that face challenging capacity and coverage constraints. As a part of this investment, the Government has created the Remote Users Scheme (RUS), which will provide new coverage and connection options for households in remote and rural areas that currently lack any broadband service. These regions also benefit from the ongoing benefits associated with the Ultra-Fast Broadband Programme (UFB), Rural Broadband Initiative (RBI), Marae Connectivity, Regional Connectivity, Rural Capacity Upgrade (RCU) and Mobile Blackspot Fund (MBF) initiatives, which together comprise government investment of over $2.5 billion since 2011.

**Want to know more?**

› Accelerating our economic recovery – Budget 2022 – 19 May 2022

## TE ARA PAERANGI – FUTURE PATHWAYS

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
|---|---|
| Ministry of Business, Innovation and Employment | Preparation of a White Paper strategy document |

The development and adoption of digital technologies benefits significantly from cutting-edge research, science and innovation activities. In turn, digital technologies, with data at their core, can help strengthen research, science and innovation systems. The Te Ara Paerangi – Future Pathways programme aims to create a modern, future-focussed public research system for Aotearoa New Zealand, one that can stand alongside the best systems in the world. Digital technologies can play a role in achieving this vision, including through strengthening data infrastructure that enables more frontier research and build greater connectivity across the system. Digital connectivity could also support stronger deployment of our research system resources to the regions, where mātauranga Māori experts and practitioners live and work, helping to honour Te Tiriti o Waitangi / The Treaty of Waitangi and give life to Māori research aspirations. Consultations on a Green Paper have closed; the next steps for the Te Ara Paerangi – Future Pathways programme will be a White Paper strategy document that will confirm directions for policy.

**Want to know more?**

› https://www.mbie.govt.nz/have-your-say/future-pathways

**KEY:** MAHI TIKA – TRUST MAHI TAHI – INCLUSION MAHI AKA – GROWTH

## DATA AS A TOOL FOR DECISION-MAKING AND WELLBEING

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
|---|---|
| Stats NZ | Continue to build the datasets available on *Te Whata* and further enhance functionality<br><br>Continue acting as an advisor on Pacific data resources that will be disseminated through the *Pacific Data Fale* hosted on FigureNZ |

The way in which data are organised and presented have an important impact on the insights we gather and the stories we can tell. Two initiatives aim to help Māori and Pacific peoples access data and use it to advance their communities.

***Te Whata***

Iwi have created a unique data platform that enables Iwi Māori to harness data for iwi-led design and development. *Te Whata* is a data platform designed specifically by iwi, for iwi. It brings together iwi data from multiple verified sources, which allows Iwi Information Managers to configure indicators that can inform iwi strategies and investments. *Te Whata* enables iwi Māori to share data narratives that more accurately reflect iwi values and realities. *Te Whata* empowers iwi to make key decisions for themselves, by themselves, or if they choose, with their Crown partners through critical and strategic conversations informed by the quality data available in *Te Whata*.

***Pacific Data Fale o Aotearoa***

In New Zealand there is also a platform designed to improve Pacific peoples' wellbeing. *Pacific Data Fale o Aotearoa* brings together data, research and reports on Pacific peoples in Aotearoa in the areas of demographics, health, education, economy and wellbeing. It also offers a directory of Pacific data experts, analysts, thinkers and networks, to help give context to the rich data available.

Both of these platforms show and acknowledge the innate and immense value that diverse perspectives of both data methodologies and the use of data have on Aotearoa New Zealand's collective wellbeing.

**Want to know more?**

› https://tewhata.io and https://pacific.figure.nz

**KEY:** **MAHI TIKA – TRUST** **MAHI TAHI – INCLUSION** **MAHI AKA – GROWTH**

## DIGITAL TECHNOLOGIES INDUSTRY TRANSFORMATION PLAN

**Strong contribution to:**

| LEAD AGENCY | ACTION IN 2022 |
|---|---|
| Ministry of Business, Innovation and Employment | Roll out of "Tech Story"<br>Develop SaaS ecosystem<br>Advancement of actions in the Digital Skills and Talent Plan |

The digital technologies sector – activities like data processing, computer system design and software publishing – contributed over $7.4 billion to the New Zealand economy in 2020, and employment in the sector is growing fast. The Digital Technologies Industry Transformation Plan (ITP) is a key initiative in the Mahi Ake – Growth pillar of the DSA. It will help accelerate economic recovery and our rebuilding from COVID-19 and move New Zealand towards the goal of a high wage, low emissions economy. One important initiative under the ITP is to roll out in selected overseas markets a compelling New Zealand Tech and Innovation Story. Under the banner of "We See Tomorrow First", the Tech Story will improve international perceptions of our tech sector, and in so doing increase export sales and attract overseas talent and investment. A related action will be the development of a domestic version of the Tech Story, which will be used to showcase the career potential of the sector to young New Zealanders. The ITP will also advance support for the Software-as-a-Service (SaaS) ecosystem. Considerable work has already been done to set up kiwiSaaS, a community that will enable business leaders and budding entrepreneurs to share ideas and best practices for becoming successful exporters and job creators in our economy.

The ITP is also advancing a targeted implementation of the Digital Skills and Talent Plan, which will drive a more cohesive approach to addressing gaps and opportunities in the digital skills pipeline, including in areas such as SaaS and cyber skills. Work to develop, enhance and retain our digital workforce can support efforts to build both generic and specific skills within the pipeline, noting that pathways to and along specific career roles are often interlinked and that many digital skills roles require a combination of skills. Addressing gaps in the skills pipeline includes (but is not limited to) better work-integrated pathways into digital roles (including SaaS and cyber) and efforts to improve the diversity of the sector's workforce. Measurement of the participation in digital technology standards in secondary school, and science, technology, engineering, arts and mathematics (STEAM) subjects in tertiary education, is within the scope of this work.

**Want to know more?**

› https://digitaltechitp.nz/

## REINFORCING OUR EFFORTS – OTHER SELECTED ACTIVITIES

- ***Digital Safety Group*** (Department of Internal Affairs): The Digital Safety Group responds to violent extremist content and child sexual abuse material online. Internal Affairs' Digital Child Exploitation Inspectors work with local and overseas agencies swapping intelligence about people using the Internet to share objectionable material. They have the expertise to track down and catch offenders. Digital Violent Extremism Investigators respond to content that promotes or encourages violent extremism and where necessary work with online content hosts to have such material removed.

  www.dia.govt.nz/Online-Safety

- ***Ngā Tikanga Paihere Guidelines*** (Stats NZ): Ngā Tikanga Paihere focuses on how data about Māori and other under-represented sub-groups are used for research purposes. It draws on 10 tikanga, including pūkenga (knowledge and expertise), pono (accountability and transparency) and tapu (sensitivity and risk), to propose a framework to guide safe, responsible and culturally appropriate use of data.

  https://data.govt.nz/assets/data-ethics/Nga-Tikanga/Nga-Tikanga-Paihere-Guidelines-December-2020.pdf

- ***Digital inclusion through skills development*** (Office for Seniors and Ministry for Pacific peoples): Older people and Pacific people are 2 groups that public consultation and other research have indicated are at higher risk of digital exclusion, and older people's trust and confidence in using digital technology diminishes even further as they age. The Office for Seniors is leading an international award-winning digital literacy training initiative to support older people to be online and carry out online transactions safely, enabling them to live a good quality life as they age.

  Additionally, the Government is working with the Pacific community to boost digital inclusion through developing Pacific Community Digital Hubs to support improved digital access and skills growth, establishing a Community Digital Devices Fund to help with accessing digital devices, and building Pacific science, technology, engineering and mathematics (STEM) futures through the Toloa programme. Milestones in the coming years include rolling out services through the 0800 Tech Hub line with the Ministry of Education to provide digital accessibility and connectivity support to Pacific communities, delivering the Toloa Wellbeing Programme pilot to support Pacific STEAM students with pastoral care, and establishing a Pacific STEAM internships programme with industry partners.

  https://officeforseniors.govt.nz/our-work/digital-inclusion/ and https://www.mpp.govt.nz/programmes/toloa/

- ***Te Pae Tawhiti Transformation Programme (Ministry of Social Development):*** ***Te Pae Tawhiti Transformation Programme*** is a large multi-year change programme that will make it easier and simpler for New Zealanders to get help and support through the welfare system when they need it, supporting the Government's overhaul of the welfare system. It will deliver big gains for New Zealanders over its lifetime, including a fully digital service for those who want to use it, fast and accurate services, simpler and transparent processes, and the ability to seek more personalised assistance when needed. Funding was provided in Budget 22 for 1 year to design and lay the foundations in readiness for the transformation of MSD's operating and service models. A detailed business case is being prepared.

  https://www.msd.govt.nz/about-msd-and-our-work/about-msd/strategies/te-pae-tawhiti/index.html

- ***Government Cloud adoption*** (Department of Internal Affairs): The Government is supporting agencies to adopt cloud technologies, in order to help enhance customer experiences, support continuity of services and security improvement, and enable better collaboration between Māori and the Crown on cloud adoption. The Government Chief Digital Officer is working with stakeholders to support development of onshore cloud capability, accelerate the use of cloud computing by government agencies, enhance trust through supporting stronger Māori / Crown engagement on use of cloud for Crown-held Māori data, and through developing Cloud Security templates.

  https://www.digital.govt.nz/digital-government/programmes-and-projects/cloud-programme

- ***Harnessing digital technologies for health system transformation*** (Ministry of Health): Data and digital technologies can enable a step-change in how health care is provided, the quality of health outcomes, and our ability to move from treating disease towards focusing on prevention and wellness. The Government is planning an uplift in data and digital infrastructure and capability to enable improved health system performance. Investment over the next few years will be aligned to the New Zealand Health Plan (NZHP) and health system reform objectives including digital infrastructure required for the New Dunedin Hospital, improved data intelligence, digital enablement, innovation, Hira (a national health information platform) and population health and disease management.

  https://www.health.govt.nz/our-work/digital-health

- ***5G rollout programme*** (Ministry of Business, Innovation and Employment): 5G is the next generation of cellular mobile technology. It is expected to deliver faster and more reliable cellular mobile services, with opportunities to support innovation and productivity. The Government is working on allocating new long-term rights to radio spectrum to effectively roll out 5G in New Zealand.

  www.rsm.govt.nz/projects-and-auctions/current-projects/preparing-for-5g-in-new-zealand/

- ***Digital Commerce programme*** (New Zealand Trade and Enterprise): Digital commerce – marketing, selling and capturing value online – can help NZ exporters succeed in regions around the world with less of an environmental impact than traditional exports. NZTE provides advice and support to interested exporters to enable global sales in digital marketplaces and can connect businesses to one-on-one support to help access specific markets.

  https://www.nzte.govt.nz/page/digital-commerce

- ***Digital Trade*** (Ministry of Foreign Affairs and Trade): Digital trade is an important component of New Zealand's trade policy as it can facilitate participation in trade and support the growth of Aotearoa New Zealand businesses, and boost innovation and productivity. Key focus areas for the Government include implementing and expanding the Digital Economy Partnership Agreement (DEPA) — NZ Foreign Affairs and Trade, and negotiating digital provisions in trade agreements and at the World Trade Organization (WTO). As part of Cabinet's response to a recommendation from the Trade For All Advisory Board, the Government agreed in principle to review policy settings affecting digital trade and supporting the digital economy. A review was endorsed by the recent Waitangi Tribunal Report into the E-commerce Chapter of the Comprehensive and Progressive Agreement of the Transpacific Partnership (Wai2522 Report). A review would also provide an opportunity to consider how New Zealand's digital trade policy can contribute to the realisation of the DSA's goals.

  https://www.mfat.govt.nz/en/trade/nz-trade-policy/trade-for-all-agenda/

## LOOKING AHEAD

The Digital Strategy for Aotearoa engagement process showed there is no shortage of innovative and creative ideas for how digital technologies can strengthen Aotearoa New Zealand's future, if we keep our focus on Mahi Tika – Trust, Mahi Tahi – Inclusion and Mahi Ake – Growth. The following 4 areas for future work came through strongly – areas where we do not yet have dedicated resources but where we want to do the groundwork for future initiatives.

- ***Data ethics and artificial intelligence (AI)*** – Because AI is informed by data, our ability to advance ethical and innovative development and use of AI depends heavily on building a trustworthy and ethical data ecosystem. Aotearoa New Zealand could be a leading global voice in data governance, promoting trust, addressing risks to privacy, embedding te ao Māori perspectives, and supporting networking and coordination across industry, research bodies and the wider community. As initial steps, we will strive to build data ethics capability within the public sector and will continue to explore the merits of a Centre for Data Ethics and AI. Work in this space would make a particularly strong contribution to the Mahi Tika – Trust pillar of the DSA as well as contribute to Mahi Ake – Growth and Mahi Tahi – Inclusion through enabling new business models and establishing a data ecosystem that works for all.

- ***Cyber security*** – New Zealand's Cyber Security Strategy 2019 describes how cyber-enabled threats to our security continue to grow in scope and scale. Responding to these threats in the context of rapid technological change and increasing sophistication amongst malicious actors means Aotearoa New Zealand must increase its own capability and sophistication. Investment in cyber security response and advice organisations has grown in recent years. However, we need to continue to invest in making the networks we rely on more resilient to cyber threats – from those faced by individual home users through to those on critical infrastructure – and to build capability and awareness throughout the economy and society. This work is critical for advancing the DSA across all its pillars. Security builds a firm foundation for advancing the Mahi Ake – Growth pillar and helping people to know how to be safer online reduces the barriers that the Mahi Tahi – Inclusion pillar is seeking to address. Reducing vulnerabilities to cyber security threats and promoting standards online also supports the Mahi Tika – Trust pillar, allowing New Zealanders and local business to be confident and secure in the digital world. As one contribution to this effort, CERT NZ is creating a Cyber Resilience Measurement Framework that will provide baseline measures, identify areas of weakness in the cyber ecosystem, and help understand the effectiveness of interventions.

- ***Developing a multi-year, cross-agency Digital Inclusion Action plan to close the digital divide*** – Currently around 1 in 5 New Zealanders cannot or do not wish to interact online, with higher risk for Māori, Pacific peoples, older people, migrants and disabled people. COVID-19 has shown the significant effects of digital exclusion, and digital inclusion is now considered essential for participation in modern society. Progress has been made, particularly in the areas of broadening our internet infrastructure network, supporting children to learn from home and targeting digital skills uplift for Individuals/whānau, Pacific peoples and older people. However, these alone are not enough to achieve the DSA's vision of inclusion for all. The Department of Internal Affairs is leading work to close the digital divide, working alongside relevant agencies (including the new Ministry for Disabled People), industry, Iwi Māori and other community groups to develop a multi-year cross-agency Digital Inclusion Action Plan that would especially help advance the Mahi Tahi – Inclusion pillar of the DSA.

- ***Digital twins*** – Around the world, firms, industries, cities and even countries are developing "digital twins" – virtual representations of real-world objects and systems such as hospitals, bridges and electricity grids – to make better decisions through use of data. So-called smart cities are a practical example showing how digital twin approaches can improve urban planning, infrastructure management and delivery of services to the public. To support a future national-level conversation on the potential of digital twins, we will map the current landscape of digital twins in Aotearoa New Zealand and develop an inclusive process for engagement. This could inform reflection on the role of government policies in enabling uptake, where a wide range of possible interventions could be explored, including industry networking, research and skills development, through to government procurement processes. This area of work holds particularly strong potential for advancing the Mahi Ake – Growth pillar of the DSA, through improving efficiency and enabling innovation, and could also contribute to inclusion and trust via better services and development of trustworthy data systems.

Together, the initiatives and steps set out in this Action Plan form an ambitious roadmap for the year ahead. Their implementation should move us closer to achieving the 9 high-level measures of success set out in the DSA, which by 2032 envisages, amongst other aspirations, that "All New Zealanders feel safe and supported online", "High speed internet is available to all New Zealanders" and "All New Zealand businesses are born digital and supported to adopt the digital tools that work for them", amongst other aspirations. Coordinated by Stats NZ, all agencies involved in the development of the Strategy and Action Plan will over the course of the next 12 to 18 months progressively establish and deliver the data to track our progress against the success measures. A first progress report will be prepared for mid-2023.

Te Kāwanatanga o Aotearoa
New Zealand Government