

WHAT WE HEARD – SUMMARY OF PUBLIC ENGAGEMENT

APRIL 2022

Te koke ki tētahi Rautaki Matihiko mō Aotearoa Towards a Digital Strategy for Aotearoa

*Te whakaāhei i te puāwaitanga me te taurikura o te katoa
o Aotearoa i roto i te ao matihiko*

Enabling all of Aotearoa New Zealand to flourish and
prosper in a digital world



Te Kāwanatanga o Aotearoa
New Zealand Government

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Acknowledgements

A big thank you to everyone who participated in the kōrero and submissions process for the discussion document "[Towards a Digital Strategy for Aotearoa](#)" in October and November 2021. It was fantastic to hear from hundreds of New Zealanders across the country who attended virtual hui, provided written submissions by email and post, and added their ideas and comments to the online challenges at: aotearoa.digital.govt.nz

We've received a wide range of ideas through the engagement process. This input and feedback is now being considered by a joint agency team and will be used to help inform the development of a Digital Strategy for Aotearoa.

The cross-agency team includes representation from the Ministry of Business, Innovation and Employment, Department of Internal Affairs, Department of Prime Minister and Cabinet, and Stats NZ. The intention is to publish the Digital Strategy for Aotearoa during 2022. You can sign up for important updates or let us know if you have any further queries by emailing the team at digitalaotearoa@dia.govt.nz

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Background

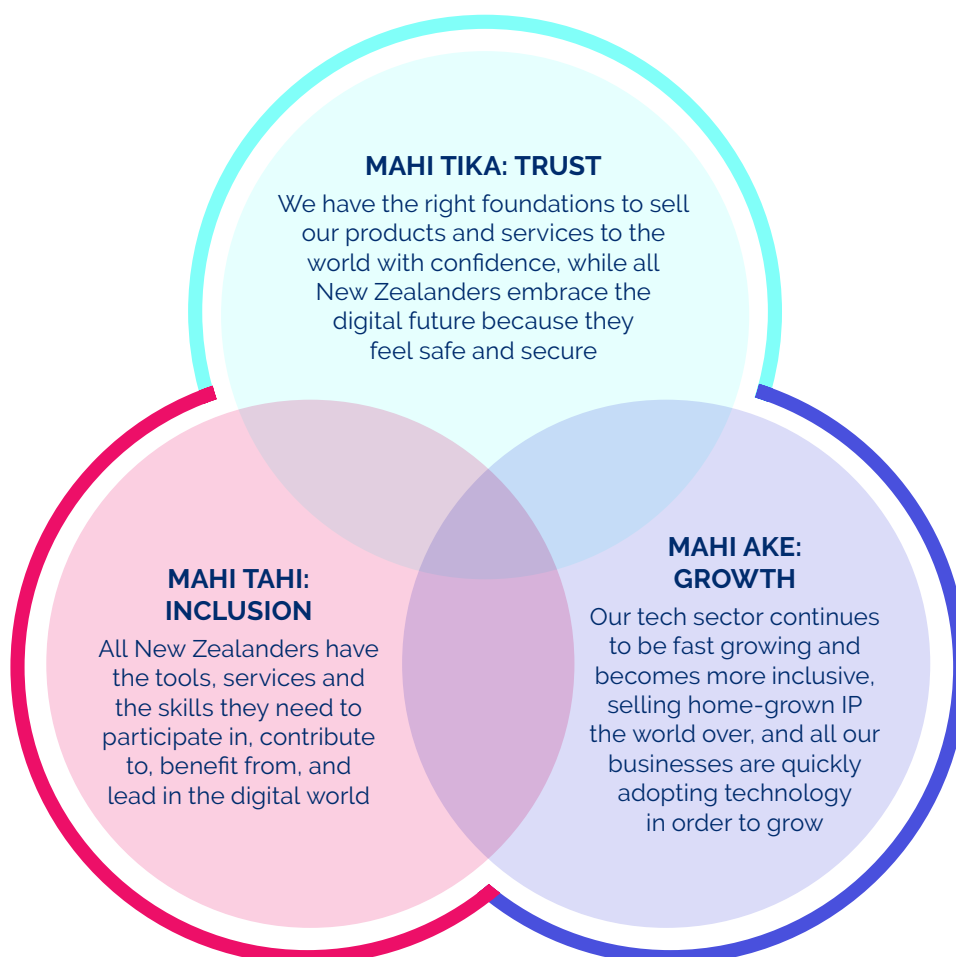
The Minister for the Digital Economy and Communications Hon Dr David Clark released a discussion document in October 2021 which asked New Zealanders to share their views on the ambition, direction and approach towards developing a Digital Strategy for Aotearoa.

The discussion document stated that a Digital Strategy for Aotearoa (the Strategy) would need to respond to the social, economic, education and cultural opportunities from digital technology, along with the risks that these technologies could bring. It would need to set out some key goals and help identify core priorities and activities for the short to medium term (that is, in the next two to five years), along with longer term outcomes (out to 2031 and beyond).

The document, and a series of virtual hui run over several weeks, marked the start of a conversation about how Aotearoa New Zealand could reach its full potential in the digital age. It was built around three key themes that could form the structure for the Digital Strategy: Mahi Tika – Trust, Mahi Tahī – Inclusion, and Mahi Ake – Growth (see Figure 1). It was proposed to focus each theme on achieving a vision of “Enabling all of Aotearoa New Zealand to flourish and prosper in a digital world”

FIGURE 1: Proposed vision and goals

Enabling all of Aotearoa New Zealand to flourish and prosper in a digital world



Overview of engagement

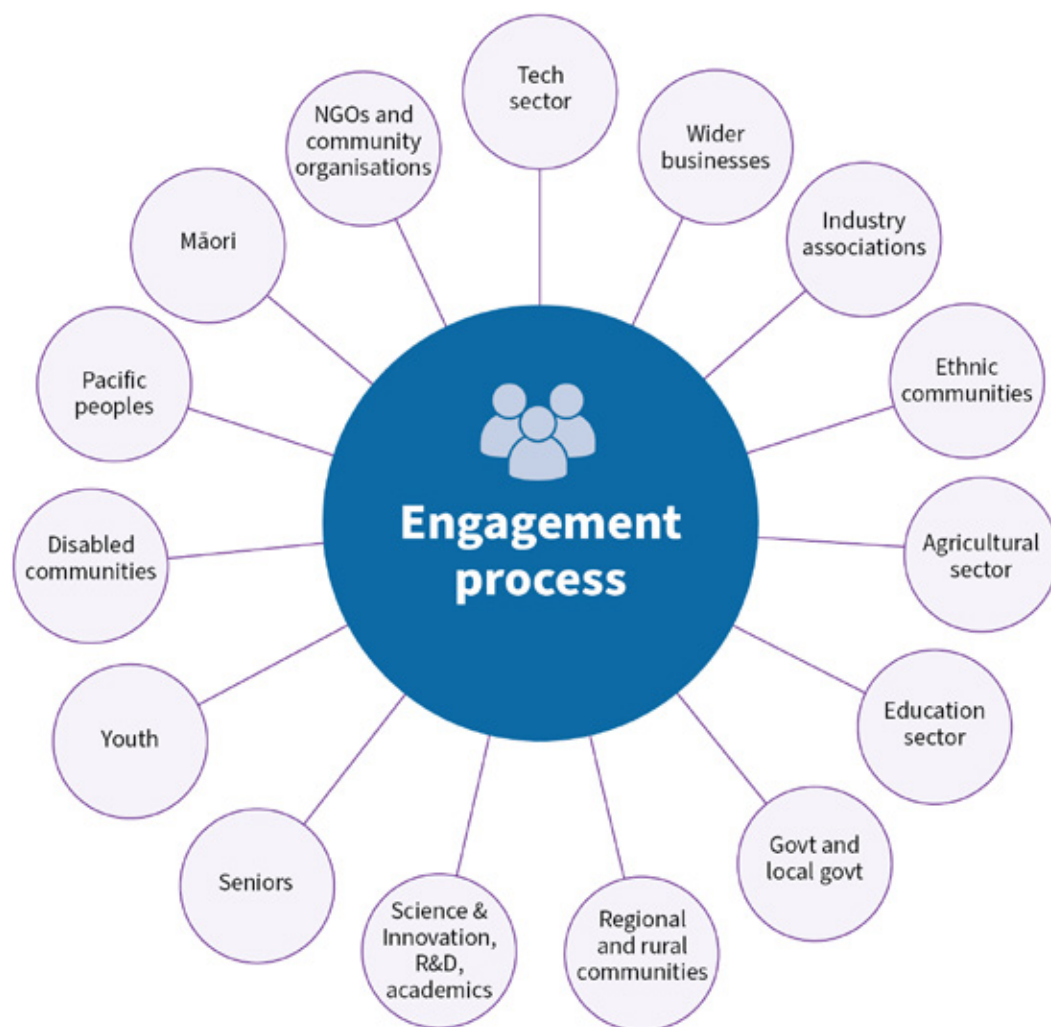
The discussion document was published on 6 October 2021. It was promoted via a range of communications channels including through ministerial presentations at a range of industry events and fora, and via a wide range of government and non-government websites and social media channels and newsletters.

New Zealanders were invited to go online or register to attend a series of virtual hui (via Zoom), where they could participate in workshops and share their ideas of New Zealand's digital future. About 320 stakeholders from a range of industry, iwi and community organisations with an interest in New Zealand's digital future were also emailed directly. They were invited to attend the virtual hui, to participate in the submissions process and encouraged to share the opportunity for engagement widely with their own stakeholder networks. The engagement approach was focused on facilitating inclusive discussion and genuinely listening to participants. The aim was to invite meaningful input to support the development of a Digital Strategy for Aotearoa. Participants included people from a range of communities and demographic groups.

There was also a specific focus on strengthening Māori-Crown relationships and engagement with iwi leaders, Māori innovators and their communities to share information and build a more cohesive understanding of the current state for Māori, the challenges and opportunities, and the vision for the future.

Who we heard from during the engagement process

FIGURE 2: Who we heard from during the engagement process



Virtual hui: More than 320 members of the public attended ten virtual hui which were held between 12 October and 2 December 2021. There were four hui focused on the general topic of New Zealand's digital future with workshop sessions on each of the three key themes of Trust, Inclusion and Growth, two hui focused on Māori, two hui focused on Digital Accessibility, one focused on Youth, and one focused on Pacific peoples.

Written submissions: Overall, 116 written submissions were received, (40 from individuals and 76 from organisations). New Zealanders were also encouraged to go online, read the discussion document and submit their ideas via a Dialogue online collaboration tool. In total 75 ideas were submitted to the Dialogue site with 42 comments added to those ideas.

Website communications: An introductory video from Minister Clark and a copy of the discussion document were published in HTML and PDF formats on the digital.govt.nz website on 6 October. Between 6 October and 22 November, the main page where most people were directed had 6,573 unique page views, while an HTML version of the full discussion document had 1,982 unique page views along with an average time spent on the page of over eight minutes. There were also 683 views of Minister Clark's video during the engagement period and several hundred people also interacted with social media posts which encouraged New Zealanders to "have their say" on New Zealand's digital future.

Wider community engagement: In the lead up to the engagement period, a series of events were held where Minister Clark was able to present a high-level view of the discussion document. The Minister presented to an Infrastructure New Zealand Leaders lunch event in August 2021, at an online Digital Boost Alliance workshop in September and at a Digital Council for Aotearoa e-commerce report launch event in November. These events enabled the Minister to speak about his aspirations for the Strategy and seek input from attendees.

Wider meetings and hui: Several organisations also held their own meetings and events to consider the discussion document and prepare for their submissions. One example was Veracity Lab, which hosted three publicly advertised webinars in early November on the themes of Trust, Inclusion and Growth. Some organisations including NZTech, the Digital Council, Internet NZ, the Digital Equity Coalition Aotearoa, the Digital Boost Alliance, NZ Rise and Access Advisors also used their own communications and social media channels to encourage people across their networks to send in submissions.

The impact of COVID-19 alert level changes on the engagement process

The cross-agency team had originally planned to run a series of regional in-person hui between 8 September and 17 October 2021 but needed to change the engagement approach due to the impact of New Zealand entering a nationwide COVID-19 alert level 4 lockdown on 17 August.

Running virtual hui rather than in-person events had both positive and negative impacts. It meant that people who did not have internet and device access to participate in a Zoom call would not be able to participate in the virtual hui and would be limited to only being able to make postal submissions.

It was hoped that there would be an opportunity to undertake some in-person events during late October and November 2021 but due to continuing COVID-19 alert level impacts this was not possible. The option of delaying the engagement process until after the lockdown had been lifted was also considered but the risk of ongoing alert level changes and lockdowns leading to further delays meant the decision was made to progress as best as possible, within the alert level limitations.

Organisers were aware that hui held via Zoom might make it more difficult for attendees and facilitators to get to know each other and develop deeper engagement and understanding across their areas of expertise. For this reason, the number of attendees at each of the virtual hui was limited to around 60 people. These groups were then guided into three smaller break-out rooms for workgroup sessions to make it possible for everyone to share their input and ideas. One of the benefits of running virtual hui was that people who did have digital access could easily register and log in from almost anywhere in New Zealand, without the need to travel to an in-person event.

What we heard about the vision, themes and success indicators

There was strong support for the need for a Digital Strategy for Aotearoa from nearly all the submitters with many commending the Minister and the cross-agency team for progressing this work.

Several submitters commented that it has been too long since the last Digital Strategy was delivered in 2008. Some also commented on the timeliness of the Strategy as the government, businesses and communities were responding to the COVID-19 pandemic, especially with the current focus, both domestically and internationally, on looking to build back better and lay the foundations for a better future. Many saw "digital", in the broad sense, as being a key enabler for New Zealand's COVID-19 response and recovery. They said the impact of the pandemic had created an environment which was receptive to doing things differently and leveraging digital opportunity and innovation.

A submission from Tech Leaders, for example, represented the views of a number of submitters when it stated that "now is the time to build on the momentum created by our response to the COVID-19 pandemic. In particular, through the enforced work and lifestyle changes, and the ensuing value of our digital infrastructure. This includes the investment in core enabling technology, for example the fibre to the premise network and investment by businesses in implementing cloud-based systems."

Meanwhile, a submission from TechnologyOne said that "The New Zealand Government Digital Strategy could not come at a more opportune or important time. The world is both recovering from an historic moment of disruption due to COVID-19 and a tipping point in the international response to Climate Change. At the same time, there is a transition moment in digital technologies that lends itself to bold policy thinking to align to these two global events and set medium-sized advanced nations on a course for generations of prosperity."

The vision, direction and intent

There was strong support for the concepts proposed by the vision of *"Enabling all of Aotearoa New Zealand to flourish and prosper in a digital world"* with nearly all submitters who commented on the vision, endorsing the intent.

A submission from Chorus commented that "Chorus shares the government's vision in *Towards a Digital Strategy for Aotearoa* to enable all of Aotearoa New Zealand to flourish and prosper in a digital world. The themes of Mahi Tika, Mahi Tahi, Mahi Ake, and their interactions provide a strong foundation for the digital strategy and capture the essential elements of what we agree is needed to help New Zealanders succeed digitally."

"The Digital Technology industry is 100% supportive of this strategy and sees this initial consultation as a great starting point...There has never been a more compelling time to get this right, for the government to deliver a backbone our nation can thrive from. It is time to close the digital divide, to diversify the economy and leverage the untapped potential digital technology brings." — Digital Technology Industry Group's submission

A submission from the New Zealand Public Service Association (PSA) said that "As a set of guiding goals, the draft digital strategy appears to encompass much of what is needed to ensure a good digital future for Aotearoa New Zealand. The PSA is particularly pleased to see the focus on engagement with Māori in developing an equitable digital environment that reflects both Te Ao Māori and Te Tiriti o Waitangi."

A submission from COMET Auckland highlighted, in particular, the importance of digital inclusion when they commented that: "The vision and themes give a good balance between equity, safety and growth, all of which are essential if Aotearoa is to gain the potential social and economic benefits of digital technologies."

"While all three goals are important, to us, the most urgent goal to address is mahi tahi/equity. Our nation cannot reap the potential benefits of digital technologies if a proportion of our population are unable to access the digital world and have missed out on building the skills they need to harness it."

A wide range of submitters and virtual hui attendees offered similar views. They also commented that digital inclusion was fundamentally intertwined with wider social and economic barriers to inclusion. To be a thriving digital nation, New Zealand would need to start by ensuring that its people were thriving.

Statements were also made in submissions from InternetNZ, Creative New Zealand, E tū, Microsoft and others showing general support for the vision and themes from across private, public, not-for-profit organisations and unions (refer to Figure 3).

FIGURE 3: What we heard about the vision, direction and intent



A call to be more ambitious

Several submitters called for more ambition in the framing of the Strategy and for the need to more clearly outline the way forward to turn the aspirations posed in the vision (and supporting themes and goals) into reality.

A submission from Xero commented that some very good thinking had gone into the discussion document and that Xero supported the three pillars. But, while the narrative focused on the right areas, the Strategy must be much more ambitious. "For example, the document notes that growth in the tech sector has outstripped the performance of the general economy and sets a target of technology doubling its contribution to gross domestic product (GDP) by 2030. Xero's view is that technology could increase its contribution to GDP four-fold in that period, particularly if well supported by coherent and integrated policy," the submission said.

"Above all else, the strategy must be genuinely ambitious and transformational in its scope. It is infinitely preferable to set stretch targets that may or may not be met than setting easily achievable targets. Targets must be clearly and quickly measurable and any gaps in publicly collected data should be closed immediately." — Xero's submission

A submission from the Digital Technology Industry Groups (DTIG) - representing IT Professionals New Zealand (ITPNZ), InternetNZ, NZRise, NZTech and TUANZ - said that the Strategy would need to be ambitious - filled with audacious goals - or it would risk leaving Aotearoa New Zealand behind. The discussion document was a starting point, but they would like to see the Strategy evolve to embody the ambition it would need to realise for our nation. "We would like to see commitments to significant and effective change beyond what is in current initiatives or the consultation material." The opportunity to diversify our economy needs to be grasped now as we face the reality New Zealand is rapidly being left behind in the digital world, the submission said.

BusinessNZ's submission commented that while they didn't fundamentally disagree with the content of the Strategy, they believed that the Digital Strategy as outlined, was "somewhat underwhelming." Along with several other recommendations, BusinessNZ's submission recommended that actions supporting the Strategy be scrutinised in terms of cost/benefit for the whole country so that those themes and outcomes considered the most important to improving New Zealand's overall digital competitiveness would be prioritised. New Zealand should look to learn from the success and failures of other countries in developing its own digital strategy, rather than trying to be world leading.

Meanwhile, a submission from Victoria University of Wellington said a primary observation was that the level of ambition and the goals, while very commendable, were not yet matched by a complete plan for how those goals will be achieved. Nor did the proposed success measures convey the same level of ambition that had been infused through the rest of document.

What we heard about the proposed themes

Most submissions supported the three themes of Mahi Tika-Trust, Mahi Tahi-Inclusion and Mahi Ake-Growth. Some submitters suggested variations or adjustments to the framing of the three themes noting that while these themes were appealing, the underlying layers of structure and delivery would be more complex.

Recommendation	What submitters said
Adding a foundation layer	Submissions from NZTech and the AI Forum of NZ recommended that the vision and goals of the Strategy be amended to include critical foundations of Digital Education, Sustainability, Digital Finance, Artificial Intelligence, Data, Innovation and Investment - and that these foundation layers should sit across the three themes.
Additional and alternative theme ideas	Several submitters also suggested additional or alternative theme options including high level themes focused on: government leadership/stewardship, digital skills and education, innovation and Māori-Crown relations. A submission from Catalyst IT offered a different framework, proposing three core principles - open, sovereign and resilient - that would provide the settings to support increasing the value of digital exports, deliver high-value jobs now and for future generations, protect Tikanga Māori and New Zealand culture, promote efficiencies in the public sector and underpin innovation in Aotearoa New Zealand's key industries.
Wording changes to the trust goal	A submission from the Digital Inclusion Alliance Aotearoa said that some of the summary explanations for the themes needed to be revised. For the Trust theme "selling our products and services to the world' might be a desirable outcome but this assumed that New Zealanders would embrace the digital future. To do that, they would need to build trust in the digital world. The focus for this theme should therefore be - 'building trust and confidence in the digital world'."
Wording changes to the inclusion goal	Submitters also offered a range of suggested edits to the goal for Inclusion, including that social and economic participation/inclusion should be an explicit part of the goal, the goal should be written in plain language and should be framed more around improving people's wellbeing and less on economic prosperity. The words "confidence and resilience" should be added to the description and "lead" dropped because it was unrealistic to expect all New Zealanders to "lead in the digital world".

Other important areas needing consideration

There were several areas that submitters commented were missing from (or that they felt were not sufficiently considered) in the discussion document but that they believed should be prioritised in a final Digital Strategy for Aotearoa.

Recommendation	What submitters said
Digital Skills and Education	<p>Several submitters said that the need for improved digital skills capability should be prioritised in the Strategy. Submitters called for immediate immigration changes to support urgent short-term workforce needs. They also highlighted the need to invest in improving the digital skills of New Zealanders to build a strong talent pipeline for New Zealand's future.</p> <p>Many commented that the Strategy should place a stronger emphasis on digital skills including the need for basic digital literacy right through to highly-skilled specialised digital capability roles. It should more clearly highlight the role of formal education (early childhood education [ECE] through to tertiary), to enable a future in which all participants would benefit from digital approaches that optimised lifelong learning. Well planned and delivered digital approaches should optimise teaching and learning. Digital skills, computational thinking and creating using digital tools should be a priority for professional development for teachers, so they could support their students from ECE through to tertiary.</p> <p>The Strategy needed to ensure New Zealand was educating digital and IT specialists, to contribute to economic growth and social wellbeing. Employers should provide support for upskilling/training so that individuals have a continual-learning mindset.</p> <p>Submissions from Education Digital and Data Board, Canterbury University, and the Greater Christchurch Schools' Network highlighted the importance of co-ordination between the relevant government agencies to make digital access and skills and knowledge more available through the education system as well as in supporting employers and community networks.</p>
Health	<p>Health providers commented that there were enormous opportunities to improve in digital health and telehealth services and called for a greater focus on digital health in the Strategy. They highlighted need for increased focus on improving digital access, co-ordination and skills for District Health Boards and primary healthcare providers across New Zealand, an area of work that was currently a high priority due to the impacts of the COVID-19 pandemic.</p>
Remote and rural connectivity	<p>A range of submissions, including submissions from Federated Farmers, Venture Taranaki, Queenstown Lakes District Council, Chorus, MYOB, NZTelehealth, Te Aka Toitū Trust, Spark and Vodafone also commented on the need for the government to continue to invest in improving remote and rural broadband and mobile connectivity – and felt that this issue should be more clearly prioritised in the Strategy.</p>

Recommendation	What submitters said
Impact of technology on flora and fauna and humans	<p>A Safe ICT NZ submission called for the Strategy to recognise the scientific research being carried out on electromagnetic fields/ frequencies' harm to other species, to ensure protection for New Zealand's unique species and to identify the actions required to address these issues. The submission called for:</p> <ul style="list-style-type: none"> - Protection for national parks and sanctuaries containing unique species, from multifarious artificial frequencies, - Exposure to artificial electromagnetic frequencies (EMFs) to be kept as low as reasonably achievable and wired technologies to be given preference over wireless technologies; - Recognition of possible harm from wildlife telemetry given the probability based on the science available and recommended actions to manage these risks including at a minimum having untracked "control" species; - Existing environmental laws to include EMFs as a pollutant; recognise harm from long term chronic exposure to EMFs; prohibit allocation of new frequencies because of the potential devastation to the insect population and impact on wildlife; - Education of the public regarding the environmental/ecosystem impacts of wireless technologies. <p>A second Safe ICT NZ Inc. submission highlighted concerns regarding the impact of current and emerging technologies on humans and warned against any increase in the implementation of and exposures to such, particularly to wireless technologies. The concerns included impact on children's development, mental health and technology-related addictions, electro-sensitivity, discrimination by AI and/or requirements for digital identity, data harvesting, job losses, national security, unauthorised surveillance/privacy concerns, the yet-unknown effects of and lack of safety data on 5G, impact to our energy supplies, and the unbridled ability for telecommunication companies to install new infrastructure as they pleased."</p>

What we heard about governance, planning and accountability

Several submissions called upon the government to develop a detailed implementation plan, with a set of milestones and measurable deliverables, to enable the achievement of the vision, themes and goals.

Submitters considered that the Strategy should set clear and ambitious expectations on agencies (including targets) and that a shared work programme should be developed to support government to collectively work towards the vision in the Strategy.

"Three things can get in the way of a strategy being a useful tool: 1. Taking too long to develop it: we urge you to finalise the strategy quickly and move resources to "the doing". 2. Not resourcing implementation: resources for implementation need to be included in the next budget. Taking too long with the strategy could jeopardise this. 3. A lack of accountability: please ensure specific ministers and agencies have responsibility for implementation. Otherwise things fall between the cracks and will be overlooked. — Catalyst IT's submission

They also highlighted the importance of establishing ongoing systems and processes to monitor progress and hold agencies to account for delivering on the expectations set out in the Strategy. A submission from the Digital Technology Industry Groups said that a roadmap and work plan should be developed in parallel with the Strategy itself to:

- ensure that the Strategy implementation could be funded and would be able to commence immediately once approved, and
- provide clarity for industry, community and citizens on how they could engage with and support the Strategy execution.

The submission also recommended that:

- The development and execution of the Strategy should be overseen by an external governance group with representation from industry and community to support implementation and hold government and others involved in delivery to account, and,
- Cross-ministerial commitments should be officially agreed and resourced, to ensure that all agencies involved in the execution of the Strategy were adequately empowered and resourced for their role in delivery.

Similar comments were also made in submissions made by the NZ Game Developers Association, Amazon Web Services, the AI Forum of NZ, Catalyst IT and Tech Leaders (refer Figure 3).

Taking a partnership approach

Overall, there was a consensus that initiatives should not be designed and implemented by government agencies in isolation but rather via a partnership or codesign approach with relevant communities of interest. A wide range of submitters commented on their strong commitment to be involved with the Strategy's implementation and to work alongside government in its delivery.

A submission from the Citizens Advice Bureau (CAB) said that better engagement was needed for the development of the Strategy. It said that the virtual hui had been valuable but were an insufficient mechanism for consultation due to the limited sessions, capped number of participants, and because they meant participation had to occur online. The timeframe for responding had also been very short. Further engagement should still take place including targeted face-to-face/kanohi ki te kanohi consultation with communities that were over-represented in digital exclusion statistics when COVID-19 restrictions would allow for this.

All public services should be designed and delivered with people's needs at the centre, which meant ensuring there continue to be non-digital options available, and all government policies and services should be publicly measured using the wellbeing framework, the CAB submission said.

More generally, submissions suggested that the following key principles should underpin how the Strategy would be delivered:

- **Partnership** – ensuring an inclusive approach to designing the Strategy, related initiatives, and government policy and services more generally. This included building on existing community initiatives. Ensuring that “digitally excluded” New Zealanders were actively involved was critical – not only their representative organisations.
- **Accountability** – setting clear and ambitious targets/expectations for agencies and holding them to account for delivery.
- **Leading by example** – ensuring that government agencies demonstrated the behaviours it expected of wider society (e.g. by ensuring accessible service design).

Te Tiriti o Waitangi and Māori / Crown Relations

A wide range of submissions also expressed strong support for having Te Tiriti o Waitangi and its articles acknowledged as a core foundation for the Strategy.

Many respondents highlighted the need for the government to realise its role as a Treaty partner and actively build equity, confidence and opportunities for iwi, hapū and whānau to use and benefit from digital technologies.

They commented on the current levels of inequity in the digital tech sector and the need to grow opportunities for Māori to thrive in digital technology. They also commented on the need to work in partnership with Māori digital technology innovators and to support leadership in Māori innovation.

What we heard about measurement and the success indicators

A range of submitters commented on the section in the discussion document entitled "How we will track our progress".

Several submissions commented on the need for the Strategy's framing and measurement to be focused, not just on economic indicators, but more generally on wellbeing outcomes and for the measurement approach to be more closely aligned to The Treasury's Living Standards Framework.

Others commented that some of the existing measures were vague and did not clearly align to the achievement of the vision or goals. Where good information was not currently available to inform a measure, this might be an opportunity to resource research which would have broader benefits.

The need to measure the existing "digital divide" and develop indicators to measure progress toward digital inclusion both nationally, and for key "disadvantaged communities", was widely referenced.

Some measurement suggestions

NZTech's submission, along with others, commented that the Strategy would provide an opportunity to consider new future aspirational goals that may need different models of measurement than the traditional metrics proposed.

"One of our key themes in our feedback is the need for clarity on the success measures. This requires expanding on the general benefits and outcomes outlined throughout the Discussion Document to create a set of specific, base-lined, measurable outcomes. This will help focus the attention for all the groups involved in achieving the vision. — BNZ's submission

A submission from WeCreate noted that traditional measures for the digital technology and creative industries had not been sufficiently updated to reflect recent innovation and changes in these sectors and there was a need for immediate action to improve some specific sector measurements.

Meanwhile, a submission from Honey Consulting noted that "digital trade" was potentially a far broader category than simply Information and Communications Technology (ICT) or software exports, as was implied by the charts in the discussion document. The Organisation for Economic Co-operation and Development (OECD) definition of digital trade was any "digitally-enabled transaction in which a product, good or service can be either digitally or physically delivered". This wider definition should be acknowledged.

A submission from Amazon Web Services (AWS) similarly commented that growth measures should embrace the digital economy as a whole, beyond a narrowly defined technology sector. Existing research could be examined to identify methods for determining the digital contribution of specific technologies to the economy and productivity as well as the barriers to increasing impact, and whether these were being reduced. The AWS submission also recommended that digital government services should be measured by the quality and responsiveness of the services, not just in terms of the number of services that were being provided online. Submitters said that some of the key new indicators that could be considered included the measurement of:

- the number and reach of government digital services specifically targeting minority groups, or specific communities such as people with disabilities, non-English speakers, etc. This could include the number of users accessing digital services in specific sectors such as education and health.

- the number of women-owned and minority-owned businesses with digital presence,
- investment in the New Zealand's start-up environment,
- digital technology intellectual property registrations,
- participation rates in STEM and digital technology qualifications,
- New Zealanders' access to and use of digital tools and services (e.g. for education, work, entertainment, social connection, information),
- the NZ digital economy (not limited to ICT) as well as digital trade and exports,
- the volume of unfilled positions in IT sector, level of labour turnover or average level of salary increases, all of which could indicate insufficient skilled workforce which might hinder growth,
- the adoption and use of opensource software.

Improved measurement of digital inclusion

SeniorNet Wellington's submission commented that there was no broad measure to improve inclusion for people who lacked "the necessary skills, access, motivation or trust to participate in an increasingly digital society". This was an issue for people experiencing digital exclusion who did not contribute directly to economic growth.

Submissions from InternetNZ, Digital Inclusion Alliance Aotearoa (DIAA), ASB and COMET Auckland, among others, also commented that investment in digital inclusion measures needed further development and should be a priority.

"For Mahi Tahi (inclusion) – the proposed tracking measures all appear to cover availability (e.g. broadband or fibre connectivity) as opposed to actual use. These do not seem to capture where, for example, people in vulnerable circumstances are still unable to access due to affordability (of devices or services or both) or due to their abilities (e.g. different forms of disabilities that make digital inaccessible). A measure which can identify increasing access would be helpful; as would a measure of the size of the population for whom digital methods are not an option. — ASB's submission

Internet NZ's submission said that the measure for Mahi Tahi - Inclusion should be expressed in terms of achieving digital equity in Aotearoa. The goal was to "connect people, not houses", and "it needed to be measured by the level of people's actual participation, including for the most excluded". The current proposed measures focused on access to connections but would need to be broadened to cover social barriers to digital equity, such as access to training programmes, community support, and the ultimate output of how many people are enabled to fully participate online.

Beyond the measures proposed, the measures for Mahi Tahi and Mahi Tika would also need to include some assessment of deprivation and exclusion. Qualitative measures were an important part of this picture, as they could offer information on why people did not participate fully.

Internet NZ and DIAA submissions noted that they saw the role of government as providing leadership and funding, to enable the work to be undertaken through networks that had existing relationships and trust in local communities. The Essential Digital Skills framework being developed by the Department of Internal Affairs was useful and provided the right platform to create useful measures. COMET Auckland's submission said that, at the very least, some of the measures proposed should be disaggregated by gender, ethnicity and socio-economic background to track any changes in equity. Once baselines were established for these measures, targets should then be set to increase equity in each measure over time.

FIGURE 4: Key focus areas identified during virtual workshops on Trust, Growth and Inclusion



What we heard about the Mahi Tika – Trust theme

Mahi Tika — Trust - was one of the three themes that was proposed for the Strategy to achieve its vision. In the discussion document the theme was supported by the line, *"building the right foundations so that Aotearoa New Zealand can lead in the world"*. The theme was also supported by the goal that *"We have the right foundations to sell our products and services to the world with confidence, while all New Zealanders embrace the digital future because they feel safe and secure."*

Several submitters felt that the goal for trust should be focused primarily on helping New Zealanders to feel safe online with less focus on linking trust with New Zealand's ability to sell products and services. They asked for the goal wording to be updated to reflect this.

Many said that they were concerned about the current state of trust in New Zealand's digital ecosystem right now. They also commented that the importance of trust would only grow as the global technology landscape evolved at a rapid pace. They raised concerns about:

- personal security and the increasing risks of online harm and cyberbullying,
- phishing, scamming, deep fakes, and misinformation from online sources being presented as fact. Some referenced the current COVID-19 anti-vax campaign, as an example,
- cyber security, with some referencing the recent cyber security breach at Waikato DHB, as an example,
- privacy issues – for example, related to the use of New Zealanders' personal data by large multi-national players such as Facebook and Cambridge Analytica, and in the increased use of personal data in AI, facial recognition software and other emerging technologies. Many felt that people's individual rights were not being adequately protected in a range of current digital environments and applications right now, and,
- the need for Māori data sovereignty and more widely New Zealand data sovereignty.

Some business and technology leaders commented on the need for cyber security to be a more explicit part of the Strategy. One said that, as a country, New Zealand should aspire to the same level of digital security expectation as we do physical security.

Submitters also raised concerns that security was only a minor component of the discussion document and that national cyber security needed to be prioritised. They pointed to the need for public/private partnerships to achieve this, and the need for a national cyber security framework. They commented on the need to collaborate on rules, standards and governance models needed to foster trust and confidence in emerging technology; and on cyber security and resilience. One submitter said that the government should mandate security requirements for critical infrastructure, noting the government should lead by example when it came to cyber resilience.

Many also expressed concerns that everyday New Zealanders did not have the digital skills needed to understand the opportunities digital technologies could enable. Fear and a lack of trust, along with concerns about cost and risk, were key factors in fuelling a lack of motivation. These factors were stopping people and businesses from using digital technology and leveraging innovation opportunities in key areas such as AI.

Trust in digital systems was inextricably linked to the trust people had in the institutions they were interacting with. This was not "just about the plumbing" but would also involve consumer education. BNZ's submission said there was a need to bring people "on the journey" when building trust on multiple levels:

- **Organisational Trust** – every interaction with an organisation, whether directly related to the topic at hand or not, would affect the trust people have in an organisation.
- **Technical Trust** – the implementation of digital products and services would need to be trustworthy, and this could be done by leveraging existing expertise of specialists (e.g. third-party builds).
- **Governance Trust** – what guardrails were in place to help the sector grow safely, and how they would stay relevant in an exponentially changing world.

Consumers would need to be empowered to become more familiar with consent processes and their digital data rights, have greater control of their digital data; trust those managing their digital data, and; receive value from sharing their digital data (from subscribing to innovative products and services).

Immediate and longer-term priorities

Many saw the role of government as being a steward, regulator and role model for ensuring a responsible and ethical approach to digital innovation and data-driven technology. There was a need for governance and oversight to ensure trustworthy systems as well as a need to ensure commitments to Te Tiriti o Waitangi underpinned digital public infrastructure.

They also commented on the governments' role in uplifting capability by investing in improving New Zealander's digital skills and their ability to interact safely and securely online. This was important for existing digital technology users but also for those digitally excluded New Zealanders who may not yet have the access, motivation and skill required to participate in a digital society.

A submission from Microsoft said that New Zealand was already a leader in collaboratively addressing online harms and had stringent privacy laws, which were among the most comprehensive in the Asia-Pacific region. However, there was still room for collective government action to drive regulatory clarity across government agencies, ensuring agencies could avoid any unintended consequences when regulating different parts of the digital economy. The government could also consider how to strengthen regulatory coherence with the US and the EU, to enable the free flow of digital services and help its digital exporters succeed overseas in those markets.

A submission from Physicians and Scientists for Global Responsibility Charitable Trust called on the government to ensure that New Zealand law had a platform for trustworthy digital developments; human rights were protected; the data sovereignty of inhabitants of Aotearoa New Zealand was prioritised; that New Zealanders were protected against opportunistic activities by powerful institutional actors; and that New Zealand appropriately regulated and taxed foreign entities.

A submission from Veracity Lab said that the government should expand the NZ Government Digital Service Standard to include veracity principles, practices, and requirements for all government services, with independent assurance and public reporting of compliance. Meanwhile, other submitters called on the government to commit to prioritising the use of Open Source software, taking a more secure New Zealand first procurement approach, and ensuring increased control of international access to New Zealand owned data. Key areas that submitters considered there was a need to focus on are listed in the table below:



Key focus areas identified during virtual workshops on Trust.

Key focus areas for Trust	What we heard from submitters
Governance and oversight	The government's role was to lead a responsible and ethical approach to digital innovation and data-driven technology, including governance and oversight to ensure trustworthy systems and commitments under the Tiriti o Waitangi.
Cyber resilience	Building cyber resilience, including the need to set ambitious cyber goals and a consistent set of cyber principles to guide the public and private sector.
Digital Identity Trust Framework	Establishing a Digital Identity Trust Framework and other supports for safe data interoperability and sharing.
Safeguarding against online harms	Actively taking steps to safeguard New Zealanders against online harms including against misinformation and disinformation.
Data sovereignty, data autonomy, & portability (including establishing a consumer data right and Māori data sovereignty)	<p>Reflecting the views on several submitters the Digital Technology Industry Groups submission said that sovereignty must be a key principle of the Strategy to:</p> <ul style="list-style-type: none"> • Ensure New Zealanders could retain control of their own data and destinies, • Recognise that sovereignty creates a platform for trust, • Provide protection for Māori people, their language, culture, resources and environment in the approach used for the sharing of data information, including establishing a consumer data right and Māori data sovereignty.

What we heard about the Mahi Tahī – Inclusion theme

Mahi Tahī — Inclusion was one of the three themes that was proposed for the Digital Strategy for Aotearoa to achieve its vision. In the discussion document the theme was supported by the line, *"making sure all New Zealanders can ride the digital wave"*. The theme was also supported by the goal that *"All New Zealanders have the tools, services and skills they need to participate in, contribute to, benefit from and lead in the digital world."*

There was strong support from across stakeholder groups for improving digital inclusion, particularly for Māori, Pacific peoples, disabled communities as well as for people on lower incomes, for people from remote and rural areas, and for other groups impacted by the "digital divide".

Submitters and participants in the virtual hui commented the impacts of digital exclusion were profound and more acutely felt by some communities than others. Digital inclusion was fundamentally intertwined with wider social and economic barriers to inclusion. To be a thriving digital nation, we would need to start by ensuring that our people were thriving.

The Citizen's Advice Bureau submitted that access to public services was a human right and the government had a legal obligation in its provision of public services to ensure that it did not exclude people from the services, rights and entitlements that they were trying to access. This was about ensuring there would be an integrated, omni-channel approach so that people could access and transact with public services in a range of ways (e.g., online, face-to-face, through others, or by phone) so they could get what they needed and were entitled to, with dignity. Offline options should not be seen as time-bound, or as a deficiency, but as a critical part of a well-functioning and inclusive public service. This was about putting people's needs at the centre and prioritising social inclusion. As government agencies increasingly moved more services online, they had an obligation to ensure that the people they served could continue to easily access those services in a range of ways.

One submitter commented that the United Nations (UN) was among many of the global organisations now citing that "access to the internet is a basic human right" while another suggested that the Universal Basic Internet (UBI) - throttled to a very low speed - should be made available to every New Zealander making it possible for them to access important government services online such as information about their personal health, education and social welfare. The submitter suggested that this could be funded through an expanded telco levy, like the one currently used for the Deaf Relay Service, for some rural broadband access and for the 111 service. Others called, more simply, for high quality broadband to be made available to all New Zealanders.

Several submitters commented that, to remove the existing digital divide the government would need to invest in internet connectivity, devices and digital skills capability for digitally excluded New Zealanders, while simultaneously ensuring that non-digital access options continued to be available.

Internet NZ said it saw the role of government as providing leadership and funding, to enable the work to be undertaken through networks that had existing relationships and trust in local communities. The government would need to focus on affordable connectivity, getting appropriate devices to people, digital skills and wraparound support so that people could make the most of the connectivity and devices.

This would need to be provided as a holistic package of support and provided in a way that met the needs of those groups who faced the greatest digital inclusion barriers. This would involve consideration as to how to use existing trusted networks, and how to support options that provided choice and dignity. Alongside government, the wider digital community including iwi, community organisations and businesses would have a critical role to play in improving digital inclusion.

Key focus areas identified during virtual workshops on Inclusion.

Submitters noted the need for greater and more sustained long-term investment to improve digital inclusion and proposed a range of initiatives and actions which they considered should be prioritised including:

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Focus areas	What we heard from submitters
Building the capacity of intermediaries to support digital inclusion	There were a range of successful community-led initiatives to improve digital inclusion already underway across the country. The government should support and build on this existing work. Tailored solutions and approaches would be needed to address different challenges for different communities, and that community-based organisations were often best placed to understand and meet these diverse needs. Government should take a role in building the sustained capacity and capability of these organisations and either directly support people to become digitally included, or to steer them towards others who provide this support.
Ensuring that government services were accessible to everyone	Submitters considered that all government services should be fully inclusive and accessible to everyone. This would mean that when services were delivered through digital channels, they should be designed to be accessible to people with different/unique needs (e.g. people who were blind/vision-impaired, or deaf/hearing-impaired), and that non-digital channels (such as phone and face-to-face) should always be available for those that needed them. Several submitters felt that government should provide adequate funding to those organisations, such as the CAB, who were supporting digitally excluded people to access services and entitlements which had moved online.
Developing better measures for digital inclusion	Submitters highlighted the need to develop and include better measures and targets for digital inclusion in the Strategy. Some noted that most of the current 'measures of success' were economic (GDP, jobs, skills, etc.), which suggested the Strategy was overly focused on growth rather than inclusion and trust. Inclusion measures should be wider than just 'access to connectivity' and aim to capture how people used the internet in their daily lives. Each of the four aspects of inclusion (motivation, access, skills and trust) could have its own set of measures, and a measure for 'access' could include the percentage of government websites/services that meet accessible design requirements.

What we heard about the Mahi Ake – Growth theme

Mahi Ake — Growth was one of the three themes that was proposed for the Strategy to achieve its vision. In the discussion document the theme was supported by the line, *“leveraging what makes New Zealand unique.”* The theme was also supported by the goal that *“Our tech sector continues to be fast growing and becomes more inclusive, selling home-grown IP the world over, and all our businesses are quickly adopting technology to grow.”*

Overall, submitters welcomed the focus on growth, but many commented that the Strategy would need to be more ambitious for New Zealand to reap the benefits from fast-paced digital innovation and change.

Submitters welcomed further investment in the Digital Industry Transformation Plan (ITP) and Digital Boost, which were aimed at encouraging stronger collaboration between government and industry. But many felt that those initiatives were only part of a wider set of actions needed to support businesses to innovate and increase productivity using digital technologies and data; and to enable a thriving, fast growing and inclusive tech sector.

The opportunity was economy-wide. The government would need to support all sectors to adopt digital and be more active in doing so. There would be broad opportunities to leverage New Zealand's trusted brand through digital trade, to better cement New Zealand's place in the world and build on our global reputation as a reliable and principled international collaborator with low corruption and trusted political institutions.

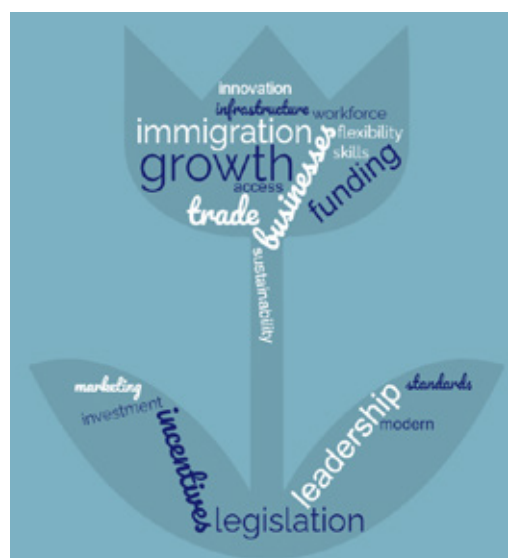
New Zealand could learn from other countries. There was some downside in being “world leading” rather than being “fast-followers” but it could still pick some areas where it could excel in global niches, for example, in bespoke areas such as using technology for biodiversity or ocean management.

There was an appetite for government to partner with businesses to grow the value of the industry, with a core focus on increased export revenue and creating higher value jobs for all New Zealanders.

The industry would need to “sell the story” better as many New Zealanders were unaware of the wider ranging social and economic opportunities available from a more proactive adoption of digital tool and services.

Growth should be measured beyond GDP impact. Overall, the wellbeing of New Zealanders should be the end goal.

Some submitters also challenged the assumption made in the discussion document that widespread digital adoption would result in low emissions. Analysis of the energy use of digital technologies and wider supply chain waste was considered desirable to ensure transparency of the impacts from digital on emissions.



Key focus areas identified during virtual workshops on Growth.

Beyond support for existing work programmes, there was widespread commentary on the need to innovate, invest in digital skills, assets and infrastructure, be flexible and take an adaptive approach to rapid technology change, develop a digital trade plan and educate New Zealanders about the benefits of digital technology.

Immediate and longer-term priorities

Submitters considered there was a need to focus on:

Focus areas	What we heard from submitters
Embracing and investing in digital innovation	<p>Several submitters encouraged the government to more actively embrace and invest in the application of technologies such as AI, cloud-first technology and e-commerce. Government needed to invest in initiatives that would support subsectors that had grown rapidly in recent years such as early-stage gaming and Software as a Service (SaaS) companies which were highly scalable and projected to experience sustained global growth.</p> <p>A submission from Xero said they would like to see the government outline a programme of action to encourage a wide range of tech companies, potentially including major global names but also emerging leaders in specific subsectors such as cloud computing and AI to locate themselves in New Zealand. This would rapidly bring real diversity of skills, experience and talent to New Zealand, and turbocharge the development of a true domestic technology ecosystem.</p>
Investing in digital skills capability uplift	<p>Submitters encouraged the government to address short-term digital skills workforce requirements with changes to immigration settings, while simultaneously investing in digital skills and capability uplift for New Zealanders to create an onshore digital tech talent pipeline.</p> <p>Digital transformation would bring unparalleled opportunities for Aotearoa New Zealand, but a strong skill base would be required to seize those opportunities. As a nation, New Zealand would need both highly trained people creating world-leading AI-powered solutions, as well as people who can effectively use modern workplace technologies in large and small organisations throughout the country and across all sectors, every day. Digital skills were foundational in a digital age, but the status quo wasn't getting the country where it needed to be.</p> <p>Many New Zealanders felt left behind as highlighted in a CAB submission. Meanwhile, young learners were opting out of ongoing education in digital technologies (refer Digital Skills for our Digital Future Report 2021); and the digital tech sector faced ongoing skills shortages and low levels of Māori, Pacific and female representation.</p> <p>The Digital ITP would start to address the skills and capability shortages New Zealand was facing. DIA's Digital Literacy Framework being developed was also relevant. However, more targeted work was needed to address the long-term issues, with active involvement of the education system. The government should set clear targets for digital skills development and track progress being made. Xero's submission, for example, called for a massive increase in government support for rapid small business digitisation, including the use of a tax rebate system to improve the economics of digital investments for individual businesses.</p>

Focus areas	What we heard from submitters
Addressing immigration settings	<p>A submission from the Tech Leaders Executive reflected views expressed in several submissions (Xero, ASB, NZTech, and more) when it said that New Zealand needed to ensure that it had access to the best talent. This could be achieved through expediting entry for skilled migrants, especially those with in-demand technology skills that were needed immediately. However, immigration should also be targeted at those that could contribute to building the skills of New Zealanders – such as experienced teachers and tertiary researchers.</p> <p>A submission from NZTech commented that there were global shortages of digital talent and the domestic pipeline was expected to struggle to even get close to meeting domestic demand in the immediate and longer term.</p>
Supporting the digital tech sector	<p>Several submissions commented that the government could undertake more in digital tech R&D, introduce tax incentives to support digital innovation, and prioritise New Zealand-owned businesses in government procurement decision making.</p> <p>The New Zealand Game Developers Association and WeCreate said the government should create a Development Innovation Fund (or a series of targeted funds) to support interactive industry development and “design-led innovation”. It should also respond to the Australian Digital Economy Strategy - Digital Games Tax Offset. Australian studios were already targeting New Zealand digital business and a digital brain drain was expected if New Zealand's market wasn't given a level playing field.</p> <p>Virtual and augmented reality were good examples of where New Zealand innovators have developed world-firsts but were ineligible for R&D funding as they did not create the technology platform itself, only the valuable end-user applications on top. Digital Boost focused primarily on adding digital capability for physical businesses. There was a missed opportunity to provide a similar programme for digital-first businesses such as creative content producers who saw enormous potential in business-to-consumer markets. The creative sector was an obvious place to start by reinstating the Creative ITP, proposed in 2019 and put on hold due to COVID-19 in 2020, as a complementary strategy alongside the Digital Technologies ITP led by MBIE and NZTech, WeCreate's submission said.</p> <p>A Software Innovation NZ submission commented that New Zealand's performance in software products and services was world-class (e.g. Xero, Weta Digital, Datacom Group Limited, Vista Group) but the potential for growth in software products and services was significantly greater than the discussion document suggested. It called for a clear theme of growing not just digital skills, but the entire software development industry.</p>

Focus areas	What we heard from submitters
Invest in assets, infrastructure and connectivity	<p>Several submissions called on the government to continue to invest in improving connectivity for New Zealand's remote and rural communities and to create a clearer prioritisation plan for government. A submission from Federated Farmers said that while there had been improvements in rural connectivity under the Rural Broadband Initiative (RBI) and other initiatives (such as project-specific Provincial Growth Fund funding), there remained a "concerning prevalence of poor connectivity experienced by rural New Zealanders", as shown in the most recent Rural Connectivity Survey reports. Submissions from Queenstown Lakes District Council, Venture Taranaki, BusinessNZ and Infrastructure NZ were among other submissions that also highlighted the issues related to rural broadband access and black spots for regional businesses and communities.</p> <p>Meanwhile, Chorus, Vodafone and Spark emphasised the importance of further government investment in fibre and 5G mobile rollout for rural and remote communities along with the need to ensure the most supportive regulatory settings. Vodafone's submission commented that mobile network operators' ability to obtain sufficient spectrum in the right bands would also be key for a successful rollout of 5G right across New Zealand.</p>
Developing a Digital Trade Strategy	<p>Some submitters called for the development of a new Digital Trade Strategy along with a focus on continued government support for New Zealand businesses, including key sectors such as FinTech, e-commerce and gaming/creative industries, to more easily sell their products and services offshore. Submissions from TradeWindow and Honey Consulting noted that the ongoing innovation in international trade agreements such as Digital Economy Partnership Agreement (DEPA) would also be desirable and offered a detailed analysis of key areas of focus.</p>
Investing in equity and inclusion in the digital tech sector	<p>Submitters highlighted that Māori, Pacific peoples and People with Disabilities needed to see themselves in the digital tech sector, to inspire others to participate. BusinessNZ commented that wider ethnic groups such as New Zealand's Asian communities, with wide-ranging international networks, should also be valued.</p>
Celebrating success	<p>Submitters highlighted the need to build awareness of New Zealand's strengths, the potential for digital solutions to be a foundation for the future of New Zealand. Could we create a Country Calendar for digital tech, for example?</p> <p>With a sector moving so fast, there would be a constant education challenge in terms of taking consumers and the public on a digital journey. The Strategy must be underpinned by a constant commitment to education, informing and upskilling New Zealanders to ensure the benefits of digitisation were fully and equitably realised.</p>

What we heard about opportunities for Māori, Pacific peoples and People with Disabilities

Key communities who we heard from during the engagement process across the Strategy themes included Māori, Pacific peoples and disabled communities. Two virtual hui focused on Māori, two focused on Digital Accessibility and one focused on Pacific peoples.

Opportunities for Māori

The cross-agency Strategy team connected with close to 100 people interested in Māori perspectives on the digital economy through the two focused hui. The events highlighted that there is a network of Māori who are currently leveraging the opportunities presented by digital technology - including as founders of start-up businesses, employees of tech companies, or owners of small and medium enterprises. It was agreed that more focus is needed to encourage rangatahi Māori to pursue education in digital skills and move into careers within the growing digital technology sector. This needs to be accompanied by actions within the sector to better welcome Māori and other underrepresented groups.

"If we don't address this now, the digital divide will get bigger. If I was the Government and I was going to prioritise anything in this stage of the plan, I would say 'Iwi, hapū, community-led digital solutions'. We should aim to be the country with 100% digital accessibility." — Lewis, Māori Virtual Hui workshop

Engagement with Māori, iwi, hapū and individual Māori entrepreneurs was critical to understanding how the Strategy could be designed in a way that gave effect to Te Tiriti o Waitangi and supported Māori aspirations. Alongside economic benefits, digital technology was also seen as an enabler of cultural connection, identity and wellbeing for Māori. The way in which Māori might come to understand whakapapa, tikanga and te reo Māori in the future may look different through innovations in digital technology. At the same time, it was equally important that any potential ethical and rangatiratanga issues for Māori that may arise from the expanding use of data and technology were addressed.

A key theme was that the Digital Strategy and the work that follows it must prioritise equity and inclusiveness. Digital technologies have the potential to exponentially shift the dial on social and economic wellbeing for all. However, when equity and Te Ao Māori were not visible, these same digital technologies had the power to "recolonise Māori" and make the equity gap bigger. Four key actions were proposed for the ongoing development of the Strategy.

Focus areas	What the facilitators report said:
Strengthen the Māori Crown relationship	<p>Māori commented that the Crown must recognise its role as a partner of te Tiriti o Waitangi and how this role was honoured and be given practical effect to when developing and implementing the Strategy. This would be honoured by working in genuine and authentic partnership with Māori. Focusing on supporting a strong Māori-Crown relationship would help to build a trusted partnership.</p> <p>For the Government to realise its commitment to Te Tiriti o Waitangi, it could explicitly outline in the Strategy how it would prioritise working in partnership with Māori, how the Strategy might be co-governed, and how actions might be co-designed and co-delivered. There could also be an addition of a fourth theme or pou area in the Strategy.</p>
Focus on and prioritise equitable outcomes	<p>The digital divide was complex and influenced by many different factors. The solution to these issues was not a 'one-size-fits-all' approach. To address this the Strategy must have equity at heart, with whānau who were experiencing the consequences of the digital divide kept front of mind. Tailored approaches and targeted actions would ensure whānau were supported and enabled to access, trust and use digital products and services. This meant prioritising ways to level the playing field for digital access and literacy, and developing solutions tailored to the aspirations of Māori communities.</p> <p>The Strategy needed to prioritise equity for Māori and other population groups currently experiencing the greatest levels of inequity. This could be achieved by ensuring that the vision statement that guided the Strategy specifically made a commitment towards equity so that it was enduring. This commitment should then be followed up with a specific set of actions that outlined how equity would be achieved. For example, prioritising affordable internet for those on low incomes.</p>
Be bold, courageous and commit to action	<p>Solutions for realising digital aspirations for Māori needed to be co-developed with Māori. Co-design was most effective when it also included co-decide, co-governance and co-delivery. This process was emphasised through Te Arawhiti's Crown Engagement with Māori Framework. This would require further engagement with Māori technology experts and iwi/community organisations, hui with hard to reach communities, and tailored initiatives to cater to the needs of different communities. To realise the aspirations of Māori in the digital and technology space, the Government would need to resource continued and ongoing relationship development with Māori.</p>
Rangatahi are the digital leaders of tomorrow	<p>Participants expressed their desire to see rangatahi Māori thriving in the technology sector. Supporting more rangatahi into the technology sector would need to be prioritised. This meant creating opportunities for rangatahi to enter the sector through kaupapa Māori pathways and by introducing them to digital and technology at an early age. Championing and elevating those already in the sector as role models would be critical. To increase Māori representation in the sector, the pathway between learning and earning would need to be better strengthened. Rangatahi and tamariki needed to be empowered to be leaders, creators and drivers of the actions to indigenise digital technologies. The approach could take various forms, from integrating rangatahi-Māori specific initiatives into the Strategy, to establishing a rangatahi group to lead rangatahi-specific engagements.</p>

Opportunities for Pacific peoples

The cross-agency team connected with around 50 people who participated in a Pacific peoples virtual hui. A critical factor in the success of the hui was the decision to ask Pacifica facilitators to lead the hui and breakout rooms sessions creating a welcoming environment for participants to share their ideas. The presence of the Minister for Pacific peoples, Hon Aupito William Sio, alongside the Minister for the Digital Economy and Communication, Hon Dr David Clark, at the hui was also praised by those participating.

There was a strong focus at the event on what was identified as the worsening digital divide between Pacific people and other groups in Aotearoa New Zealand. A summary report from the Pacifica facilitators said that attendees had articulated clearly that there was "a huge disadvantage for Pacific peoples – with reference to key success indicators such as income, housing, education and health". There was grave concern that Pacific people were getting left behind and that without bold, courageous leadership, this gap would only widen. Issues of access and affordability were raised, with real life scenarios used in educational and work contexts to explain how many Pacific families had limited resources, low incomes and little to no access to digital connectivity, the report said.

These barriers meant that Pacific students could not learn online during lockdown, and spaces in the home were also not conducive to learning or working from home. Issues arose from broadband not being easily accessed by those living below the poverty line and families not having any, enough or compatible devices to suit their needs for learning or working. This difference in starting points between Pacific peoples and other groups in Aotearoa was explicitly outlined by attendees – that there was intergenerational poverty and, without direct intervention, provision of funding and resource, and policy changes to lift and implement the living wage, Pacific peoples would continue to be overrepresented in negative statistics, the report said.

"COVID-19 has exacerbated the strain for many Pacific families. Attendees shared experiences of how the only form of access to the internet was through the free WIFI provided by community libraries. Lockdown restrictions meant many Pacific families dependent on this free service simply went without. Education tools, online lessons, connection to families and friends were suddenly unavailable and these compounding issues had a profound negative impact on the mental wellbeing, physical state, stability and function of many Pacific households. Government needed to take into consideration the digital implications lockdown has on Pacific families."

— Pacific Peoples Hui Summary Report

A holistic view in understanding the digital divide was crucial and highlighted the desperate situation and disparity Pacific peoples faced. It also meant that discussions about the future, what was possible, the dreams and aspirations were limited – not because attendees didn't have the capability, but because they felt strongly about how much of an impact this digital divide was and would continue to be if unaddressed.

Focus areas for Pacifica	From the facilitators' report:
The Digital Divide	The government needed to acknowledge the digital divide for Pacific communities and then work to address it through increasing digital literacy, implementing a mandatory living wage, and accelerating inclusive processes to support the needs of Pacific peoples in employment, schools, churches and other areas of society.
Communication and engagement strategies	The government would need to ensure that future engagement with Pacific communities around the Strategy was done in a way that was meaningful to them. The collaborative approach taken during the early engagement should be continued.
Roadmap	The government should create a roadmap for people to understand where digital initiatives and responsibilities would sit within government. It should be clear about how Pacific People could navigate the system to access information, resources, funding and experts who could support their digital needs.

Focus areas for Pacifica	From the facilitators' report:
Vā tapuia & Pasifika worldviews, values & experiences	The government should undertake a concerted effort to nurture the vā tapuia with Pacific peoples. The Strategy should reflect Pacific worldviews and paradigms and moreover in its implementation phase.
A basic human right	The government should make access to the internet affordable and equitable for Pacific peoples as a top priority. Declare that connectivity was a basic human right and outline how this would be implemented foremost for Pacific peoples and marginalised groups.
Pacific facilitators and leadership	The government would need to work closely with Pacific facilitators and community leaders who could be brought in early to design and deliver facilitated discussions and ensure that the Ministry for Pacific peoples continued a part of the approach to implementing the Strategy.

Opportunities for People with Disabilities

Two virtual hui and a series of organisational interviews were also focused specifically on People with Disabilities (PWD). Digital accessibility consultancy Access Advisors was commissioned to facilitate the engagement, which focused on the steps needed to ensure the accessibility of digital solutions, remove barriers to digital inclusion and consider the needs of disabled communities in the Strategy.

There was a wide range of attendees involved in the virtual hui including PWD, those representing disability organisations, support and advocacy organisations and business people with an interest in accessibility. Two hundred and fifty people known to have a personal or professional interest in digital accessibility in Aotearoa were invited and more than 100 people registered. To ensure a fair representation a range of New Zealand disabled persons organisations were also invited to participate in one-to-one interviews.

The facilitator's report commented that none of the people involved in the engagement process was against the core themes outlined in the discussion document. However, it was clear that PWD both wanted and needed specific consideration and funding to ensure they could participate in digital environments in an equitable way. While it was vital that all New Zealanders were offered the opportunity to participate fully in the digital world, allowance was also needed for those who still needed or wanted more traditional access to services.

Focus areas	What the facilitators' report said:
Collaborative design from the beginning	Ensure that PWD, their allies and whānau were included in creating solutions from the beginning. This would increase trust, reduce cost of reworking solutions, and capitalise on the innovation that comes with solving problems by including diverse needs and viewpoints.
Raise awareness	To help to grow business, the economy, and people of Aotearoa, it would be vital to focus on raising awareness of PWD, their needs and their strengths. There was a need to increase the awareness of disabilities and to do better when respecting the UN Convention and Human Rights Acts.
Provide funding	The funding model for PWD would need to be addressed to ensure all PWD would have long-term access to devices, adaptive technology, infrastructure and skills. Funding silos that address a specific requirement would need to be improved so that they would address the needs of individuals holistically.

Focus areas	What the facilitators' report said:
Facilitate multi-channel communication	Ensuring improved and timely two-way communication would allow PWD to participate in consultation and report issues to the right people, at the right time, using the channel best for them. Increased use of New Zealand Sign Language (NZSL), more interpreters, better technology, and systems to support the needs of people with communication barriers would be important.
Digital first, not only	Some people could not or would not embrace digital. Solid alternative solutions would therefore need to be created and implemented across the country.
Improve interface design	Even if all other barriers were removed to digital access, the provision of devices, connection and assistive technology, digital success and growth both locally and internationally would rely on public and private digital interfaces to be designed with accessibility in mind from the beginning.
Robust legislation	The new Ministry for Disabled People would have a significant role to play. Introducing robust accessibility legislation was vital to ensure compliance from the public sector and the private sector. Digital accessibility, inclusion and growth could not happen if digital services were not accessible, even if the best infrastructure, devices and training were implemented.

Other ideas and information that were shared

A wide range of organisations, community groups and individuals provided submissions on the discussion document including representatives from digital tech companies and telcos, local government agencies, unions, universities, academia, researchers, nurses and health sector providers, non-governmental organisations (NGOs), associations and advocacy organisations, consultancies, small businesses, tourism operators, transport providers and wider government agencies representing for example, libraries, the Office of the Privacy Commissioner, the Classification Office, the NZ Infrastructure Commission, the Electoral Commission, the arts sector (refer to the full list of organisations that made submissions in Appendix B).

A core theme that ran through the submissions was a recognition that the application of digital technology and need to keep up with rapid digital technology innovation was a consideration for a wide range of sectors, entities and organisations. They were keen to partner with central government agencies to improve digital access and capability within their own sectors and areas of influence.

- Local government agencies and libraries saw themselves as providing an important channel to improve digital access and capability in their own regions and communities.
- Health providers highlighted the issues and opportunities in improving digital access and capability in the health sector.
- Education providers highlighted the issues and opportunities of access, digital skills development and innovation in the education system.
- Academia highlighted the need to constantly innovate regulation settings and standards in the face of rapid technology change, along with the opportunities for New Zealand to show leadership in digital innovation and R&D.
- Transport providers highlighted the opportunities of digital innovation in areas such as transport network planning, management and monitoring.
- The Arts Council of New Zealand Toi Aotearoa (Creative New Zealand) saw alignment with the Digital Framework that Creative New Zealand developed in 2020, noting the impact of the COVID-19 pandemic on the sector's need to move increasingly online.

Individual submitters raised and supported many of the issues and opportunities already outlined under the Trust, Inclusion and Growth theme areas but also put forward a range of further suggestions and ideas.

Several individual submissions asked, if the government genuinely had a focus on innovation, why weren't some simple government services already digitally available. They asked, could the government provide a digital driver's license, for example, and could it make a PDF version of citizen certificates available?

Some focused on the cost of accessing digital services and asked for the government to regulate to reduce power and internet costs to make "fair access" available and offset the digital divide. One felt that the lower pricing paid for the Skinny Jump plan should be the price paid for all internet access.

Another submitter asked whether government might subsidise zero rated mobile devices, as Ministry of Social Development did now for citizens to access all of government services and whether it might consider funding a not-for-profit public sector version of Trade Me.

Some felt strongly that the government should play a stronger role in supporting New Zealand businesses and communities to enable New Zealand-led outcomes by:

- rolling out a countrywide scheme to deliver devices to New Zealanders,
- ensuring that digital skills training was available to all New Zealanders, not just those in the education system,
- safeguarding New Zealanders against cyber security risks, misinformation and online harm,
- ensuring that all data stored by government was stored onshore and controlled under New Zealand laws with rules over international access,
- regulating and introducing performance standards for digital services, like those used for electricity and water,
- making all government taxpayer-funded software compliant with open standards,
- improving international bandwidth to better support New Zealand businesses to export their services from New Zealand without the need to move offshore due to bandwidth limitations,
- supporting digital technology and creative sector start-ups with incentives like those already provided to the film industry,
- creating a centralised service 0800 hot desk for citizens to speak to a real person on the phone when they had problems accessing or using government services,
- prioritising New Zealand technology providers in government procurement processes, and using New Zealand only digital/ICT providers in the education system,
- limiting the project purchase cost for individual govt projects to \$10 million to manage risk and ensuring that significant government digital projects were overseen by a New Zealand governance group with non-government tech expertise, and,
- creating community reference groups with training, templates and administrative support to assist communities to develop their own digital solutions.

Appendix A – Glossary of terms

These terms and phrases are used in the digital world and throughout this summary document.

5G technology — the fifth generation of mobile technology. It enables higher rates of data transmission, reliability and connectivity than earlier 3G and 4G technologies.

Artificial intelligence (AI) — a computerised system capable of simulating human decision making and learning, including performing cognitive functions associated with the human mind including learning and language.

Cyber security — protecting people and their computers, networks, programmes and data from unauthorised access, exploitation or modification.

Data — facts and statistics collected together for reference or analysis.

Digital — available in electronic form, readable and able to be manipulated by computer.

Digital access — the ability to fully participate in digital society. This includes access to tools and technologies, such as the internet and devices. Digital access can also refer to whether online materials are designed to be accessible for disabled people (for example, for blind people using text-to-speak programmes).

Digital divide — refers to the gap between demographic population segments and regions that have access to modern information and communications technology, and those that don't or have restricted access.

Digital exclusion — refers to individuals and population groups that do not have access to affordable internet or devices, or do not have the skills, motivation or trust to engage in the digital world.

Digital identity — how you show who you are online. A person's digital identity can be any information about them, that they use to access online services. For example, proof of age, qualifications or address.

Digital infrastructure — comprises the physical resources that are necessary to enable the use of data, computerised devices, methods, systems and processes.

Digital inclusion — a digitally-included person is someone who has access to affordable and accessible digital devices and services at a time and place convenient to them, as well as the motivation, skills and trust to use them.

Digital literacy — the essential digital skills you need to live, learn and work in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media and mobile devices. This excludes higher-level skills – for example, programming.

Digital services — the electronic delivery of information and services including data and content across multiple platforms and devices like web or mobile.

Digital skills — the skills people need to engage in the digital world from both an essential level (for example, digital literacy) to more advanced skills needed to work in the technology sector (for example, programming skills).

Digital technologies — electronic tools, systems, devices and resources that generate, store or process data. Well known examples include social media, online games, multimedia and mobile phones.

Digitisation — the conversion of content (for example, text, pictures and sound) or business processes into a digital form that can be processed or supported by digital technologies.

Facial-recognition technology — a way of identifying or confirming an individual's identity using their face. It can be used to identify people in photos, videos or in real-time.

Phishing — using fraudulent emails to persuade people to reveal confidential information, such as login or banking information.

Privacy or information privacy — broadly speaking, privacy is the right to be let alone, or freedom from interference or intrusion. Information privacy is the right to have some control over how your personal information is collected and used.

Software — the programmes used by a computer, as well as other information that it relies on to operate.

The cloud or cloud computing — a network of remote servers which either store and manage data, run applications, or deliver content or a service such as streaming videos, web mail and software. Instead of accessing data from a local computer network, you access them online.

Te Ao Māori — the Māori world view.

Appendix B – List of organisations that made submissions

The organisations listed each made individual submissions which contributed to this summary document.

List of organisations that made submissions

Adaptive Technology Solutions Ltd	E tū Union
Amazon Web Services	FinTechNZ
Artificial Intelligence Forum of New Zealand	Federated Farmers of NZ
Arts Council of New Zealand Toi Aotearoa (Creative New Zealand)	Greater Christchurch Schools' Network
ASB Bank NZ	Honey Consulting Ltd
Association for Local Government Information Management (ALGIM) and Smart Cities Council ANZ	InternetNZ
Blind Low Vision NZ	Infrastructure New Zealand
Blink Pay	IT Professionals New Zealand (ITPNZ)
BNZ	Manaiakalani
BusinessNZ	Joint Digital Technology Industry
Canterbury University (Computer Science Education Research Group)	Manawatū Tenants' Union
Catalyst IT	Massey University
CentraPass	Mega Limited The Privacy Company
Chorus	Microsoft
Cisco New Zealand	Ministry of Education – Education Digital and Data Board
Citizens Advice Bureau	MYOB
Classification Office	National Library of New Zealand - The New Zealand Libraries Partnership Programme
Comet Auckland	New Zealand Electoral Commission
Community Waikato, Web Access Waikato Trust and Smart Cities Council ANZ	New Zealand Health Information Technology
Digital Inclusion Alliance Aotearoa	New Zealand Nurses Organisation
Disabled Persons Assembly NZ	New Zealand Open Source Society Inc.
Digital Service Providers Australia New Zealand (DSPANZ)	New Zealand Telehealth Forum and NZ Telehealth Leadership Group
Digital Technology Industry Groups (DTIG)	NZ Game Developers Association
	NZ Infrastructure Commission – Te Waihanga

List of organisations that made submissions

NZRise	Te Aka Toitū Trust
OpenWorks	Te Herenga Waka—Victoria University of Wellington
Office of the Privacy Commissioner (OPC)	TechLeaders Executive
Payments NZ	TechnologyOne
Physicians and Scientists for Global Responsibility	Toi Rauwhāangi, The College of Creative Arts, Massey University
PlanTechNZ	The Research Education Advanced Network New Zealand (REANNZ)
Public Service Association	TUANZ
Queenstown Lakes District Council	TradeWindow
Runaway games	Veracity Lab
Safe ICT NZ Inc.	Venture Taranaki
Salesforce	Vodafone
SeniorNet Wellington	WeCreate
Software Innovation New Zealand	Wollemi Consulting Limited
Spada NZ	Xero
Spark NZ	



Te Kāwanatanga o Aotearoa
New Zealand Government