TE KĀHUI RARAUNGA

MĀORI DATA
GOVERNANCE MODEL

He kura ka huna,
he kura ka whākina,
e koropupū ana
te Wai Ora!

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We acknowledge the imagery of the precious korowai and kahukura featured in this report and the hands that wove them. These korowai have been woven by Cori Marsters and their images generously shared for our use, to reaffirm our te ao Māori view of data and data governance and to depict the Vision of the Māori Data Governance Model: Tuia te korowai o Hine-Raraunga.

He Karakia He Mihi

Tui Tui Tuituia
Tuia te Rangi e tū nei
Tuia te Papa e takoto nei
Tuia te marere kura
Tuia te marere pae
Tuia ki te Ihiihi nuku
Tuia ki te Ihiihi rangi
Tuia ki te korowai o Hine-Raraunga e
Haumi e! Hui e! Taiki e!

E ngā rau tinitini, e ngā rau manomano

Ko te korowai o Hine-Raraunga tēnei
te tukua atu ki te tuai nuku, ki te tuai rangi.

Nō te ao Māori te pū o te whakaaro kia eke ki tā te Tiriti i wawata ai.
Purea ana te tau raraunga o Mana Motuhake.

Hei aha rā? Hei whakaū i ngā kohikohinga kōrero a te whānau,
a te hapū, a ngā iwi, e mōhio ai, e mārama ai, e motuhake ai.

Whiria kia tika, whiria kia pono, whiria te korowai o
Hine-Raraunga ki tōna taumata tiketike e.

Executive Summary

This report describes the Māori Data Governance Model that has been designed by Māori data experts for use across the Aotearoa New Zealand public service. Māori data is a taonga that requires culturally grounded models of protection and care. The Model provides guidance for the system-wide governance of Māori data, consistent with the Government's responsibilities under te Tiriti o Waitangi. The Model is intended to assist all agencies to undertake Māori data governance in a way that is values-led, centred on Māori needs and priorities, and informed by research. This is important because existing government data processes and practices are failing to meet Māori informational needs.

The Vision, **Tuia te korowai o Hine-Raraunga – Data for self-determination,** enables iwi, hapū and Māori organisations, businesses and communities to pursue their own goals for cultural, social, economic and environmental wellbeing. Eight Data Pou or pillars define critical areas of data governance and specify the actions that should be undertaken to realise six desired outcomes. The Model does not cover every element of data governance; instead, it focuses on key priorities and actions, against which agencies can assess their level of data maturity. The Model explicitly recognises the need for changes to system leadership, policies and legal settings so that Māori can exercise authority over Māori data to reduce unethical data use and strengthen outcomes for individuals, whānau and communities. The report also identifies the need for strategic investment in a Mana Motuhake data system that sits outside of the public sector to ensure iwi and hapū sovereignty over iwi and hapū data.

Māori Data Governance Model

TE KĀHUI RARAUNGA

Vision

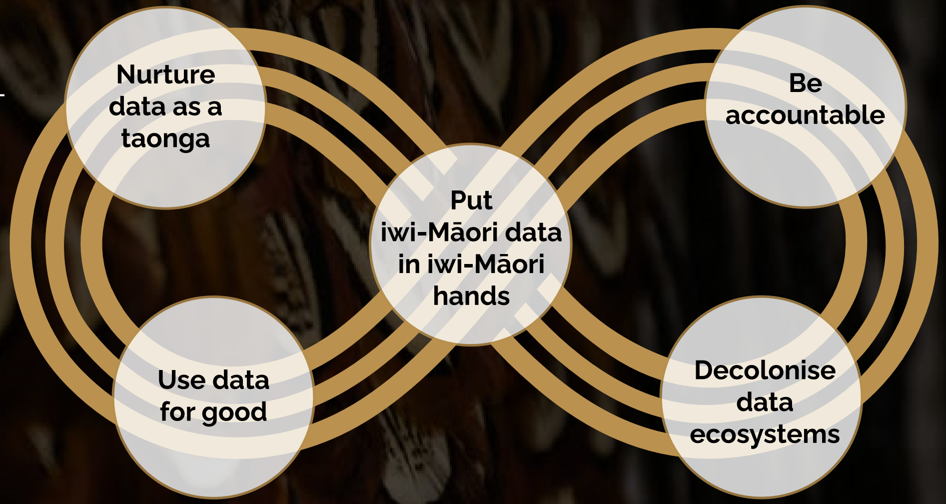
Tuia te korowai o Hine-Raraunga
- Data for self-determination

This vision enables iwi, hapū and Māori organisations, businesses and communities to pursue their own goals for cultural, social, economic and environmental wellbeing and to address inequities.

Desirable Outcomes:

- The right service, at the right time, in the right way
- Better shared and autonomous decision-making
- A trusted and safe data ecosystem
- Data to drive iwi-Māori economies
- Supporting whānau to flourish
- Reaffirming and strengthening connections to identity, place and te reo Māori

Values



Māori authority over Māori data

Data Pou

1 Data capacities and workforce development

2 Data infrastructure

3 Data collection

4 Data protection

5 Data access, sharing and repatriation

6 Data use and reuse

7 Data quality and system integrity

8 Data classification

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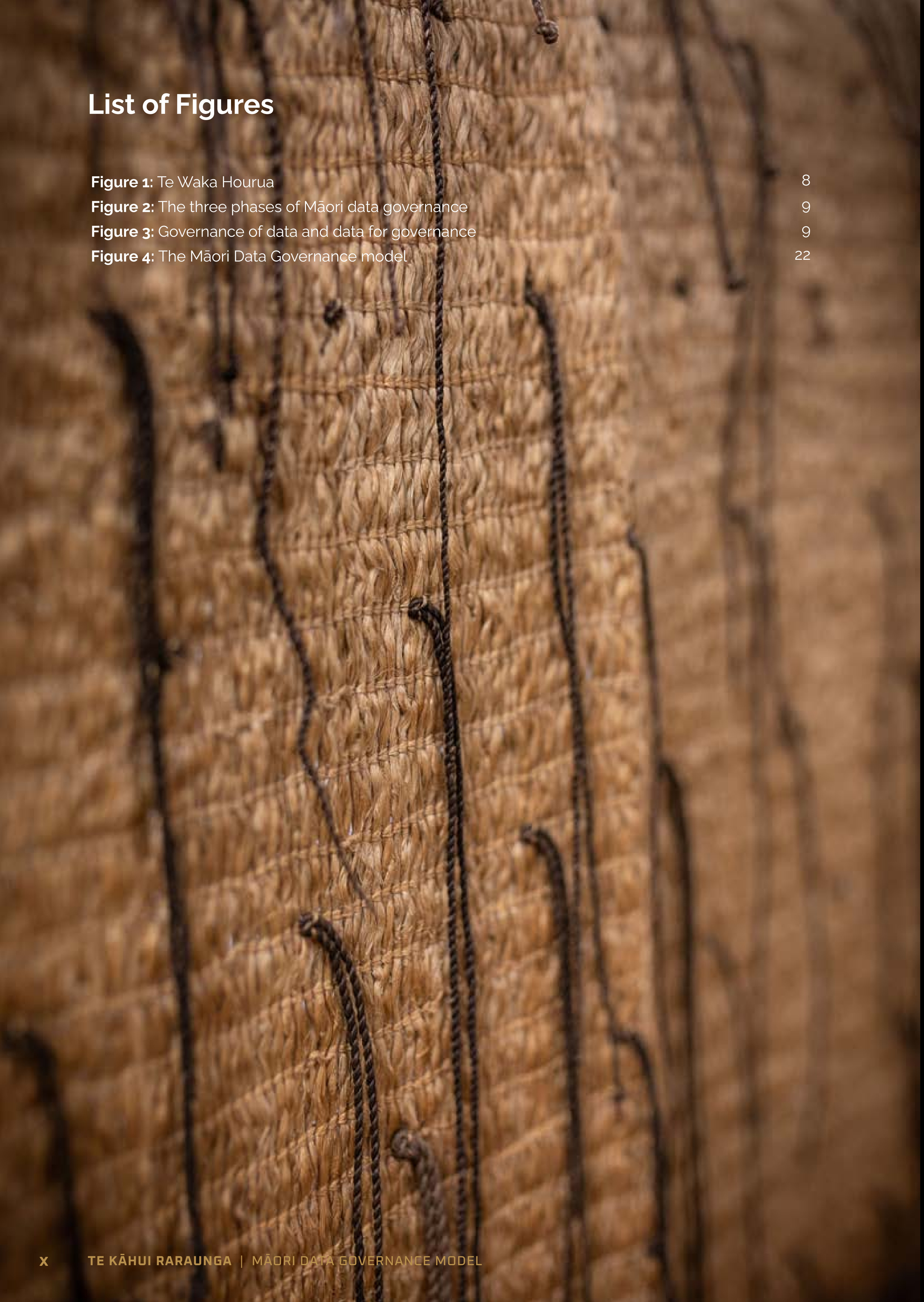
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Definitions

algorithms

A series of steps through which particular inputs can be turned into outputs. An algorithmic system is a system that uses one or more algorithms to produce outputs that can be used for making decisions.

Crown

The Crown means the Sovereign and includes all ministers of the Crown, all public service agencies and all non-public service departments.

data harm

Data harm refer to the adverse effects caused by uses of data that damage or set back a person, group, entity or society's interests. [1]

data repatriation

Indigenous data repatriation means returning Indigenous data to Indigenous rights-holders, whether individuals or collectives. This differs from data repatriation in cloud computing which usually means returning data and applications from the cloud to a traditional enterprise data centre.

interoperability

The ability of different systems, devices, applications or products to connect and work with other products of systems.

Māori

The term Māori, as used in this report, include all individuals and collectives self-identified or recognised as Māori, including hapū, iwi and hapori.

Māori data

Māori data refers broadly to digital or digitisable data, information or knowledge (including mātauranga Māori) that is about, from or connected to Māori. It includes data about population, place, culture and environment. [2]

Māori data governance

The principles, structures, accountability mechanisms, legal instruments and policies through which Māori exercise control over Māori data.

Māori data sovereignty

The inherent rights and interests that Māori have in relation to the collection, ownership and application of Māori data.

public service

The public service is defined in section 10 of the Public Service Act 2020 to mean public service agencies. The Act also includes Crown agents for the purposes of subparts 2 and 4 of part 1 of the Act relating to values and behaviours.

public sector

The public sector includes the public service, state sector and local government.

surveillance capitalism

A system built around the harvesting and commodification of personal data for profit.

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[1] For a comprehensive description of data harm, see Redden, Brand & Terzieva (2020).

[2] For definitions of Māori data, see Te Kāhui Raraunga (2021a) and Te Mana Raraunga (2018).

Glossary

Aotearoa	traditional name now commonly used as a Māori name for New Zealand
hapori	community
hapū	subtribe
hui	assembly, meeting
iwi	tribe
kaimoana	seafood
kaitiaki	guardian
kaitiakitanga	guardianship, stewardship
karakia	traditional ritual chant done to acknowledge atua Māori or the environment
kaumātua	elder
kaupapa	plan, principle, philosophy
kawa	immutable protocols
kāwanatanga	government, governance
kōrero	talk, speech, story
maara kai | māra kai	food garden
mana motuhake	Māori self-determination
Mana Ōrite	an iwi–Crown relationship agreement based on equal authority
mana whenua	the Indigenous People with primary rights over an area
manuwhiri	visitors, guests
Māori	the Indigenous People of Aotearoa
marae	courtyard in front of a traditional meeting house
maramataka	Māori lunar calendar
mātauranga	Māori Māori knowledge system
mauri	life force
mokopuna	grandchild(ren), descendant(s)
moumou	to waste
noa	unrestricted, be free of tapu
pono	to be true, valid, genuine
pou	pillar
pōwhiri	formal welcome, welcome ceremony
pūkenga	expert, specialist
pūrākau	historic narratives
raa matua	sails of a waka hourua
rāhui	prohibition or a ban
rā matua	sails
rangatahi	youth
ranga wānanga	working meeting
rangatiratanga	chieftainship
raupatu	confiscation
riu	hulls of a waka hourua
rōpū	group, committee, organisation
taha kāwanatanga	group from government agencies involved in Phase II of the Model
taha Māori	group from te ao Māori involved in Phase II of the Model
taiao	natural world, environment
Tangaroa a Māori	deity of the sea
tāngata	people
tangata	person
tangata whenua	people of the land, Indigenous People
taonga	those things and values that we treasure, both intangible and tangible
taonga tuku iho	an ancestral gift
taonga katoa	all treasured things
tapu	sacred, restricted or prohibited
te ao Māori	the Māori world
te ira tangata	the human domain
Te Kāhui Raraunga	the operational arm of the Data Iwi Leaders Group
Te Mana Raraunga	the Māori Data Sovereignty Network
te taiao	the natural world
te Tiriti o Waitangi Aotearoa	New Zealand's foundation document
tika	to be correct, appropriate, lawful
tikanga	custom, rules
tino rangatiratanga	Māori authority, sovereignty, absolute control
tūpuna	ancestors
uaratanga	value(s)
waiora	wellbeing
wairua	spirit
waka	vessel, canoe
waka hourua	double-hulled canoe
wānanga	educational seminar, to meet and discuss
whakapapa	genealogy
whānau	family
whata	storehouse
whenua	land

Initialisms

AI	artificial intelligence
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
AOG	all of government
ATSIDA	Aboriginal and Torres Strait Islander Data Archive
CARE	Collective benefit, Authority to control, Responsibility and Ethics – four principles that anchor the governance of Indigenous data.
Data ILG	Data Iwi Leadership Group (of the National Iwi Chairs Forum)
DGA	Data Governance Australia
FAIR	Findable, Accessible, Interoperable, Reusable – four principles for scientific data management and stewardship
FNDGS	First Nations Data Governance Strategy
FNIGC	First Nations Information Governance Centre
FPIC	free, prior and informed consent
GS	Government Statistician
GCDO	Government Chief Digital Officer
GDPR	(European Union) General Data Protection Regulation
GCDS	Government Chief Data Steward
GIDA	Global Indigenous Data Alliance
HIPC	Health Information Privacy Code
ICCPR	International Covenant on Civil and Political Rights
IDGov	Indigenous data governance
IDSov	Indigenous data sovereignty
IM	information management
IoT	the Internet of Things
IPPs	information privacy principles
IT	information technology
KPI	key performance indicator
MDGov	Māori data governance
MDSov	Māori data sovereignty
NZBORA	New Zealand Bill of Rights Act 1990
ODRL	Open Digital Rights Language
PHRaE	Privacy, Human Rights and Ethics framework
SRRP	(United Nations) Special Rapporteur on the right to privacy
TKR	Te Kāhui Raraunga
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

Part 1

Introduction

Purpose of this report

This report describes the Māori Data Governance model (the Model) that has been designed by Māori data experts for use across the Aotearoa New Zealand public service.

The Model was developed as part of the ground-breaking Mana Ōrite Relationship Agreement between the Data Iwi Leaders Group (Data ILG) and Stats NZ (Stats NZ, 2021; Te Kāhui Raraunga, 2021b). The partnership was formed to progress initiatives that strengthen iwi, hapū and whānau wellbeing through the innovative use of data. For Māori, data is a taonga that requires culturally grounded models of protection and care.[3, 4] The Model sets clear expectations for the system-wide governance of Māori data, and provides direction on the actions, processes and activities needed to meet these expectations.

Good data practices and policies are crucial for achieving resilient and sustainable data systems that people can trust and benefit from. There are many ways that data contributes to positive outcomes. For Indigenous Peoples, data governance and data sovereignty are seen as critical enablers of self-determination, development and devolution (First Nations Information Governance Centre, 2020; Special Rapporteur on the right to privacy, 2019; Walter et al., 2020). Data can support and inform decision-making and service improvement to strengthen the wellbeing of individuals, whānau and communities (Social Wellbeing Agency, 2022a). Data can be used to generate different kinds of value in the data economy (Data Economy Collective, 2020),[5] and to propel research, science and innovation (Ministry of Business, Innovation and Employment, 2022). Data can also help manage infrastructure more effectively and sustainably (Infrastructure New Zealand, 2020), support language revitalisation and traditional knowledge (Te Hiku, 2022), protect biodiversity (Department of Conservation, 2020), and inform climate change mitigation and adaptation, and crisis response (Ministry for the Environment & Stats NZ, 2022).

However, major changes are needed to meet the current and future data needs of Māori (Kukutai & Cormack, 2020; New Zealand Government, 2021; Te Kāhui Raraunga, 2021a). Most Māori data sits within systems designed and controlled by the government and, increasingly, the private sector. More often than not, the data collected is not the data that Māori organisations and communities actually need to construct their own narratives, answer their own questions, inform their own strategic planning and actions, and monitor their own outcomes. Māori also face financial and technical barriers to accessing and using data held by agencies and the private sector, which can be hard to find and lack interoperability. At the same time, because Māori are more likely than other groups to have some level of interaction with a government agency, Māori are also more likely to be included in multiple government data sets. The result is that Māori disproportionately contribute to public sector data assets, but do not receive the full benefits and insights that such data can provide.

There are also risks arising from unethical practices that cause data harm to individuals and whānau. Data harm can take many forms, from algorithmic profiling that targets and discriminates to more serious instances of online hate and extremism (Christchurch Call, 2021; Taylor et al., 2022). Issues of bias and inaccuracy in facial recognition tools have been well documented, as have the harms that occur when technologies are deployed in contexts that discriminate on the basis of race, sex, and/or socio-economic status (Eubanks, 2018; Noble, 2018; O'Neil, 2016). Data harm can also occur in more indirect ways through 'deficit' data analysis and visualisation that further stigmatises or blames marginalised groups (Blakeley & Blakeley, 2022). Too often Māori have borne the effects of deficit statistics and other poor data practices in Aotearoa.

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[3] In keeping with general usage, we use the singular form of data throughout this report.

[4] Consult the glossary at the front of this report for the translation of Māori words.

[5] In Aotearoa, the benefits associated with the census are conservatively estimated at around $2.8 billion nationally (Bakker, 2021) and at a net value of $500 million for Māori (Bakker, 2019).
https://www.mbie.govt.nz/dmsdocument/13175-data-economy-collective-prototype-of-a-data-economy-pdf

What is Māori data governance?

Māori data governance (MDGov) refers to the processes, practices, standards and policies that enable Māori, as collectives and as individuals, to have control over Māori data.

Māori data refers broadly to digital or digitisable data, information or knowledge (including mātauranga Māori) that is about, from or connected to Māori. It includes data about population, place, culture and environment (Te Kāhui Raraunga, 2021a; Te Mana Raraunga, 2018). MDGov enables Māori to make decisions about how, when and why Māori data is defined and classified, collected, stored, accessed, analysed, used and shared (Te Mana Raraunga, 2018).

MDGov is closely connected to the concept of *Māori data sovereignty* (MDSov), which is the inherent rights and interests that Māori have in relation to the collection, ownership and application of Māori data (Te Kāhui Raraunga, 2021a; Te Mana Raraunga, 2018). MDSov thus extends beyond mainstream concepts of data sovereignty which are primarily concerned with data residency and jurisdiction (New Zealand Government, n.d.). MDSov is both an expression and enabler of iwi and hapū sovereignty which, in Aotearoa, is more properly understood as tino rangatiratanga or mana motuhake (Jackson, 2018). Whereas mainstream concepts of data rights and data protection focus almost entirely on individuals, Māori and *Indigenous data sovereignty* (IDSov) also recognises and upholds collective data rights.

MDSov and IDSov both reflect and enable other collective rights set out in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (see Carroll et al. (2019) and Davis (2016)). For example, the rights of self-determination, self-government and fiscal autonomy described in Articles 3 and 4 of the UNDRIP require Indigenous sovereignty over Indigenous data in order to be meaningful (FNIGC, 2020). Indeed, the UN Special Rapporteur on the right to privacy (2018, 2019) has called on both national governments and private corporations to recognise and uphold Indigenous Peoples' rights to data sovereignty. Governments that endorse the UNDRIP thus have responsibilities to think in more complex and comprehensive ways about the governance of Indigenous data.

Why is Māori data governance important?

Existing government data processes and practices are failing to meet Māori informational needs. Data governance arrangements often lack clarity of purpose about what is being governed and why governance is needed.

MDGov is essential for Aotearoa to have a resilient and trustworthy data system that can meet evolving Māori needs and aspirations. A hallmark of a genuinely trustworthy data system is one that works for those who have the least trust in government institutions.[6] MDGov is intended to promote more balanced power relationships, build trust and accountabilities, reduce the risk of data harm and provide for redress when harm does occur, and create greater value for Māori.

The demand for data-driven and evidence-based decision-making means that the collection, sharing, analysis and use of data is increasing rapidly across the public service. Often this is occurring in the absence of clear policies or guidance, particularly with regards to MDSov (New Zealand Government, 2021). The Aotearoa public sector has relatively low maturity with regards to data management and governance and there are weaknesses across the three critical areas of people, processes and technology (Auditor-General, 2018a). Few public sector organisations have the capability needed to manage data as a strategic asset and most have not fully integrated data governance into their business processes. This makes for a challenging environment in which to design and implement MDGov, but also underscores the vital importance of doing so.

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[6] Surveys typically show that Māori have lower levels of institutional trust (e.g., in the Police, parliament) than other ethnic groups in Aotearoa (Ngā Tūtohu Aotearoa | Indicators Aotearoa New Zealand). Māori surveyed about the Integrated Data Infrastructure (IDI) were also more wary about data misuse in the IDI than other groups (Thabrew et al., 2022).

The extractive practices of Big Tech and the rise of surveillance capitalism also underscores the government's obligations to actively protect Māori – and indeed all New Zealanders – from harms arising from unethical corporate practices (Zuboff, 2019).[7] Racial and gender bias in automated decision-making (Eubanks, 2018; Noble, 2018; O'Neil, 2016), data colonialism (Couldry & Mejias, 2019; Mahelona et al., 2023) and surveillance capitalism (Zuboff, 2019) are all major challenges which legal and regulatory frameworks have largely failed to address. There are also concerns about how Māori data rights and interests will be protected (or not) in the development of international trade agreements (Waitangi Tribunal, 2021).

As a founding member of the Digital Nations – an international forum of leading digital governments committed to developing best practice – the New Zealand Government has a unique opportunity to model best practice in the design and implementation of data systems that are human-centred, equitable and innovative.[8] As tangata whenua, Māori have an interest in data practices and systems that are ethical, environmentally sustainable and tika for all data in Aotearoa, not just Māori data.

What is the wider global context for Māori data governance?

MDGov is part of a growing global movement to realise Indigenous data sovereignty and governance (see the Appendix for an overview of international models).

The Canadian First Nations Information Governance Centre (FNIGC) has long been the flagbearer of Indigenous data governance (IDGov). For more than two decades the First Nations Principles of OCAP®, which stands for **O**wnership, **C**ontrol, **A**ccess and **P**ossession of First Nations data, have asserted the rights of First Nations to control data collection processes and how information can be used (FNIGC, 2022). The OCAP principles and framework cover all aspects of information creation and management and apply to any collection of data, including research, programme evaluation, development of surveys and statistics, and the use of traditional knowledge. In 2020 the FNIGC received a major boost to its data governance work with a CA$73 million allocation from the Canada Federal Government to develop and implement a national First Nations data governance strategy.[9] The strategy is driven by the vision of every First Nation achieving data sovereignty in alignment with their distinct world view (FNIGC, 2020). A core focus of the strategy is to build semi-autonomous regional centres capable of meeting the informational needs and priorities of First Nations communities.

Another important development is the CARE Principles for Indigenous data governance. Created by members of the Global Indigenous Data Alliance, the principles provide high-level guidance on the governance of Indigenous data with the goal of providing tangible benefits for Indigenous Peoples around the world (Carroll et al., 2020; Carroll et al., 2021). The principles have been affirmed or adopted by several influential organisations including the global Research Data Alliance, UNESCO Recommendation on Open Science, IEEE Recommended Practice for the Provenance of Indigenous Peoples' Data, and AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research.

Other high-level IDSov and IDGov principles and codes have also been developed in Australia (Walter et al., 2018) and the United States (Rainie et al., 2017). Despite different contexts and strategies for pursuing IDSov internationally, these initiatives share several common features:

- a focus on self-determination and intergenerational wellbeing
- recognising data as a valued cultural resource
- an emphasis on collective data rights, and
- prioritising Indigenous values as the basis for good data governance.

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[7] *Big Tech* is a term used to describe the handful of companies that dominate the information technology industry of the United States and typically includes Alphabet (Google), Amazon, Apple, Microsoft and Meta (Facebook).

[8] https://www.digital.govt.nz/digital-government/international-partnerships/digitalnations/

[9] https://fnps.ca/bcfndgs-engagement-sessions/

These shared features of IDGov contrast with mainstream understandings of data governance. The latter is generally concerned with roles and responsibilities, identifying what fundamental decisions need to be made about data and who should make them (Khatri & Brown, 2010). Prevailing data governance models usually focus on aspects that include data standards, quality, access, metadata, the data life cycle and compliance monitoring (Cheong & Chang, 2007; Khatri & Brown, 2010). In corporate contexts, the purpose of data governance often relates to the management of data as an asset to maximise corporate efficiency and profits. Public agencies tend to focus on data governance to support service improvements, easing compliance and reducing costs (Carroll et al., 2019). In recent years, agencies have tried to move towards a more holistic approach to data governance to take account of executive, management and operational considerations.[10] Data governance is related to, but distinct from, internet governance which encompasses the rules, policies, standards and practices that co-ordinate and shape global cyberspace (e.g., cybersecurity, digital trade, internet identifiers, privacy and surveillance). As this report shows, aspects of mainstream data governance and internet governance are relevant for MDGov but are far from sufficient. What is needed is a Māori-designed bespoke approach.

Who is this report for?

There are two main audiences for this report. One is te ao Māori, which includes iwi and Māori organisations that often manage their own data sets (e.g., tribal registers, service-user data sets), or may require Māori data that is held and/or controlled by the government.

This audience also includes whānau, hapū and other collectives that may manage their own data, seek access to data held by the government, or control how their data is made available to others.

The other main audience is government agencies – specifically, individuals in agencies that are responsible for making decisions about Māori data – as well as government ministers and policy advisers.[11] Agencies are important because they hold a substantial volume of Māori data. The decisions they make affect the availability of accurate, timely and relevant Māori data to guide policy direction and decision-making in all areas of their work. The government also has a range of levers available to it in order to influence how the private sector interacts with Māori data, and to uphold its Tiriti responsibilities around active protection of Māori data as a taonga. These levers can be exercised in a range of ways, including through regulatory settings, procurement practices and policies.

Background and engagement to date

This section provides a brief overview of the background to the Model and the wider engagement that has occurred to date.

Flagged as a priority workstream under the Mana Ōrite Relationship Agreement, the development of the Model was undertaken as a phased approach.

Phase I focused on consultation and engagement. A number of Māori data wānanga were held throughout 2020 as part of a co-design process facilitated by Aatea Solutions and Creative HQ. Participants included iwi and national Māori leaders, representatives of Māori organisations with data interests, individual Māori data experts, and senior representatives of 16 public service agencies.[12] Three online ranga wānanga were held, followed by two in-person co-design wānanga at the end of 2020. The purpose of the two in-person wānanga was to identify key elements of the MDGov Model co-design process and reach a consensus about the way forward (Te Kāhui Raraunga, 2021b, 2021c).

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[10] https://data.govt.nz/toolkit/data-management/assessing-the-accuracy-of-your-data/

[11] While this Model focuses on the public service, it is relevant and adaptable to the public sector as a whole.

[12] For a list of the agencies involved in Phase I, see Te Kāhui Raraunga (2021b, p. 39).

Several key points were made:

- **Iwi and hapū have sovereignty over iwi and hapū data.**
  Iwi and hapū are Tiriti partners who have sovereignty over all of their taonga, including iwi and hapū data.
- **Data should be used for good.**
  Data should facilitate the uplift of tāngata and taiao and support social, cultural, environmental and economic advancement at all levels, from individuals and whānau, to the nation.
- **MDGov requires system leadership.**
  MDGov requires Māori data system leadership, with one option being a Chief Māori Data Steward (CMDS). Many participants felt this role should be recognised as equal to the existing Government Chief Data Steward (GCDS), with equitable resourcing and support staff, and a Māori-determined work plan and terms of reference.[13] A CMDS would begin to rebalance power between Tiriti partners and lay the foundations for a Māori-designed and autonomous Mana Motuhake data system.
- **Resourcing is essential.**
  Transforming data systems to achieve better outcomes for Māori requires significant investment. Te ao Māori participants noted that the Government had only invested in its own side of the 'waka'. The timing was right to develop a long-term, sustainable approach to investing in fit-for-purpose Māori data infrastructure, capacity and capability.
- **Lead with Māori values.**
  Māori values should anchor the strategic direction of MDGov, be evident in all aspects of the Model, and make visible the reciprocal relationships between data producers, users, regulators and rights-holders.
- **Process and legal settings must be embedded.**
  Legislation would likely be required to ensure that the right mechanisms, processes and settings are in place for MDGov to function effectively. Legislative change that recognises Tiriti rights over data as a taonga is a longer-term goal requiring cross-party support.

The wānanga also reached a consensus on three significant 'next steps' for Phase II:

- **Step 1:** Led by Te Kāhui Raraunga, an Ohu working group should be established to develop the Model, comprising members selected for Taha Māori and Taha Kāwanatanga.
- **Step 2:** The concept of Waka Hourua (see below) should guide the development of the Model.
- **Step 3:** Consideration should be given to the establishment of a CMDS role.

Waka Hourua: Tiriti partnership and Mana Motuhake

In Phase I, the concept of a *Waka Hourua* emerged as a guiding metaphor for the Model development (see Figure 1; for a more detailed description, see Te Kāhui Raraunga (2021b)).

The Waka Hourua gives effect to te Tiriti by identifying the equal but distinctive roles that te ao Māori and the government play in transforming Aotearoa's data ecosystem.

The two riu in Figure 1 represent te ao Māori and the government, and the resources each holds. Te Tiriti is represented by the roof of a whare that sits between the two hulls. The whare supports wellbeing for all, and relies on shared power and decision-making, in recognition that when Māori succeed, everyone succeeds. The lashings that connect each riu to rā matua symbolise connectivity, strength and partnership, while the wind in rā matua are driving factors for support, growth, purpose and momentum. Successful navigation towards a shared direction requires balance between the two hulls.

Currently, the data resources and investment in the government hull is undeniably greater, resulting in an unbalanced waka. An effective partnership, with shared power and decision-making, requires equitable foundations for working together. Building the riu of te ao Māori requires the government to transform its own

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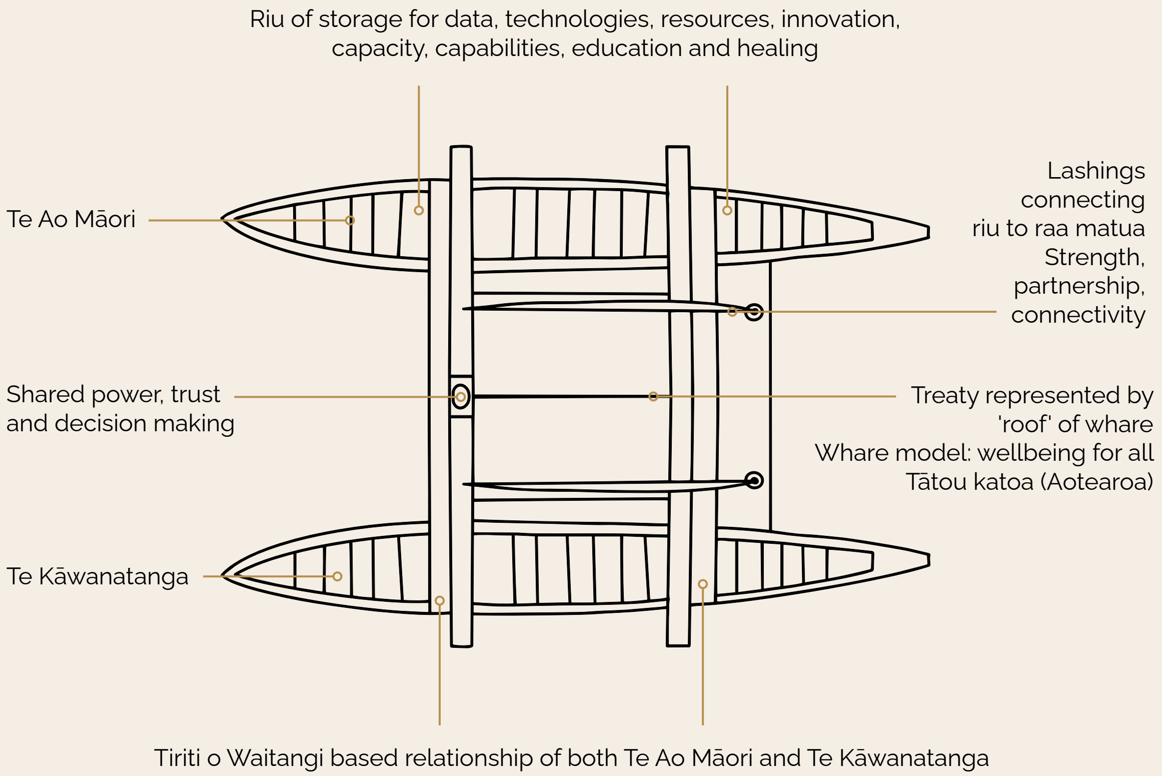
[13] Te Kāhui Raraunga, 2021b, p. 40.

data systems from the current hierarchical model, to one where power is more distributed and Māori have genuine authority over Māori data. That is, an effective partnership needs to **transform from a government-controlled system to a Tiriti-led system.**

This is the focus of the Model set out in this report. Drawing on the work of Carroll et al. (2019) and the Global Indigenous Data Alliance (2022), we call this *governance of Māori data.*

Figure 1:
Te Waka Hourua



Source:
Tawhiti Nuku: Māori Data Governance Co-design Outcomes Report (Te Kāhui Raraunga, 2021b).

Intentional, strategic investment in a *Mana Motuhake* data system that sits outside of government is also necessary to achieve te ao Māori aspirations for self-determination, including devolution of services and functions (Te Kāhui Raraunga, 2021a). The expectation is that in Phase III, te ao Māori will be resourced to accelerate the critical steps needed for an autonomous Māori data system – what we call *data for Māori governance*. The third phase is crucial for ensuring iwi and hapū sovereignty over iwi and hapū data.

This dual approach recognises that both partnered and autonomous solutions are needed, and that there are aspects of Māori data aspirations that cannot, and ought not, be constrained to government frameworks and institutions. This dual focus also aligns with the *Government Data Strategy and Roadmap* that identifies both data for Māori governance and governance of Māori data as priorities in terms of system outcomes (New Zealand Government, 2021).

Figure 2:
The three phases of Māori data governance

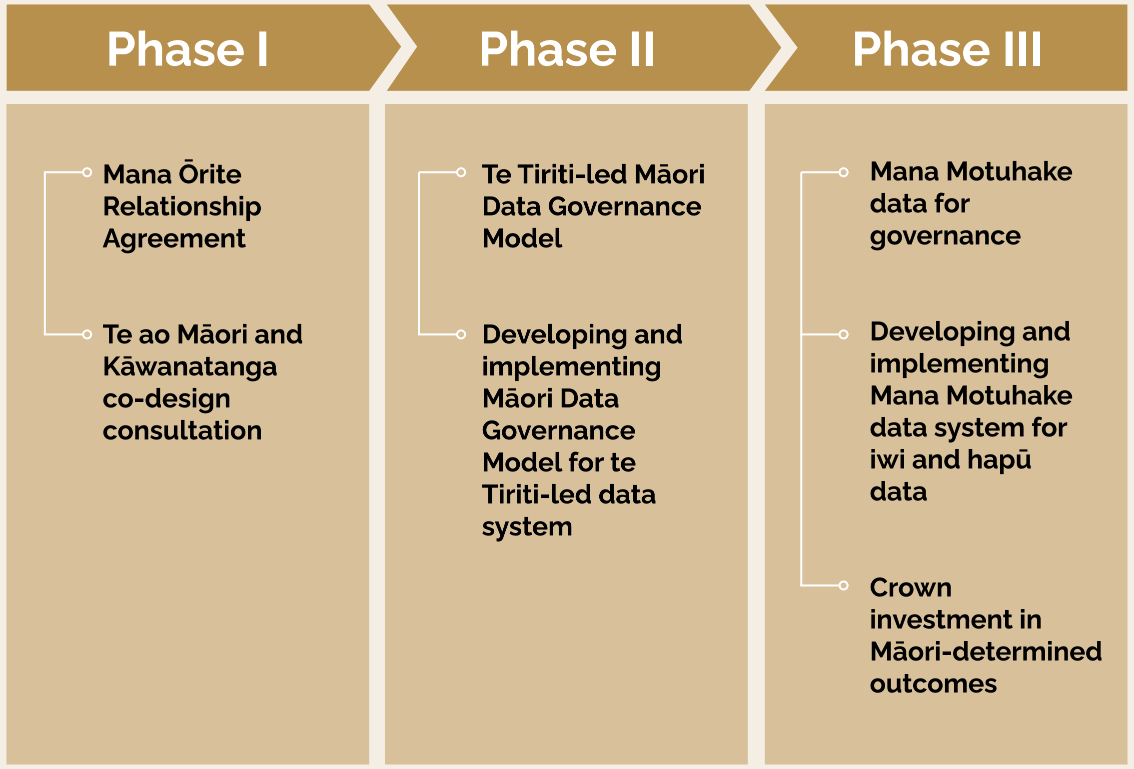
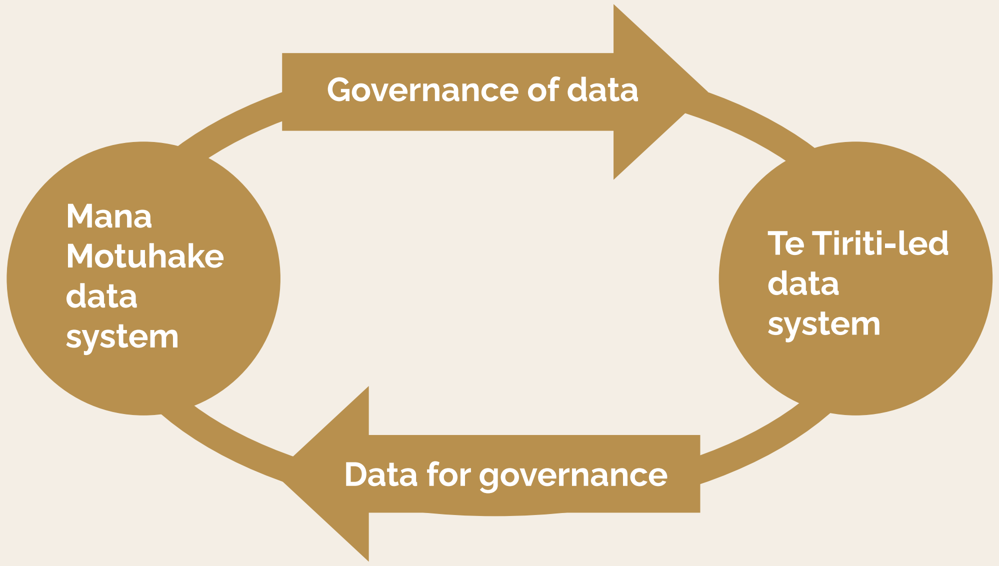


Figure 3:
Governance of data and data for governance



Source:
Adapted from Carroll et al. (2019).

Part 2

The Māori Data Governance Model

Te Tiriti o Waitangi as the Model foundation

Te Tiriti is Aotearoa's constitutional document that establishes and guides the relationship between Māori and the Crown (Cabinet Office, 2019). As the late Moana Jackson (2017) reminds us, te Tiriti is an enduring promise about living in good relation to each other. It is about "the rightness that comes from people accepting their obligations to each other".

The Model is designed to be Tiriti-led, consistent with existing directives that guide policy development across the public service. Te Arawhiti | The Office for Māori Crown Relations has directed the public sector to develop and implement policies that "realise the true promise of te Tiriti o Waitangi". [14] The Public Service Act 2020 requires that the public service support the Crown in its relationship with Māori under te Tiriti. [15] The Cabinet Manual – the authoritative guide to central government decision-making for ministers, their offices, and those working within government – recognises that:

> In some situations, autonomous Māori institutions have a role within the wider constitutional and political system. In other circumstances, the model provided by the Treaty of Waitangi of two parties negotiating and agreeing with one another is appropriate. (Cabinet Office, 2017)

Article 2 of te Tiriti guarantees the protection of iwi and hapū tino rangatiratanga over their taonga which, in a modern context, includes data. In its report into *Claims concerning New Zealand law and policy affecting Māori culture and identity* (WAI 262), the Waitangi Tribunal concluded that te reo Māori and mātauranga Māori are taonga and, as such, the government is required to actively protect these taonga, while also requiring of Māori to actively learn, use, innovate and transmit to future generations. Data includes aspects of mātauranga as well as additional knowledge essential to the ability of Māori to exercise and transmit to future generations whanaungatanga, kaitiakitanga and rangatiratanga.

In its report on *The Comprehensive and Progressive Agreement for Trans-Pacific Partnership* (WAI 2522), the Waitangi Tribunal did not specify which kinds of data are taonga in their own right, but recognised that mātauranga included Māori rights and interests in the digital domain and this placed "a heightened duty on the Crown to actively protect those rights and interests, particularly in a field that is subject to rapid change and evolution" (Waitangi Tribunal, 2021, p. 53). It also recognised that "from a te ao Māori perspective, the way that the digital domain is governed and regulated has important potential implications for the integrity of the Māori knowledge system, which is a taonga" (Waitangi Tribunal, 2021, p. 53).

The Model recognises that Māori data is a taonga, and that some kinds of data may require more specific kinds of active protection given their sensitivity or value and the contexts in which they are used. The Crown's responsibilities with regard to active protection of Māori data include influencing the broader settings within which the private sector collects, stores, uses and shares Māori data.

Cabinet Office guidance suggests a number of questions to guide policymakers on how to factor the Articles of te Tiriti into policy development and implementation. The focus on the Articles of te Tiriti aligns with the distinction in this report between the Mana Motuhake data system (Article 2) and te Tiriti data system (Article 3).

When considering how to incorporate Article 2 considerations into policy development, the guidance suggests the following questions:

1. Does the proposal allow for the Māori exercise of rangatiratanga while recognising the right of the Crown to govern?
2. Have Māori had a role in design/implementation?
3. Does the proposal: i) enhance Māori wellbeing? ii) build Māori capability or capacity?
4. Is there any aspect of this issue that Māori consider to be a taonga?

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[14] https://www.tearawhiti.govt.nz/

[15] Section 14. https://www.legislation.govt.nz/act/public/2020/0040/latest/LMS106159.html

Importantly, the guidance acknowledges that Treaty interests are not confined to resources and taonga that Māori have retained possession of (Cabinet Office, 2019, p. 9).

In considering the incorporation of Article 3 into policy development, the following questions are suggested:

1. Does the proposal aim to achieve equitable outcomes?
2. How does the proposal differ from previous efforts to address the issue?
3. How does the proposal demonstrate that policymakers have looked at the proposal from the perspective of legal values such as natural justice, due process, fairness and equity?
4. How does the proposal demonstrate that policymakers have looked at the issue from the perspective of tikanga values?

The intent of these high-level questions is carried through in guiding questions, situated within each of the eight Data Pou, designed to help decision-makers operationalise the Model (see the section Māori Data Governance Pou).

Model scoping and development

The development of the Model was undertaken by Māori members of the Ohu (Taha Māori). This approach was supported by Taha Kāwanatanga, who recognised that Taha Māori had the expertise to develop the Model, and that their own expertise was best directed at exploring the system enablers and barriers for its implementation.

The Model development comprised three primary steps. The first step involved reviewing the Phase I reports to ensure that the key themes and directives were identified and taken forward into the Model design. This was important as the wānanga undertaken in Phase I captured the voices and aspirations of a wide cross-section of te ao Māori organisations and public service agencies.

The second step was a scoping exercise – involving a review of models, reports and approaches – to ensure that the Model was informed by research and attuned to recent developments and issues. An inclusive approach was taken so that the review included Indigenous, non-Indigenous, governmental and non-governmental data governance strategies, models, codes, frameworks, policies, standards and guidelines, from Aotearoa and internationally (see the Appendix). The scoping exercise helped to identify the range of approaches taken to data governance, especially those involving Indigenous data. In reviewing different approaches, the scope of each initiative, its goals, compliance measures and implementation were noted, along with the level of Indigenous authority and authorising mechanisms.

Taha Māori were also able to meet several times with the FNIGC Data Governance Strategy team to discuss the evolution of their strategy, the challenges and opportunities, and the relevance for the Aotearoa context. Whereas FNIGC is mandated to focus on building First Nations capacity and capability within regions (data for governance), the Model is primarily focused on Māori governance of Māori data held by the government (governance of data). Both approaches are needed in Aotearoa.

Step three involved regular virtual meetings of Taha Māori to identify key elements for the Model based on the consultation and scoping exercise, and to iteratively build it out. During this period, Taha Kāwanatanga undertook its own scoping exercise to identify enabling roles and mechanisms for the implementation of the Model, and to discuss it with the wider Crown Thought Leadership Group.

How to use the Model

The Model is purpose-oriented and future-focused. It comprises:

- a high-level **Vision**, describing the unique objective that the Model aspires to achieve
- **Desired Outcomes**, which are the measurable goals
- five **Values**, which are integrated throughout the Model and frame the directives described under each of the eight Data Pou. The directives focus on the actions, processes and activities that give effect to the Values
- an **Authority layer**
- eight **Data Governance Pou** (pillars),[16] with exemplars (best practice) and examples provided within each Pou
- action points, and
- guiding questions.

The Model is intended to be holistic and is designed with the intent that all of the directives under each Data Governance Pou are implemented so as to drive agencies towards the Vision and Desired Outcomes. This means, for example, that an agency should not focus only on investing in data collection and ignore data protection.

The Model should assist all agencies to undertake MDGov in a way that is values-led, centred on Māori needs and priorities, and research-informed. As the Model is focused on system change, it is necessarily high-level – it does not and cannot prescribe a step-by-step approach to data governance across the data life cycle in a 'one size fits all' approach. Agencies will need to operationalise the Model in a way that makes sense in their own context. Some agencies will be well positioned to take steps to implement the Model, while others will need guidance and specific kinds of support from the Government Chief Data Steward (GCDS) as functional lead of the government data system.

The Authority layer is crucial to the implementation of MDGov. Without the right mechanisms in place, the Model risks being diluted to voluntary guidance, which would fail to bring about the changes needed. Some of the changes identified in this report can be implemented promptly, while others, particularly legislative change, are longer-range goals. While the Model's focus is the public service, many of its components will also be more broadly applicable to the public sector as a whole, including universities. The Model is also designed to cover third-party services and procurements to government including AOG Cloud Service Framework providers and AI technologies (e.g., facial recognition tools). The principle of active protection requires the Crown to act, to the fullest extent practicable, to protect taonga, including data.

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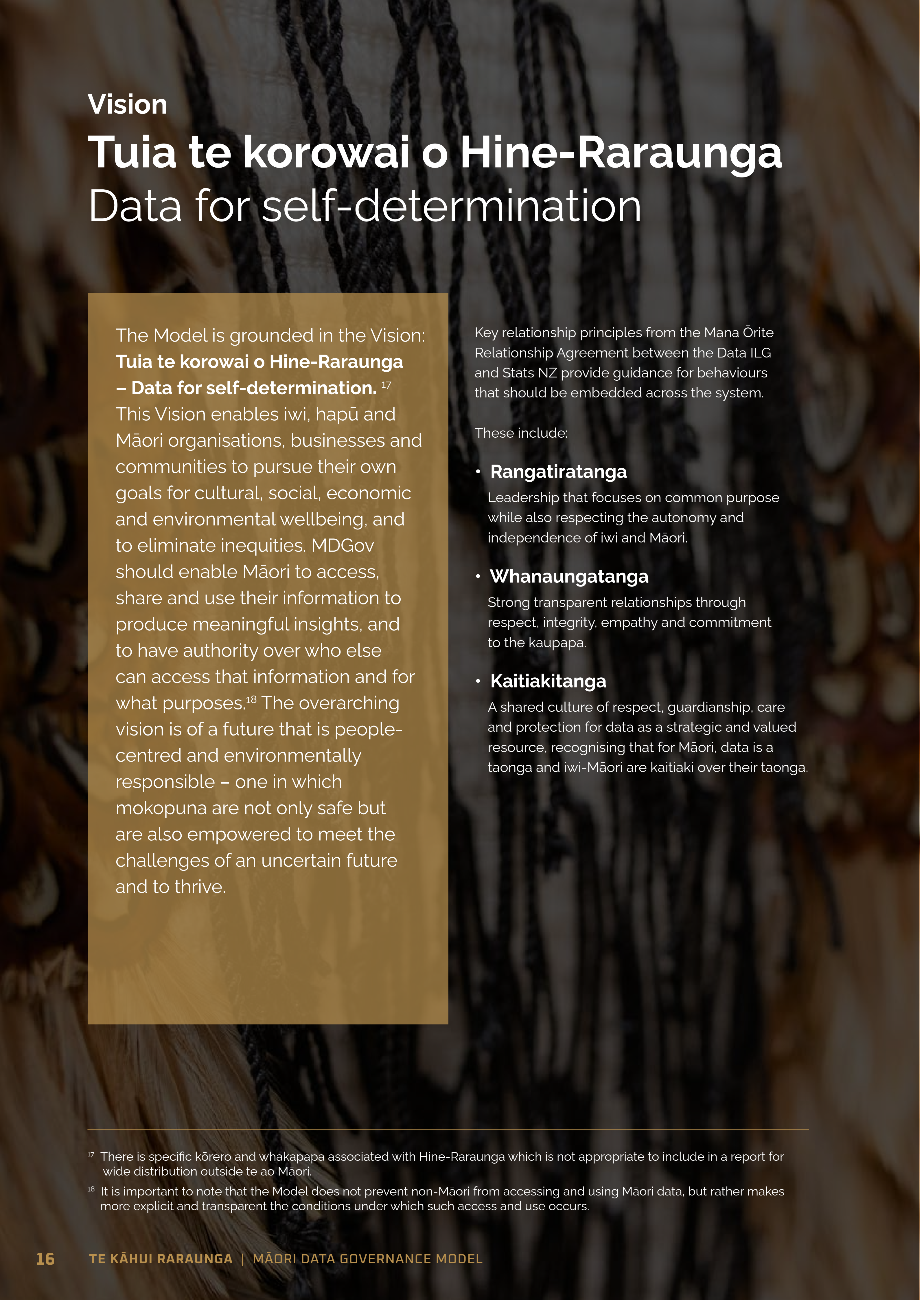
[16] We acknowledge the inspiration provided by the First Nations Data Governance Model and discussions with the FNIGC team.



Vision

Tuia te korowai o Hine-Raraunga

Data for self-determination

The Model is grounded in the Vision: **Tuia te korowai o Hine-Raraunga – Data for self-determination.** [17] This Vision enables iwi, hapū and Māori organisations, businesses and communities to pursue their own goals for cultural, social, economic and environmental wellbeing, and to eliminate inequities. MDGov should enable Māori to access, share and use their information to produce meaningful insights, and to have authority over who else can access that information and for what purposes.[18] The overarching vision is of a future that is people-centred and environmentally responsible – one in which mokopuna are not only safe but are also empowered to meet the challenges of an uncertain future and to thrive.

Key relationship principles from the Mana Ōrite Relationship Agreement between the Data ILG and Stats NZ provide guidance for behaviours that should be embedded across the system.

These include:

- **Rangatiratanga**

  Leadership that focuses on common purpose while also respecting the autonomy and independence of iwi and Māori.

- **Whanaungatanga**

  Strong transparent relationships through respect, integrity, empathy and commitment to the kaupapa.

- **Kaitiakitanga**

  A shared culture of respect, guardianship, care and protection for data as a strategic and valued resource, recognising that for Māori, data is a taonga and iwi-Māori are kaitiaki over their taonga.

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[17] There is specific kōrero and whakapapa associated with Hine-Raraunga which is not appropriate to include in a report for wide distribution outside te ao Māori.

[18] It is important to note that the Model does not prevent non-Māori from accessing and using Māori data, but rather makes more explicit and transparent the conditions under which such access and use occurs.

Desired Outcomes

The Desired Outcomes connect the Vision and the specific directives that focus on actions, processes and activities within each of the eight Data Governance Pou. The Desired Outcomes describe the states that the Model should contribute to if implemented with the right structures, support and resourcing. The focus is on collective benefits and system impacts that are meaningful and achievable. The Desired Outcomes support the National Iwi Chairs Forum's five priority domains – especially pou tangata (people) and pou tahua (economic) – as well the Government's wider focus on lifting national wellbeing and living standards (New Zealand Treasury, 2018).

- **The right services, at the right time, in the right way**

  Individuals and whānau rely on a wide range of social and economic services to go about their lives and need to be able to access the right services, at the right time, in the right way. Data and data systems are crucial for enabling this to happen. Individuals should never be in a position where they are *forced* to give up data in order to access necessary services.

- **Better shared and autonomous decision-making**

  The goal is for a data system that enables insights that are timely, relevant and responsive to the priorities and needs of Māori and the Crown. This will support both shared and autonomous decision-making and go some way to addressing current power imbalances. Data disaggregation should reflect units of analysis that are important in te ao Māori.

- **A trusted and safe data system**

  All individuals and communities in Aotearoa should be able to participate in a data system that is safe and trustworthy. This is particularly important for those who are most likely to experience some form of harm through data misuse or system failures. Citizen safety should be privileged.

- **Data to drive iwi-Māori economies**

  Iwi-Māori economies are diverse and have collective dimensions that are unique to te ao Māori. The data and services needed to power their insights, activities and decisions may differ from those of non-Māori entities and organisations. Data and data systems should be reshaped to support thriving iwi-Māori economies and collective wealth generation.

- **Supporting whānau to flourish**

  Whānau are the heart of te ao Māori. Data and data practices need to accurately reflect whānau lives and circumstances, and support them to live in ways that are meaningful to them.

- **Reaffirming and strengthening connections to identity, place and te reo Māori**

  Whakapapa is central to Māori identity, connecting people and place in ways that provide a crucial sense of belonging and connection – a sense of home. Data and digital innovation should be built on values that allow us all to be in good relations with each other, our environments, and our language and culture.

Guiding Values

The five guiding Values described in this section are an expression of tikanga as it pertains to Māori data governance (MDGov). As tangata whenua, Māori have an interest in data practices and systems that are ethical, environmentally sustainable and tika for all data that is generated in or resides in Aotearoa, not just Māori data. The Values below are expressed in English to avoid confusion with the uaratanga that guide the Mana Ōrite agreements, [19] and to be readily accessible to target users within the public service. Each of the Values makes an important contribution to MDGov and the Values are integrated throughout the Model. The Values are intended to work together to guide practice to achieve the Vision of 'Tuia te korowai o Hine-Raraunga' – Data for self-determination.

- **Nurture data as a taonga**

  Data is often described as the world's most valuable resource – a commodity to be extracted, used and reused. By contrast, Māori data is a taonga tuku iho – an ancestral gift – which requires active protection and careful nurturing for the benefit of individuals and collectives, now and in the future.

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[19] See also the values in the Government Data Strategy and Roadmap 2021: https://www.data.govt.nz/docs/data-strategy-and-roadmap-for-new-zealand-2021/

- **Be accountable**

  Data is relational – all data comes from somewhere or someone. With relationships come responsibilities and accountabilities. Agencies and organisations that hold Māori data must be willing to be held to account, and to be answerable for the decisions made and actions taken.

- **Put iwi-Māori data in iwi-Māori hands**

  Māori data, including iwi and hapū data, should be put in Māori hands in ways that are tika, and that keep both data and people safe. This requires agencies to implement a Māori-created definition of what Māori data is, understand and uphold the relationships that connect Māori data to iwi-Māori rights-holders, resource technologies that enable the transfer of Māori data to Māori, and remove the barriers that prevent Māori from accessing and using their data.

- **Use data for good**

  Data should support transformative outcomes and should uplift and strengthen our relationships with each other and with our environments.
  The avoidance of harm is the minimum expectation for data use. Māori data should also contribute to iwi and hapū tino rangatiratanga.

- **Decolonise data systems** [20]

  Decolonisation requires the cessation of practices that exploit and extract from Indigenous land, life and knowledges. The decolonisation of data involves dismantling the structures that perpetuate the dispossession of Māori and Māori data, while shifting the locus of control over Māori data back to Māori.

Authority

To achieve real and lasting system impact and change for individuals and communities, the Model must have effective levers of authority vis-à-vis the right roles, responsibilities, policies and legislative settings. This will require significant changes to current practices and system structures to ensure that Māori authority over Māori data can be effectively exercised through system leadership. This will also require a commitment to MDGov funding that is right-sized and enduring.

This section sets out te ao Māori expectations and options for meaningful authority mechanisms and implementation.

Te ao Māori data leadership

There is ample evidence that dedicated MDGov system leadership is needed. Many agencies struggle to meet their Tiriti and partnership obligations in data and digital domains (see, for example, challenges with regards to implementing the Algorithm Charter (Taylor Fry, 2021)). This is largely due to internal capacity and capability issues (New Zealand Government, 2021; Taylor Fry, 2021).

Phase I of the co-design process identified wide support for new initiatives and investment to support te ao Māori data leadership, including the option of a Chief Māori Data Steward (CMDS). The CMDS could support the implementation of MDGov across all of government, building on Mana Ōrite agreements, as well as support the development of a Mana Motuhake data system. There would need to be a commitment to ongoing resourcing to support the development and implementation of MDGov across government, including building capacity and capability. The CMDS could also monitor how agencies act in accordance with the Model, including holding agencies to account for breaches of MDGov or data misuse, as well as system leadership in ensuring that investment flows towards the right areas of infrastructure and workforce development. The CMDS could also develop policies and set expectations for how the private sector – including multinationals – interact with and use Māori data.

The CMDS should have clear and meaningful authorising mechanisms, and the necessary resourcing and support to achieve the equivalent capacities of the GCDS. The GCDS holds the functional leadership role for data across government and sets the strategic direction for the government's data management, leads Aotearoa's state sector's response to new and emerging data issues, leads the Government's commitment to accelerating the release of open data (Stats NZ, 2018), and oversees the Data Stewardship Framework to enable agencies to manage data as a strategic asset and benchmark their data maturity. [21] The Public Services Commissioner assigns all of the functional leads for Aotearoa.

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[20] See, for example, the work of the Digital Freedom Fund with regards to decolonising data, particularly in relation to data infrastructure: https://digitalfreedomfund.org/decolonising-data/

[21] https://data.govt.nz/leadership/gcds/

The GCDS role has historically been assigned to whoever holds the chief executive role at Stats NZ, but the Commissioner has the power to determine which department holds the functional leadership role. The CEO (and current GCDS) is also the Government Statistician (GS) – a role with a legislative mandate through the Data and Statistics Act 2022 (and previously the Statistics Act 1975).

In developing te ao Māori data leadership, there is a timely opportunity to bring data and digital closer together. Currently the GCDS and the GCDO (Government Chief Digital Officer) sit within different agencies. The GCDO, who is also the chief executive of the Department of Internal Affairs, is responsible for setting digital policy and standards, improving investments, establishing and managing services, developing capability and system assurance. Several of these areas are covered by the Model (e.g., cloud services and offshoring) and it makes little sense to silo them. Any new Māori role would thus need to have a significant digital component and a dual mandate to exercise leadership over data and digital. These twin pillars of data and digital would catalyse innovation to drive towards better outcomes for Māori, including new possibilities for value creation and benefit sharing.

To realise the potential of MDGov would also involve leadership to catalyse investment and action towards a Mana Motuhake data system and supporting hapū, iwi and Māori organisations to exercise tino rangatiratanga over their data. In addition to the CMDS, the most effective vehicle to progress MDGov might be to establish an Independent Statutory Entity or Independent Crown Entity rather than simply assign another functional leadership role within existing departments. [22] Funding should be equitable, recognising the historic and continuing imbalances in power and resources of government and Māori data systems. Structure, form and accountabilities should reflect tikanga processes rather than mimic existing government roles and structures. Governance arrangements should prioritise accountabilities and connections to te ao Māori.

The development and implementation of a Māori data classification framework (see Data Pou 8), and Māori data standards (see Data Pou 7) is essential. The latter could be readily enabled, for application across government, through the standards and guidance provisions in the Public Service Act 2020. Under section 57, subject to Ministerial approval, a system leader may set standards relating to the particular subject matter that they lead and co-ordinate, and chief executives must ensure that their agencies implement the standards that apply to them. In addition, a system leader can also issue guidance on a subject matter that then applies to all public service departments and department agencies. There are currently four mandated standards: date of birth; person name; street address; gender and sex. Mandated standards for ethnicity, iwi affiliation, Māori descent and Māori business have been identified for future development. [23]

Policies

There is a suite of possible policy options that might be used to achieve MDGov and give effect to the implementation of the Model and its strategic outcomes. Phase I clearly showed that Māori are seeking far more than voluntary principles and guidelines, and there is no appetite for yet more advisory committees. In addition to the standards and guidance noted above, policy options to support MDGov might include:

- prohibitions (e.g., a ban on offshoring particular kinds of Māori data)
- public transparency (e.g., public registers of MDGov breaches and or data harms)
- impact assessments (e.g., assessing privacy impacts through a tikanga lens)
- audits and regulatory inspections
- procurement conditions (e.g., cloud services for Māori data).

Agencies could also be supported to implement the Model through incentives such as resourcing.
In key agencies, MDGov key performance indicators (KPIs) could be included in chief executive performance agreements and KPIs, and MDGov compliance could also be considered as part of The Treasury assessment of Budget bids.

Laws

When it comes to data and data privacy, the law in digitally advanced countries has largely failed to keep up with technology and uses, and governments have struggled to exercise jurisdiction

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[22] Existing Independent Statutory Entities include Te Matāwai and Te Aka Whai Ora | Māori Health Authority. They are distinct from Independent Crown Entities such as the Criminal Cases Review Commission and Privacy Commissioner. All statutory entities require establishment legislation.

[23] https://data.govt.nz/toolkit/data-standards/mandated-standards-register/

over Big Tech and other multinationals when issues have arisen over misuse of data, the distribution of harmful content, and privacy breaches. In Aotearoa, several laws are relevant to MDGov and the protection of Māori data, including:

- **Data and Statistics Act 2022** – in particular, section 14, which sets out the duties of the GS in relation to te Tiriti. Under the Act, the GS must recognise the interests of Māori in the collection of data, production of statistics, and access to and use of data for research as tools for furthering the economic, social, cultural and environmental wellbeing of Māori (including iwi and hapū), and the way in which data is collected, managed and used for the production of official statistics and for research. The GS must also foster the capability and capacity of Māori to collect and use data for the production of statistics, access and use data under the Act for research, and engage with the GS under the Act.
- **Privacy Act 2020** – section 21c requires that the Privacy Commissioner take into account cultural perspectives on privacy. The Act also gives the Commissioner the power to issue a code of practice in relation to the information privacy principles that underpin the Act; [24] thus, there is an opportunity for a Māori information code or Māori data privacy code.
- **Public Service Act 2020** – section 14 requires that the public service support the Crown in its relationships with Māori under te Tiriti including developing and maintaining the capability of the public service to engage with Māori and understand Māori perspectives.
- **Digital Identity Services Trust Framework Bill** – section 8A gives effect to the principles of te Tiriti, largely in relation to the form and functions of a Trust Framework board and Māori Advisory Group.

While the Data and Statistics Act 2022 and Public Service Act 2020 have Tiriti provisions, there is no existing legislation that provides for the full expression of Māori data rights and protection. This is likely to create ongoing issues as Māori seek to have existing legislation amended to address specific data issues or concerns. The challenge and opportunity is to develop sui generis legislation that more fully provides for a full expression of MDSov. Aotearoa already has the innovative example of Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 granting legal personhood status to the Whanganui River (Ruru, 2018). MDSov legislation would be world leading and provide an influential example for other countries attempting to build high-trust, people-centred data systems.

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[24] A code of practice may: (a) modify the application of one or more of the IPPs by (i) prescribing more stringent or less stringent standards and/or (ii) exempting any action from an IPP, either unconditionally or conditionally; (b) apply one or more of the IPPs without modification; and (c) prescribe how one or more of the IPPs are to be applied or complied with. There are currently codes relating to Civil Defence national emergencies (information sharing), credit reporting, health information, Justice sector unique identifiers, superannuation schemes unique identifiers and telecommunications information.

Māori Data Governance Pou

The Model is organised around eight Data Pou which are the building blocks that represent priority areas of action. Each Pou defines a critical area of data governance and specifies a set of directives about actions that should be undertaken to realise the Model's Desired Outcomes in ways that are consistent with the Model's Values.

As illustrated in the Framework (Figure 4), the Authority layer sits above all of the Data Pou as the system-level authorising mechanism. Pou 8 (Data Classification) is cross-cutting as it is a critical enabler of the work of all the other Data Pou (1–7), enabling MDGov to be operationalised in a consistent and integrated way.

Each Data Pou is detailed in this section. The intention is not to cover every aspect of a Pou, but rather to identify key priorities and actions. Where appropriate, the section details the competencies, expertise and tools needed to achieve impact, as well as practices that need to stop. Some of the key actions can be undertaken at the agency level, while others will require a more co-ordinated system leadership role.

The absence of a data ethics Pou is intentional. Organisations and agencies generally use data ethics to build trust with those providing data (including the public), comply with regulations, and guide decision-makers to use data in fair and responsible ways. Here, the five core Values together serve as the Model's ethical foundations and are integrated throughout the Model. This approach also reflects a wider relational view of ethics that encompasses the development and maintenance of good relations between Māori and the Crown, between people and the environment, and between individuals and the collectives of which they are a part.

The Model does not contain a data maturity assessment tool, but the design and section content provide a ready foundation for agencies to assess their own organisation's Māori data governance maturity with respect to each Data Pou and MDGov overall. [25] This would help agencies better understand their strengths and gaps and prioritise action and time frames. A consistent approach to assessing MDGov maturity across the sector is desirable and could be supported by the functional leadership role of the GCDS.

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[25] For example, for each Data Pou, agencies could be assessed as new, proficient or expert.

Figure 4:
The Māori Data Governance Model

Vision

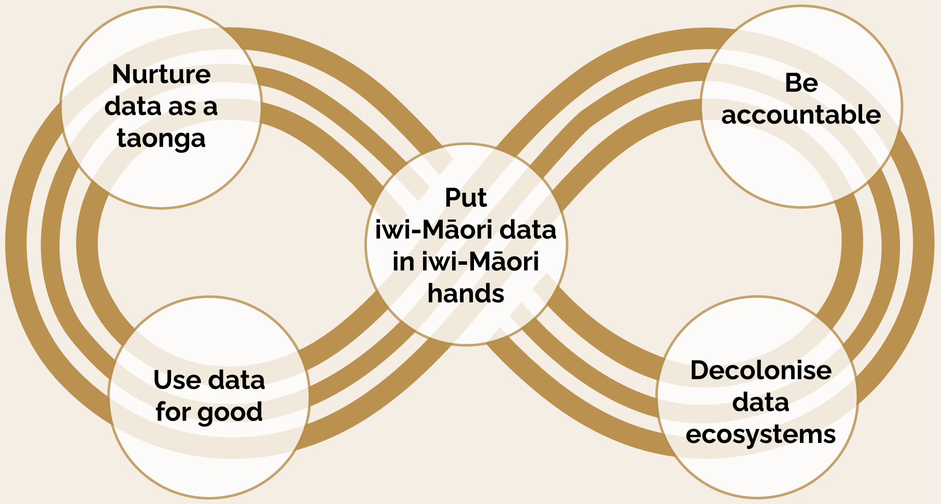
Tuia te korowai o Hine-Raraunga
- Data for self-determination

This vision enables iwi, hapū and Māori organisations, businesses and communities to pursue their own goals for cultural, social, economic and environmental wellbeing and to address inequities.

Desirable Outcomes:

- The right service, at the right time, in the right way
- Better shared and autonomous decision-making
- A trusted and safe data ecosystem
- Data to drive iwi-Māori economies
- Supporting whānau to flourish
- Reaffirming and strengthening connections to identity, place and te reo Māori

Values



Māori authority over Māori data

Data Pou

1 Data capacities and workforce development

2 Data infrastructure

3 Data collection

4 Data protection

5 Data access, sharing and repatriation

6 Data use and reuse

7 Data quality and system integrity

8 Data classification

Pou 1

Data capacities and workforce development

The successful implementation of a Tiriti-led government data system requires investing in data and digital capacities and capabilities. Agencies not only require a clear understanding of their data maturity level in general (Taylor Fry, 2021; Thomas et al., 2019), but also their maturity with regards to nurturing Māori data.

The government data system is far better resourced and supported than te ao Māori and thus has a broader range of skills and capacities. Even so, major knowledge and skills barriers exist, and these require a broader strategy than a narrow focus on building skills in data analytics.

Te ao Māori has technical expertise and data leadership, but resources are stretched and capacities are limited due to sustained under-investment. Many iwi and hapū cannot afford to build the human and technological capacities to access, hold and use their data to generate the full benefits from it. Strategic investment in different kinds of capacities and capabilities is needed. For the government, the emphasis should be on creating an organisational culture that nurtures Māori data as a taonga tuku iho so as to support Māori wellbeing aspirations in meaningful ways. At a minimum, this should include anti-racist and decolonial ways of working with data. For te ao Māori, the focus should be on resourcing Māori to lead the development and training of a sustainable Māori workforce that leverages community expertise and supports diverse kinds of Māori data capabilities.

1.1
Implement anti-racist data practices

Given the strong focus on evidence and data-based policy making within the public service, agencies should be able to recognise and avoid what Palawa scholar Maggie Walter calls *"BADDR" data.*[26] In Aotearoa, this means data and data practices that:

- **B**lame Māori by directly or indirectly situating the dominant group as the ideal group, and/or Māori as being culpable for their poorer outcomes.
- **A**ggregate data in ways that misrepresent or miss key aspects of Māori identities and lifeworld.
- **D**econtextualise data, by focusing on Māori individuals and families outside of their social and/or cultural context, and is
- **D**eficit-based, implying that Māori are inherently deficient.
- **R**estrict access to Māori data under the control of statistical agencies and official institutions.

The lack of diversity within data-related fields means that most analysts and advisers who work with Māori data will not be Māori, or necessarily have an understanding of te ao Māori (Taylor Fry, 2021). They may see data as largely neutral and fail to recognise how their own social positioning affects how they think about and use Māori data. They may also be unaware of racial biases in the data and the harms that can arise from its uncritical use, even if that harm is unintended. Institutional habits in the form of ingrained actions and responses may also create "excess labour" for Māori working in data-related fields (McAllister et al., 2022), who are not only severely under-represented, but also expected to carry out cultural labour for the organisation outside of their specific role.

BADDR data practices find particularly fertile ground when marginalised populations are singled out as problematic. Take, for example, the Integrated Data Infrastructure (IDI) stewarded by Stats NZ.[27] The IDI is a

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[26] Walter (2016); Walter et al. (2021).

[27] Stats NZ is legally mandated to collect, store and operationalise administrative data on behalf of the Government and its agencies. A growing number of administrative data sets are linked and used within the IDI.

large research database that holds de-identified microdata about people and households. Stats NZ states that "researchers use the IDI for research in the public interest to improve outcomes for New Zealanders." [28] More than 1000 projects have used Stats NZ microdata, including numerous projects that have focused on Māori outcomes. [29] However, the IDI does not exist solely to cater to researchers' needs and interests. One of the reasons for establishing the IDI was to support government goals to target investment in policy areas that could produce longer-term fiscal returns, including crime reduction, welfare support reduction, and early intervention for vulnerable children. Many of the early IDI projects focused on 'at risk' children and young people and "the ways in which their caregivers, whānau and communities supposedly amplified these risks" (Atatoa Carr et al., 2021). Māori were over-represented among the children and whānau identified as being in need of intervention.

To recognise and halt BADDR data practices, agencies need to be culturally safe as distinct from culturally competent (Curtis et al., 2019; Ramsden, 2002). Cultural safety grapples with issues of power and exploitation, while *cultural competency* tends to be concerned with cultural proficiency and sensitivity. Cultural safety training enables organisations to critique their own power structures, cultures and cultural systems, which are often taken for granted. In the context of Māori data, this means understanding the impact that agency practices have on what is defined as data, what data is collected, and how such data is used and interpreted. It includes being able to identify and avoid data practices that exploit and/or stigmatise Māori, and indeed any other marginalised group.

Organisations should begin with a self-review of current data practices at a system and organisational level. This review should assess whether expectations of cultural safety in data are being met, and identify a plan for improvement and development. Instituting anti-racist data practices will require significant change from current data approaches.

Example:

Children at Risk: Deficit analysis

In 2010 the Ministry of Social Development produced a report on a project seeking to identify the proportion of adult offenders with sentences managed by the Department of Corrections who had had any degree of contact with Child, Youth and Family for care and protection and/or youth justice concerns.[30] A key focus of the analysis was to quantify the fiscal burden caused by children and young people who had interacted with both care and protection services and the justice system. Although the report recognised the benefits of early intervention and prevention, the primary motivation was to address the high cost of lifetime offenders for the government through more effective and efficient targeting of resources.[31] As the report noted, "Investments targeted to children and young people could provide government with significant value for money." Case notes and broader contextual information were not included in the analysis. The overarching focus was on identifying crossover costs and children who were at risk of becoming "high-cost, high-harm" clients.

This project provides an example of BADDR data in that it involves data analysis that is both deficit-based and decontextualised. The narrow focus on data about individuals' contact with the justice system and the resulting cost means that there is no scope for placing individuals within the wider context in which they are born, grow and live, and the forces and systems shaping their daily lives. The well-documented correlates of crime, including mechanisms of exclusion and the accumulation of system failures, are ignored in favour of a highly individualised focus. Such a narrow focus tends to reinforce an individualistic view of crime and crime prevention whereby costly individuals are the problem to be solved and early intervention into children's lives is the solution.

Although the models did not include an ethnic identifier, the marked over-representation of Māori in the youth and adult justice sector means that Māori feature disproportionately in the data, and the resulting analysis. This example is an illustrative one because it shows that data practices need not be explicitly racist to be BADDR. It also illustrates how BADDR data practices can potentially have an impact on the lives of Māori individuals and whānau, even without the use of an explicit ethnic identifier.

1.2

Invest strategically in Māori data and digital expertise and leadership

Growing and accelerating Māori data and digital capacities and leadership is a key success factor for MDGov. The youthful Māori population structure, coupled with the rapid ageing of the New Zealand European population, volatile migration flows and tight labour markets, means having an agile and adaptable Māori data and digital workforce is in the national interest. Increasingly, rangatahi are proficient users and creators of new technologies and data. With the right support, they are well placed to lead future digital kaupapa. Rangatahi can develop data and leadership skills through designing and participating in kaupapa that matter to them.

Essential capacities are both skills-based and knowledge-based. They range from digital literacy – which covers a wide range of competencies – to the specific technical expertise required to collect, access and use Māori data, and build and maintain the architecture for a Mana Motuhake data infrastructure. This is not about simply increasing the number of Māori in the data workforce as it is currently configured or training more Māori in data analytics, particularly if there are issues around cultural safety and labour. Rather, it is about developing a different data workforce where the knowledge, skills and training are closely linked to Māori values, tikanga and kaupapa. There are many opportunities to centre and amplify the experiences and knowledge of those who are rooted in their communities, and who are most affected by data and digital technologies.

To ensure sustainability, training and employment opportunities should be future-focused and aim to develop a Māori data workforce with diverse knowledge, life experiences and skills. This includes supporting Māori communities and whānau to continue to be kaitiaki of data that they value, with a particular focus on highly sensitive or valued information such as whakapapa, genetics and genomics data, and mātauranga relating to people, place, identity and culture. The latter are more suited for development within a Mana Motuhake data system that enables distributed and decentralised modes of data sharing and access, and where enduring kaitiaki relationships to people and place provide a pre-existing framework for data stewardship and innovation.

Exemplar:

Te Mana Whakatipu | Iwi data collection

Te Mana Whakatipu is an innovative iwi-led data collection initiative focused on building iwi data capacity and capability. Following the failures of the 2018 Census, [32] the government set aside targeted funding for data collection and building analytics capability to assist iwi to collect responses to the 2023 Census in two geographic areas. Te Mana Whakatipu supports iwi to shift from data producers and consumers to data designers, by developing iwi capabilities in high-quality large-scale data collection. The programme is also expected to increase response rates to the 2023 Census in communities where iwi lead the collection and provide a foundation for building collaboration and co-design between iwi, Stats NZ and the Crown. The iwi data analytics capability and capacity development aspects of the programme are focused on:

- *Workforce development* – training and development including short courses, scholarships, cadetships, micro-credentialing and staircasing into qualifications.
- *Good data governance* – short programmes, workshops and seminars to increase iwi governance expertise in effective data governance.
- *Digital development* – supporting the development of, for example, Te Whata to ensure wider portability and application, and other digital mechanisms that open up access to data sets for analytical purposes.
- *Iwi collectives and the census* – direct investment into supporting data analytical capability development in relation to census data by the iwi collectives undertaking the collections component of the programme.

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[28] https://stats.govt.nz/integrated-data/integrated-data-infrastructure/#how

[29] https://cdm20045.contentdm.oclc.org/digital/collection/p20045coll17/search

[30] Centre for Social Research and Evaluation, Ministry of Social Development (2010). *Crossover between child protection and youth justice, and transition to the adult system.* We note this example is not an isolated one. See, for example, the Ministry of Social Development's *Top 10,000 clients – social sector costs* work which describes analysis of 10,000 clients with the highest lifetime costs across two or more parts of the social sector. https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/research/top-10000/index.html

[31] The introduction to the report states that it: "identifies the disproportionate cost to the Department of Corrections of adult offenders that have come to the attention of Child, Youth and Family as children and young people; and indicates the potential value of early intervention. It also identifies some early warning indicators that are associated with a transition to adult offending."

[32] Jack, M., & Graziadei, C. (2019). Report of the independent review of New Zealand's 2018 census. New Zealand Government. https://www.stats.govt.nz/reports/report-of-the-independent-review-of-new-zealands-2018-census

Two iwi collectives – the Ōhua collective, comprising the Far North iwi and the Toitū Tairawhiti iwi collective, and Te Whānau a Apanui – are participating in the pilot. For Stats NZ, it has meant releasing control to iwi collectives to deliver a field-collections response based on proven models of iwi engagement, including those used in the COVID-19 pandemic response. It is the first time that Stats NZ has enabled iwi to lead and be responsible for elements of an official statistical exercise. The agency has also provided access to tools and resources.

Exemplar:
Te Pu-a-nga Maara | Flax roots data warriors

Te Pu-a-nga Maara is an exemplar of 'flax roots' data leadership that uses data in smart, ethical ways to support the wellbeing of communities and the environment. The rōpū of young environmental leaders from Makaurau Marae, Manurewa Marae and Papatuanuku Kokiri Marae in South Auckland are on a mission to engage, educate and empower future taiao innovators. Environmental data is central to their vision. Te Pu-a-nga Maara build and test cheap water testing technology, fly drones for surveying, and work on Māori-run maara kai that distribute food to the local community. The water testing kits they build examine the presence of nitrates and other contaminants in local water bodies, and serve as an educational tool to inform children about the environment.

Te Pu-a-Nga Maara trains young Māori to collect and manage data on their own lands for future generations and the data they collect is stored in databases that they control. The mission is to accumulate data that can build on top of existing Māori environmental models, especially maramataka, and contribute to the future development of these models. Their food redistribution work also requires logistical tools which could be further developed with more resources.

Key actions

- Review current data practices at an organisational level and assess whether expectations of cultural safety in data are being met. Develop a plan for improvement and development to ensure employees who work with Māori data receive adequate training to promote compliance with the Model.
- Identify opportunities to support the training of a diverse Māori data and digital workforce, either within the organisation or externally.

Guiding questions

- What is the capability of this organisation to govern, manage, use and interpret Māori data in culturally safe ways? This capability could be assessed as new, proficient or expert. [33]
- What roles and responsibilities are needed to ensure culturally safe data practices?
- What BADDR data practices currently occur within this organisation?
- What processes need to be introduced to prevent BADDR data practices in the future?
- How can this organisation accelerate the growth and development of Māori data and digital leadership?

Relevant documents

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[33] The Data Capability Framework (DCF) guide suggests assessing agency capability in terms of new, proficient or expert. https://www.data.govt.nz/assets/Uploads/Training/Data-Capability-Framework/Data-Capability-Framework-Guide.pdf

Pou 2
Data infrastructure

Just as physical infrastructure like roads is important for the operation of a society, and the functioning of essential services and facilities, so too is data infrastructure. Data infrastructure includes the hardware, software, networking, services, policies and so forth that enable data consumption, storage and sharing.

To serve communities, data infrastructure needs to be flexible, scalable and interoperable, and offer technology options that power choices close to where decisions are made, including outside of government. As the COVID-19 pandemic and recent extreme weather events have shown, these functions are especially important in times of crises.

2.1
Data infrastructure that works for Māori

Government data infrastructure must be fit for Māori purposes, rather than continuing to be solely oriented to meeting agencies' priorities. Māori, as a Tiriti partner, should be involved as shared decision-makers in policy-setting and system-level decisions regarding the development of any new government data infrastructure that affects Māori data. This means shared decision-making about ongoing investment in data infrastructure, changes or refreshed approaches, and expansion or new applications of existing infrastructure (e.g., the IDI). It also includes shared decision-making about decommissioning and disinvestment in harmful and unethical data infrastructures. Beyond government data architecture, there are also many opportunities to invest in and support the development and scaling up of Mana Motuhake data infrastructure across all aspects of the data life cycle.

Exemplar:
Te Whata

Launched in 2020, Te Whata (https://tewhata.io/) is a web-based data platform that has been tailored specifically by iwi for iwi. It is a digital version of a whata, a storehouse of sustenance. Designed and operated by Te Kāhui Raraunga, and built by private sector consultants, Te Whata provides access to aggregated data sets for 100+ iwi and iwi-related groups in the Iwi Classification.[34] The public-facing portal contains an easy-to-navigate dashboard of social, economic, cultural and environmental indicators populated with iwi data from the 2013 and 2018 censuses, Ministry of Education, Te Kupenga Māori social survey, and other health and social data. The 2018 Census was controversial as Stats NZ missed more than 30 per cent of the Māori population and had to backfill the Census data set with other government data. This meant some variables, including iwi affiliation, were of low quality and thus of limited use. To rectify the situation, Data ILG technicians worked with Stats NZ methodologists to develop statistical methods to produce iwi estimated counts for 2018 and make them available through Te Whata.

Te Whata also allows iwi information managers to log in and customise the data to align with their strategies and goals, and to write reports and narratives that reflect their specific identities, priorities and circumstances. During the COVID-19 vaccination rollout, Te Whata was able to provide iwi with access to meshblock-level vaccination data for Māori, provided by the Ministry of Health. Iwi were able to use the data to inform their vaccination outreach campaigns and to make real-time decisions about which streets to focus their efforts on.

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[34] Stats NZ (2017). *Iwi classification*. https://www.stats.govt.nz/consultations/iwi-classification-update/

2.2
Go DaD (Distributed and Decentralised)

Centralisation is a common feature of tech infrastructure. It involves the collection of vast amounts of data in centralised data repositories overseen by a 'trusted' agent, whether that is a government or a corporation. The resulting data repository – usually a data lake – houses all organisational data and is treated as the organisation's 'ground truth'. One of the challenges facing governments is that the trust required for these large repositories to function is declining, amid concerns about the ways that such data infrastructure centralises power.

By contrast, *decentralisation* is a process for breaking down large, trust-dependent hierarchical structures and pushes the information outward, closer to the users. This improves user autonomy and builds trust in the system as users have more direct control over their information. Decentralisation – data meshes versus data lakes – is the trend for data science now.

Distributed models implement decentralisation by assembling a looser structure of independent agents with protocols in place for communication and sharing of information. Here, distributed systems are not a shorthand for blockchain and similar technologies with a heavy environmental footprint. Rather, they refer to the need to build processes that acknowledge the autonomy of many independent organisations, sharing data as needed and instilling trust by design.

To achieve some of the self-determining strategic outcome of the Model, agencies will need to provide options, support and resourcing for local data, local infrastructure and local solutions. This is a crucial aspect of developing a balanced data landscape. Such infrastructure should not only be an affordable solution for communities' current needs but be designed with the flexibility to meet future requirements. This includes the development of customisable, scalable and interoperable data infrastructure at community, regional and national levels, where Māori can decide whether and how Māori databases might connect with each other. A Mana Motuhake system of distributed and decentralised (DaD) data infrastructure provides options for securely housing data, thereby supporting Māori to achieve their self-defined aspirations. It also further contributes to the continued development of Māori capacity and leadership excellence through high-value career-development opportunities that attract and retain Māori talent and knowledge. The need for DaD systems to support community-level decision-making and action has also been amplified by the COVID-19 pandemic and recent extreme weather events.

There are many ways to implement a distributed model, not all of them requiring heavy tech machinery. For example, the Aotearoa election system operates in a distributed, decentralised manner. In a decentralised system, because information is not held in a single place, it takes much more effort to severely compromise the system from a security perspective. Distributed systems are capable of doing a significant amount of work cheaply because each part only needs to do a little bit of work and then pass it on. This parallel aspect can save a lot of time on some tasks, which is why distributed systems are commonly used for high-performance computing.

Exemplar:
COVID Tracer app

The COVID Tracer app was developed under severe time constraints and with huge national importance to the Aotearoa COVID-19 response. At the time, ensuring the trustworthiness of the system was paramount to its success. For this reason, the app incorporated a number of decentralised architecture principles into its design. Contact tracing data was collected and stored solely on the user's device, only to be willingly shared with contact tracers on request. The source code was also made open source so that it could be independently viewed by members of the public with the required technical knowledge. This aspect of the COVID app is a good example of how a decentralised, distributed architecture can be paramount to ensuring the trustworthiness of a system. [35]

2.3
Sustainable and future-focused

Data infrastructure must be both sustainable and future-proofed to meet the shifting needs and demands of future generations. Infrastructure needs to endure across time and provisions made for data quality to be maintained through systems migrations. Sustainability also refers to impacts of data infrastructure on te taiao. Infrastructure that supports the collection, storage, sharing and use of data ought not have an adverse environmental impact. The massive energy demands of data warehouses are well documented. In the context of climate change and systems-level approaches at mitigation and adaptation, the potential benefits of storing large amounts of data should be carefully balanced against the environmental impacts of data warehouses that occupy large tracts of land and consume significant energy to cool servers and ensure continuous, reliable service. Aotearoa has the third highest rate of renewable energy as a portion of primary supply (49 per cent) in the OECD, providing ample options for green cloud architecture. Investment in Māori-owned and hosted onshore storage of Māori data is key. [36]

Key actions

- Share decision-making on data infrastructure with Māori. This includes shared decision-making at a policy-setting level and a system-level.
- Provide resources, equitable funding and support for the development of Mana Motuhake systems of distributed and decentralised data infrastructure for Māori. This is particularly important for crisis preparation, management, response and recovery.
- Invest in green cloud architecture and Māori-owned cloud providers and data warehouses.

Guiding questions

- What does our agency's data infrastructure comprise? Does it meet Māori needs and priorities, and facilitate or hinder progress towards achieving the Model's Desired Outcomes?
- How can we involve Māori in setting policy, investment strategy, and commissioning (or decommissioning) approaches to data infrastructure?
- Is the data infrastructure too centralised? How can we make it more DaD?
- How can more DaD approaches support local decision-making and actions during times of crises?
- Is our data infrastructure sustainable? Does our infrastructure enable future generations of Māori to access and use Māori data?
- Does our data infrastructure damage the environment through intensive energy use or through large physical footprints?
- How can we make our data infrastructure more environmentally sustainable? Could we reduce storage capacity by reducing data collection or removing unneeded data?
- How can Māori (including iwi) be supported to build their own data warehouses and cloud services?
- How can our procurement practice better take into account our responsibilities to Māori data and Māori-preferred infrastructure arrangements?

Relevant documents

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[35] We note that other elements of the COVID app caused some concern among Māori, including the storage of registration data on Amazon servers in Australia and issues with the recognition of Māori names/macrons.

[36] See, for example, Tiaki – a kaupapa Māori owned accredited data centre with edge facilities. https://www.tiaki.global/infrastructure

Pou 3

Data collection

Too often agencies undertake data collection in ways that are extractive, narrowly focused on agency agendas, and/or result in inadequate benefits for those providing the data. A Tiriti-led approach supports data collection principles and practices that maintain and ideally strengthen relationships. Much like approaches to gathering kaimoana, ethical data collection practices involve considered decisions about what data should be collected, for what purposes, and for whose benefit.

Such approaches only collect data that is necessary and have protocols that guide ethical practice. This applies whether the data collection is active (i.e., where data is deliberately collected) or passive (e.g., where data may be generated passively or as a byproduct of another activity or service).

3.1

Prioritise Māori data needs

Prior to collecting data, agencies should carefully consider how any data collection will benefit Māori, as well as any potential risks or harms. Currently, the data landscape is still heavily weighted to government information needs. Sometimes agencies seek input from Māori subject matter experts (e.g., academics) or an external advisory group, but too often that becomes the endpoint rather than the starting point. Iwi and communities should also have meaningful input into the types of data that are collected and accessed, the overall direction of the work, and the interpretation and dissemination of any findings. High-quality data that meets Māori requirements is crucial to support progress towards self-defined aspirations, including the devolution of services. Such data should accurately capture the nuanced, diverse contexts of Māori communities and permit flexible and meaningful forms of data disaggregation. Māori ethnicity and descent data may be necessary, but insufficient, particularly for iwi and hapū.

Exemplar:

Te Kupenga Māori Wellbeing Survey

Undertaken by Stats NZ for the first time in 2013, Te Kupenga was a nationally representative post-censal survey of wellbeing involving more than 5000 Māori adults. Unlike other official surveys such as the Population Census and General Social Survey, Te Kupenga was specifically designed with Māori values and priorities in mind and had substantial input from Māori researchers, communities, iwi and policymakers. It came after many years of advocacy from Māori for high-quality data that reflected the breadth and depth of Māori wellbeing, and that met Māori information needs.

One of the strengths of Te Kupenga 2013 is that it included a broad suite of questions relating to whānau, enabling a more nuanced understanding of whānau wellbeing than was hitherto possible. Prior statistical studies of whānau had relied on proxies such as household living arrangements, and primarily focused on household circumstances, often using deficit-focused analysis. Missing from these statistical narratives were Māori perceptions of who their whānau comprised, how their whānau were doing, and what whānau wellbeing looked like.

Using Te Kupenga data, Māori researchers were able to interrogate the data to better understand the relationship between whakapapa concepts of whānau and those based on affect and/or interest. They also explored the individual and whānau factors associated with high ratings of subjective whānau wellbeing. [37] Analysis showed that household-based measures of family were a poor proxy for whānau relationships, and that policy responses based on these narrow Western concepts may have limited relevance. Te Kupenga was undertaken again in 2018 but there are currently no plans for a survey in 2023.

3.2

Collect only what is needed. Return what isn't required

Not all data is good data. Some information should not be collected. This is especially true if the information does not directly relate to a clear data need and if it does not align with Māori data priorities. Before collecting data, agencies should carefully consider why data will be collected, what it will be used for, and whether the collection of new data is required to achieve the intended outcomes. Wherever possible, options that can achieve the Desired Outcomes without requiring additional data collection should be used. This will likely involve carrying out a review of what is already known in the area and confirming whether similar analyses have already been undertaken. Often a large body of research and analysis already exists that outlines clear directions and priorities for intervention. Agencies can waste time and resources by not checking what research has already been done in an area, then assessing whether additional analysis will have any extra benefit.

As a saturation point is reached, new data collection and analysis will likely not yield 'breakthrough' insights. Instead, what is often required is meaningful action on what is already known. Pausing before beginning new data-driven analytics will lead to a more careful and intentional approach to the collection, use and reuse of data. If new data is required, then only the minimum amount that is needed should be collected, and any collection must be clearly and transparently connected to a particular purpose. These considerations should go beyond the legal requirements of the Privacy Act 2020 and include an assessment of the planned collection in relation to BADDR data practices, as well as ensuring that the planned collection upholds MDGov values. This is important as the poor and unsafe collection of data can undermine trust in public services, even if such collection is legal. Any data collection that is no longer required, or that contributes to BADDR data practices, should cease immediately. Unused data should not be continually stored 'just in case', unless required to be kept as an official public record. As discussed elsewhere in this report, the indefinite retention of data is not neutral, but has cost and environmental impacts. Instead of holding on to unused data, it should be repatriated back to the individuals and collectives that it came from (see Data Pou 5).

Example:

Lack of clear purpose for collection

In 2016, the Ministry of Social Development (MSD) changed its contracts so that non-government agencies had to disclose individual client-level data to the agency as a condition for receiving funding. Some of the NGOs included organisations that dealt with sensitive issues, including family violence. Under the contract terms, there was no provision for an NGO to opt out.

An inquiry by the Privacy Commissioner (2017) found that MSD had not properly considered the possible unintended consequences of their policy change, or alternative means for achieving their aims. The contract change was problematic for several reasons. One is that it increased the risk that people who needed help wouldn't seek it, thereby placing them at potential risk of harm. There was also the risk that clients would provide incorrect information in order to preserve their privacy – leading to inaccurate or even unusable data for analysis. For those NGOs that opted to provide services to clients who did not want to disclose their sensitive information to MSD, this put them at risk of receiving reduced funding, potentially affecting their long-term viability. One of the report's main findings was that MSD has not clearly explained to NGOs its purpose for requiring individual client information and who it would be disclosed to. The practice was subsequently stopped by MSD.

3.3

How data is collected matters

In addition to considerations of what and why data is collected, it is imperative that how Māori data is collected align with MDGov values. Returning to the earlier kaimoana analogy, tikanga are followed before, during and after gathering kaimoana to ensure that practices are tika. Data collection should be undertaken in ways that strengthen, or at a minimum maintain, Māori rights in relation to data. This includes recognising rights to full, prior and informed consent (FPIC), [38] and data collection practices that uphold

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[37] Kukutai et al. (2016). Expressions of whānau. In *Families and whānau status report 2016* (pp. 52–77). Superu.

[38] See Article 32 of the UNDRIP; Food and Agriculture Organization of the United Nations (2016).

peoples' dignity (see Data Pou 6). FPIC is a specific collective right that pertains to Indigenous Peoples, allowing them to give or withhold consent to a project that may affect them or their territories:

> In short, consent should be sought before any project, plan or action takes place *(prior)*, it should be independently decided upon *(free)* and based on accurate, timely and sufficient information provided in a culturally appropriate way *(informed)* for it to be considered a valid result or outcome of a collective decision-making process.
>
> (Food and Agriculture Organization of the United Nations, 2016, p. 15)

Passive and implicit forms of data collection are increasingly common (e.g., web analytics and tracking cookies), because of changing technologies as well as the shift to web-based interactions with government services. This enables agencies to collect and record more data than may have previously been collected in interactions with clients. Where FPIC is not possible, data collection should be as explicit and transparent as possible, and there must be strong governance and ethical use provisions in place in relation to any use or reuse of Māori data. Operating on the basis of presumed social licence is not a robust strategy for building a trustworthy, resilient data system.[39]

Key actions

- Ensure that the collection of any *new* Māori data aligns to at least one of the Model's Desired Outcomes.
- Ensure that the collection of any *new* Māori data has the explicit support of at least one collective Māori rights-holder.
- Check that the Māori identifiers used in any given data collection allow for data disaggregation that is flexible and meaningful to Māori.
- Develop a consistent concordance process for Māori data so that it can be accurately converted from one geographic boundary to another (e.g., from administrative unit to iwi rohe).
- Identify opportunities for repatriating unused data back to collective Māori rights-holders, and where possible and appropriate, begin the repatriation process (see Data Pou 5).

Guiding questions

- Does our agency's approach to data collection strengthen relationships with whānau, hapū, iwi and other Māori collectives? Do we collect the data that these collectives need to address their priorities?
- Does our agency's data collection practice uphold FPIC? Do we collect data in respectful ways that uphold people's dignity?
- What processes does our agency have for monitoring our own data collection practices?
- How will we know when we are collecting data in ways that strengthen relationships with Māori collectives, that enhance individual mana, and that reaffirm and strengthen Māori individual and collective rights in relation to data?
- What actions can we take to improve the ways that we collect data?
- Is the data that we collect essential to achieving our wider objectives? Are there other sources of similar information already available? What analysis has already been done in this area, and do we already know what actions are required to achieve our wider objectives?
- How long do we need to hold collected data? Once the key information has been recorded, could some data be deleted, so reducing the need for storage capacity?

Relevant documents

- Rainie, S. C., Schultz, J. L., Briggs, E., Riggs, P., & Palmanteer-Holder, N. L. (2017). Data as a strategic resource: Self-determination, governance, and the data challenge for Indigenous nations in the United States. *International Indigenous Policy Journal, 8*(2). https://doi.org/10.18584/iipj.2017.8.2.1

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[39] Social licence describes an organisation's or project's legitimacy, credibility and trust in the eyes of the public or key stakeholders.

Pou 4

Data protection

Data protection often focuses on ensuring that private, confidential or sensitive information is safe and secure from external threats and security breaches. This is important for guiding agencies and organisations to 'do the right thing' with people's data in the hope of building and maintaining trust in public institutions. The impacts of colonisation are intergenerational and continue to affect individuals, whānau, hapori, hapū and iwi, and it is these impacts that contribute to mistrust of government agencies, institutions and agendas.

Applied to Māori data, the scope of data protection needs to be broader than prevailing regulatory frameworks that focus solely on personal data protection. The concept of having shared responsibilities for the protection and use of information and knowledge is an enduring one in te ao Māori. Any application of data privacy and protection of Māori data must thus address collective dimensions of privacy and be informed by values and concepts that are grounded in Māori knowledge systems and practices.

4.1
Privacy

Privacy is considered a cornerstone issue in relation to freedom and democracy. As a concept, privacy is founded on notions of a division between the public and private spheres of an individual's life. Information privacy laws are the most common form of modern privacy legislation. Such laws focus on personal data protection through conferring on individuals a measure of control over how their personal information is collected, used, disclosed, transferred, stored and secured or otherwise handled. Big Data technologies and practices pose challenges and risks to individual and collective privacy, particularly for marginalised and over-surveilled groups. For Māori, the right to privacy includes collective rights that cannot be reduced to individual privacies. This is particularly evident in situations where the use or disclosure of the data has the potential to result in collective risk or harm (e.g., population profiling), or where the data being used has a collective element (e.g., whakapapa).

Protecting personal privacy

The Privacy Act 2020 governs how organisations and businesses can collect, store, use and share personal information, defined as information about an identifiable individual.[40] The purpose of the Act is to promote and protect individual privacy.[41] Underpinned by 13 information privacy principles (IPPs),[42] the Act sets out the rules for protecting personal information and the responsibilities of agencies and organisations across the public and private sectors. Consent is not the primary or default basis for collecting, using and disclosing personal information under the IPPs. Rather, the default basis for collecting personal information under the IPPs is that collection must be necessary for a lawful purpose

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[40] There is no definition of 'identifiable individual' but generally this means a person who can be reasonably identified, either directly or indirectly, were the information to be disclosed.

[41] It is worth noting here that there is no constitutional right to privacy in Aotearoa. The New Zealand Bill of Rights Act 1990 (NZBORA) affirms the government's commitment to the International Covenant on Civil and Political Rights (ICCPR), and thus also to Article 17 of the ICCPR, referred to as the right to privacy. https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-civil-and-political-rights

[42] The 13 information privacy principles (IPPs) relate to: the purpose for collection; the source of information – collection from the individual; what to tell the individual about collection; manner of collection; storage and security of information; providing people access to their information; correction of personal information; ensure accuracy before using information; limits on retention of personal information; use of personal information; disclosing personal information; disclosure outside New Zealand; and unique identifiers.

connected with an agency's function or activity.[43] The Model's focus on FPIC as the basis for Māori data collection, use, sharing and disclosure (see Data Pou 5) is more stringent than the consent requirements under the Privacy Act.

The Office of the Privacy Commissioner is not bound by the Public Service Act (and section 14 requiring agencies to support the Crown in its relationships with Māori under te Tiriti), but the Office is part of the Crown and as such has obligations under te Tiriti, reinforced in the Enduring Letter of Expectations for Statutory Crown Entities, 2019.[44] A major challenge for Māori privacy protection is that the Privacy Act does not include specific Tiriti, tikanga or Māori privacy considerations. The only direct mechanism for consideration is through section 21(c) of the Privacy Act, which requires the Privacy Commissioner to take cultural perspectives on privacy into account. Section 21(c) applies across all the Commissioner's functions, duties and powers, including the way in which the Commissioner interprets the IPPs, and the way in which the Commissioner approaches their code-making powers. However, the lack of explicit Māori data privacy requirements or guidance means that agencies may have a poor understanding of what information privacy means for Māori. Given the disproportionate surveillance that Māori incur within state systems, and the amplified risk of experiencing some form of data harm, it is important that agencies understand their obligations with respect to protecting Māori data privacy.

Example:
Police photographing members of the public[45]

In some contexts, digital photographs are considered biometric information. In 2021, the Independent Police Conduct Authority and Office of the Privacy Commissioner undertook a joint inquiry into three complaints that Police had stopped rangatahi in public places and photographed them without either their consent or the consent of their parents or caregivers. The inquiry also examined the way in which photographs or video recordings of members of the public were being taken, used and retained in a variety of policing contexts. While Police are able to photograph the public, their use depends on the relevant powers that are available in each policing situation and the respective statutory constraints that apply. When Police take photographs of people outside of those specific statutory situations, they must comply with the Privacy Act and the information privacy principles (IPPs) within it.

In relation to the three complaints, the inquiry found that Police were not justified in photographing the rangatahi, as photographs were not necessary for a lawful policy purpose. With regards to the broader issue of Police use of photography, the inquiry found that aspects of both Police policy and practice were inconsistent with the IPPs and breached individual rights. It also found that officers were "routinely taking photographs when it is not lawful for them to do so [and] many are under the misapprehension that if they obtain the consent of the person photographed, that gives them the necessary authority, even though they do not have a lawful purpose" (Independent Police Conduct Authority & the Privacy Commissioner, 2022 pp. 7–8).

The inquiry recommended that Police policy, procedures and training be significantly revised and enhanced to reflect that photographs are sensitive biometric information and to ensure that, when Police are photographing people, they are doing so only when either there is a specific statutory authorisation or there is full compliance with the IPPs.

Collective privacy matters

The boundaries between personal and collective privacy are more nuanced than regulatory frameworks recognise. There is increasing recognition that online privacy cannot be reduced to the decisions of a single person. Individuals do not have full control over their privacy, in part because the decision not to share personal data online is mediated by the decisions of other people (e.g., sharing photos and locations of friends online).

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[43] The principles of the Privacy Act are designed to work together which means that that agencies that are seeking to collect information must comply with Principle 2 (the source of information – collection from the individual), Principle 3 (what to tell the individual about collection), and Principle 4 (manner of collection). This means that unless an exception exists: personal information should be collected directly from the individual concerned (Principle 2); that reasonable steps should be taken to ensure that the individual from whom the data is being collected knows why the data is being collected, who is collecting the data, if provision is voluntary or compulsory and what will happen if they don't provide it (Principle 3); and that the manner in which the information is being collected must be lawful, fair and not unreasonable intrusive, with particular care taken where collecting information from children or young people (Principle 4).

[44] See https://www.publicservice.govt.nz/assets/DirectoryFile/Enduring-Letter-of-Expectations-to-Statutory-Crown-Entities.pdf

[45] Independent Police Conduct Authority and the Privacy Commissioner. (2022). *Joint inquiry by the Independent Police Complaints Authority and the Privacy Commissioner into Police conduct when photographing members of the public.* Available from https://www.privacy.org.nz/assets/New-order/Resources-/Publications/Commissioner-inquiries/8-SEPTEMBER-2022-IPCA-AND-OPC-Joint-Inquiry-into-Police-photographing-of-members-of-the-public.pdf

Despite there being no word in te reo Māori for privacy, there are well-defined tikanga that are central to a Māori concept of data privacy and that determine when, how and by whom information can or should be shared (Kukutai et al., 2023). Because the focus of data privacy regulation is on personal data, issues relating to collective ownership and collective privacy are rarely addressed. However, a narrow focus on personal data privacy can only ever offer partial protection for Māori data. An approach that respects collective privacy is one that recognises and upholds collective rights over information much in the same way that an individual owns and has authority over their personal information.

There are many kinds of Māori data that do not fit the narrow definition of personal data but are valuable and require protection. Some data – such as whakapapa, genetic and genomic data – are both personal and collective. Such data can be aggregated to 'represent' a collective and inferences are made about the group that can have material consequences for its members, without collective consent or regard for group privacy. The collection, sharing, use and disclosure of such information thus requires considerations that extend beyond individual privacy. It requires balancing the benefits of making such information widely accessible, and the potential harms that might be incurred by a collective from its misuse. This includes the violation of tikanga surrounding the transmission of information that has collective cultural significance. In such circumstances, individual consent to share such data is inadequate given the collective interests and risks involved. The Kaitiakitanga licence developed by Te Hiku media to protect te reo data accessed through the Whare Kōrero app provides an international example of Indigenous Peoples' retention of mana over their collective data.[46]

There are other contexts in which collective privacy matters. Personal data is often the building blocks for aggregated insights into collective characteristics and behaviours. Individuals can be clustered according to behaviours, preferences and other characteristics without being explicitly 'identified' in the traditional sense. Individuals are often unaware of how data controllers and analysts use their personal data to assign them to a group and make decisions which may have adverse consequences for them, and for others so designated. The ways in which personal data is aggregated to identify, monitor and target groups that are explicitly (or more likely) implicitly identified as Māori requires care and oversight (see also Law Commission (2018)).

De-identification

De-identified data has become seen as indispensable for analysis and research. De-identification reduces the risk of disclosure of information about specific people by using processes to remove personal identifiers such as name and age, or altering data to achieve a state in which individuals cannot be reasonably identified. In Aotearoa, the IDI is a large research database widely used by agencies and researchers. It holds de-identified microdata about people and households in relation to education, income, benefits, migration, justice, health and more. The IDI can only be accessed and analysed by approved users in a secure Data Lab environment under Stats NZ's Five Safes and Ngā Tikanga Paihere frameworks (Stats NZ, 2020a).[47, 48] The latter framework draws on five principles and ten tikanga to help guide ethical and culturally appropriate data use.

With the strong push towards open data (see section 5.1), there are increased pressures to make data sets more widely available. When it involves the release of unit-record data, however, the extent to which de-identification can safeguard privacy becomes more complex. Technological innovation means the ability to re-identify individuals in publicly released data is increasing, particularly through the use of secondary information. Recent research indicates that individuals are very likely to be re-identifiable in data sets – even large-scale data sets with tens of millions of people – despite previous claims and reassurances that the risks reduce in large data sets.[49] As the number of data points relating to an individual increases, so does the risk of re-identification, meaning that this risk is likely higher for Māori that have ethnic identifiers included in

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[46] https://xn--wharekrero-v3b.nz/kaitiakitanga/

[47] https://www.stats.govt.nz/integrated-data/how-we-keep-integrated-data-safe/#five

[48] The tikanga are pūkenga, whakapapa, pono, tika, wānanga, kaitiaki, wairua, mauri, tapu and noa. The principles are: have appropriate expertise, skills, and relationships with communities; maintain public confidence and trust to use data; use good data standards and practices; have clear purpose and action; balance benefits and risks. See https://data.govt.nz/toolkit/data-ethics/nga-tikanga-paihere/

[49] See Farzanehfar et al. (2021).

their data. Furthermore, for smaller groups such as iwi or hapū, there are additional risks of collective reidentification, which can implicate the community as a whole. The removal of explicit Māori identifiers such as those based on ethnicity or iwi affiliation from a data set does not mean that the data is no longer Māori data – if it comes from Māori individuals, collectives, and or environments, it is still Māori data.

4.2
Security

Data security refers to the protection of digital information from unauthorised access, corruption, or theft using tools and practices such as data encryption, erasure and masking. With complex environments that include distributed, hybrid and multicloud computing, data security risks are constantly evolving and keeping pace requires a proactive approach and the right controls and settings. In Aotearoa, recent high-profile cyber incidents have increased the importance of getting the security of information systems right. Data classified as Māori data needs to be subject to proper data security procedures that should be built into all agency practices, and guided by Māori leadership and expertise in this space.

Data storage and processing [50]

As a result of the government's Cloud First policy, which requires agencies to adopt cloud services, most agencies have moved to offshoring at least some of their data, including Māori data. This has occurred in the absence of meaningful Māori engagement and runs counter to both MDSov principles and guidance from the SRRP. In relation to data storage, the Special Rapporteur on the right to privacy (2019, p. 27) states:

> Indigenous Peoples have the right to … ensure that the physical and virtual storage and archiving of Indigenous data enhances control for current and future generations of Indigenous Peoples. Whenever possible, Indigenous data shall be stored in the country or countries where the Indigenous People to whom the data relates consider their traditional land to be.

When making decisions about cloud services involving Māori data, agencies have various options to choose from including public cloud (offshore or onshore), hybrid or multicloud (onshore/offshore), private or community cloud. There are also opportunities to invest in Māori-owned, Māori-hosted onshore storage solutions, and to create bespoke agreements with cloud service providers and non-cloud providers to establish hybrid Māori 'data islands' within Aotearoa. When evaluating the risks and benefits of offshoring of data, it is important to not only consider data storage, but also broader issues related to offshore data processing. Effective use of a cloud provider, whether onshore or offshore, is unlikely to *only* involve data storage. For example, it would be incorrect to assume that infrastructure as a service is solely related to data storage, when it includes data processing as well.

Having a proactive approach to strengthening local infrastructure also aligns with calls for additional investment in developing local workforce capability to lift Aotearoa's global competitiveness. Taken together, this suggests that:

- Onshoring should be the preferred option for storing Māori data, wherever possible and practicable.
- Māori should be actively involved in decisions regarding on/offshoring Māori data.
- MDSov should be incorporated into procurement policies and practices in relation to cloud services.
- Decisions about the storage of Māori data should prioritise sustainability for future generations.

4.3
Jurisdiction

The mainstream concept of data sovereignty is about maintaining control and authority of data within jurisdictional boundaries. This is distinct from Indigenous concepts of data sovereignty which assert Indigenous authority over Indigenous data, regardless of where the data is stored. The ability of Māori to exercise authority over Māori data is compromised when that data is stored in a foreign jurisdiction. There are several jurisdictional risks. For example, Australia's Telecommunications and Other Legislation Amendment (Assistance and Access) Act 2018 makes it mandatory for any organisation whose website or data is hosted in Australia to give authorities access to their IT system if requested. There are also risks involved when data is stored onshore using a global cloud service provider. In most instances, its staff in various jurisdictions abroad will be able to access the data, network and storage configuration details, and have hypervisor access. Both the USA and China assert jurisdiction over data stored by companies headquartered in their respective countries. The United States Clarifying Lawful Overseas Use of Data Act (CLOUD Act), for example, allows federal law enforcement to compel U.S.A-based technology companies to provide requested data stored on their servers, even when the data is stored on foreign (e.g., Aotearoa) soil. In the first half of 2021, there were 27,809 legal demands to Microsoft for access to its consumer data, [51] of which 21,417 sought data that was stored outside of the USA.

Offshoring Māori data, and/or onshoring Māori data using providers subject to other jurisdictions, is often justified on the purported basis of greater security, sector maturity and reduced cost. However, these decisions also circumvent the authority and control that Māori can exercise. The lack of detailed information around system and agency decision-making also makes it very difficult for Māori, as Tiriti partners, to properly assess risk and influence decisions about the offshoring of Māori data.

Key actions

- Identify data and data sets that have a collective privacy dimension so that rights and risks can be assessed and addressed.
- Develop tools to assess MDSov risks when Māori data is processed and stored offshore, or onshore using a global provider. Agencies with system leadership responsibilities should have an ongoing monitoring function.

Guiding questions

- How can the data that we hold be used to identify a Māori collective? Does that collective have a say in how that data is aggregated, accessed, shared, used or disclosed?
- What would constitute a collective privacy violation? How might we avoid such violations?
- What does our agency do to protect collective privacy, and what more could be done?
- What processes does our agency have in place to ensure that Māori make decisions about what Māori data is stored or destroyed?
- How is MDSov incorporated into procurement policies and practices in relation to cloud services?
- What processes does our agency have to ensure the security of Māori data?
- What are our processes for dealing with data breaches that might have an impact upon Māori collectives?
- What does our agency do to protect the integrity of a data system that supports tino rangatiratanga?

Relevant documents

Privacy

- Kukutai, T., Cassim, S., Clark, V., Jones, N., Mika, J., Morar, R., Muru-Lanning, M., Pouwhare, R., Teague, V., Tuffery Huria, L., Watts, D., & Sterling, R. (2023). *Māori data sovereignty and privacy* (Tikanga in Technology discussion paper). Te Ngira Institute for Population Research. https://tengira.waikato.ac.nz/__data/assets/pdf_file/0005/947444/MDSov-and-Privacy_20March2023.pdf
- Office of the Victorian Information Commissioner. (2018). *The limitations of deidentification. Protecting unit-record level personal information.* https://ovic.vic.gov.au/privacy/resources-for-organisations/the-limitations-of-de-identification-protecting-unit-record-level-personal-information/
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- Privacy Commissioner. (2022). *Privacy regulation of biometrics in Aotearoa New Zealand: Consultation paper.* https://www.privacy.org.nz/assets/New-order/News/Consultations/Privacy-regulation-of-biometrics-in-Aotearoa-New-Zealand.pdf
- Special Rapporteur on the right to privacy. (2019). *Report on the protection and use of health-related data* (A/74/277). Office of the High Commissioner for Human Rights (UN Human Rights). https://www.ohchr.org/en/calls-for-input/report-thee-protection-and-use-health-related-data
- Te Pou Matakana Limited v Attorney-General (No 2), NZHC 3319 ___ (high.court 2021). https://www.courtsofnz.govt.nz/assets/cases/2021/2021-NZHC-3319.pdf
- Tsosie, K. Yracheta, J., & Dickenson, D. (2019). Overvaluing individual consent ignores risks to tribal participants. *Nature Reviews Genetics, 20*, 497–498. https://doi.org/10.1038/s41576-019-0161-z

Security

- Kukutai, T., Clark, V., Culnane, C., Teague, V. (2022). *Māori data sovereignty and offshoring Māori data.* Te Kāhui Raraunga. https://www.kahuiraraunga.io/_files/ugd/b8e45c_c035c550c8244c70a1025cd90a97298e.pdf

Jurisdiction

- New Zealand Government (n.d.). *Data sovereignty*. https://www.digital.govt.nz/standards-and-guidance/technology-and-architecture/cloud-services/help/data-sovereignty/countries-and-service-providers/

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[50] Most of this section is a summary of a more comprehensive analysis of Māori data sovereignty and offshoring Māori data that was commissioned by Te Kāhui Raraunga.
https://www.kahuiraraunga.io/_files/ugd/b8e45c_c035c550c8244c70a1025cd90a97298e.pdf

[51] https://www.microsoft.com/en-us/corporate-responsibility/law-enforcement-requests-report

Pou 5

Data access, sharing and repatriation

5.1

Access

Pōwhiri are ritual encounters that have been practised by Māori for many generations, guided by centuries of kawa and tikanga. In pōwhiri, established protocols are invoked to create safe spaces and bring mana whenua and manuwhiri into good relations with each other. Information and knowledge that is valuable to the collective is only shared in certain circumstances, authorised by those who have been entrusted to protect it. Much like the pōwhiri, data access, sharing and repatriation is about creating relationships of reciprocity and trust, and invoking rules for what data can be shared, by whom, and under what conditions. When interested parties meet, they should make clear their intentions about what they hope to achieve with the data and form a relationship to discuss and determine how data is accessed and shared.

Access as process

Rather than being treated as a 'one-off' event, data access should be viewed as a relational, ongoing process. Data that is classified as Māori data (see Data Pou 8), and that is not subject to restrictions, should have appropriate metadata that increases its findability. When assessing requests to access Māori data, government agencies should have a clear and transparent process for determining rights-holders (i.e., those who have rights in relation to the data). This is something that a Māori data and digital entity would be well positioned to provide protocols for.

Drawing on a broad notion of access, data access should be facilitated across three stages. Many discussions of access focus on a narrow idea of access as entry into a system or service, which might be called primary access. However, access has been more broadly conceptualised as also including how people are able to move through a system or service (secondary access) and how well systems or services are able to meet the needs of those using them (tertiary access) (Bierman et al., 1998). In this sense, access is more than just an ability to enter a service or system, but also the ability of that system or service to facilitate meaningful, quality engagement and experience, and good outcomes.

Remove barriers to access

Systems that are difficult to navigate make Māori data inaccessible to those who wish to use it, even where the case for access is very clear. For instance, while the data associated with the alienation of Māori land holds clues to whānau, hapū and iwi histories, [52] it is stored in government repositories that are difficult to access. Some Māori Land Court records are paper-based and held within local offices, meaning that they must be physically accessed in person, photographed, and then manually compiled into a digital database. This data can be linked to other land information through Geographic Information Systems but requires technical expertise and proprietary software. Issues with accuracy and compatibility between data sets results in data gaps that require laborious triangulation and verification through the purchase of individual historic and current land titles. The time, resources and money required to access this data present a significant barrier and raise questions of the appropriateness of Māori needing to pay to access information about their own whenua.

Whakapapa data is highly valued in te ao Māori and is widely regarded as tapu. As with whenua data, a significant volume of whakapapa data lies beyond the direct control of whānau, hapū and iwi. Rather than being nurtured as an intergenerational taonga, whakapapa data is fragmented and dispersed, in both digital and hard form, across research repositories, archives, land courts and offshore-hosted genealogical websites with very few protections. Birth, death and marriage certificates are also a rich source of whakapapa, but most can only be accessed for a fee and lack the appropriate metadata to facilitate hapū and iwi identification and use.

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[52] See Kukutai, Whitehead, and Kani (2022).

Open access

Open data is data that is made available for anyone to use or share. Currently decisions about which government data sets are made open access in Aotearoa rest with agencies. The CARE Principles for Indigenous data governance recognise the tension between open data and IDSov, and assert Indigenous rights and interests within the open data space. The CARE principles complement the existing FAIR principles (Findable, Accessible, Interoperable and Reusable) and, as such, are designed to promote equitable participation in processes of data reuse rather than challenge the logics of open data. While open and FAIR data can undoubtedly produce benefits, Indigenous communities are less likely to share in those benefits equitably, or be able to identify and mitigate harm, if they lack the power to decide which data is open. This is particularly important in the case of traditional knowledge and its applications. Data is a responsibility not an entitlement. Globally, there is a strong push for publicly funded research to promote data sharing. Aotearoa's new open research policy mandates that all peer-reviewed research outputs be published in open access outlets. While researchers are strongly encouraged to make funded research data openly available, the policy explicitly recognises that IDSov may preclude making research data open access. [53] As a general principle, no data sets containing unit-level information about Māori individuals should be made open access, [54] without explicit Māori permission and oversight.

Benefits back to Māori

Māori data must be used for good. There should also be a clear and demonstrable link between access to and use of Māori data, and the fair and equitable sharing of benefits. These can include both monetary benefits resulting from the commercialisation of Māori data, or non-monetary benefits associated with research or other activities, and should be shared on equitable terms. There are a multitude of examples of Māori data being accessed for purposes that may fulfil a research agenda, but do not have clear and demonstrable benefits for or make contributions to Māori communities. While developing a better understanding of an 'issue' through data analytics and insights can be important, it does not necessarily lead to direct, tangible or meaningful benefits for Māori.

5.2

Sharing

In mainstream contexts, data sharing is generally thought of as a collaborative way to improve services or develop new insights. Data sharing is often framed as a positive step towards the government 'getting the most out of data'. However, this assumes that the individuals and collectives from whom the data comes are willing for their data to be shared and will directly benefit from such data sharing.

Rights of self-determination, and of FPIC, means individuals and groups have a right to know what is happening with their data; for example, whether it is being shared with other agencies, and whether it is being linked to or integrated with other data sets. Many government agencies include a statement – for example, on forms – about the potential for de-identified data to be used for research and statistical purposes, as is provided for under legislation. Given the relatively common nature of data sharing between agencies, and the routine integration of data in the IDI, it is important that agencies are open and explicit about which data will be shared and under what conditions. This information should be proactively and routinely provided to people at the point of data collection. This becomes important in considerations about the ethics of future use, as it speaks to the nature of the initial processes of data collection which may have an impact on whether data could be expected to have been collected with prior knowledge and/or in the knowledge that the data may be shared. Large-scale and routine data sharing between agencies is increasingly facilitated by technology. While data sharing may be able to happen at a greater scale now than in the past, that does not mean that it is necessarily something that communities are comfortable with in all circumstances.

For the most part it is agencies that control how Māori data is shared, often without the approval or input of Māori. Alternative approaches need to be developed, such as negotiated sharing agreements (see the Appendix for examples) and memoranda of understanding, with a view to establishing Māori control over the sharing of Māori data. This will involve Māori deciding how and when Māori data is shared, and with whom. Data sharing protocols would govern all requests by third parties for the creation, use or

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[53] https://www.mbie.govt.nz/science-and-technology/science-and-innovation/agencies-policies-and-budget-initiatives/open-research-policy/

[54] This would exclude data sets that have been confidentialised according to industry standards, such as the Confidentialised Unit Record Files (CURFS) maintained by Stats NZ.

disclosure of Māori data and/or research requiring the use of Māori data. Roles would need to be established within agencies to service data requests, and the operating model enabled to action them.

Data linkage and integration

Data integration is a necessary part of working with a data system composed of many discrete parts. To make decisions and test hypotheses, it may be necessary to combine data from multiple places. Therefore, establishing practices whereby this can be done in a safe, mana-enhancing manner is a challenging technical and policy problem. Instead of reproducing structures of surveillance whereby ordinary people can be followed and tracked without permission, data linkage must be conducted with the informed consent of those involved. To do otherwise violates Māori data sovereignty principles.

On a practical note, a shared data system between Māori and the government would require data linkage in some form to be able to operate. In this scenario, it is important to keep only what data is required for an express purpose and prioritise keeping data close to where it is used rather than accumulating data sets in a single storehouse with the hope that it will come in useful, as this increases the risk for abuse. Maintaining large monolithic data storage houses reduces overall trust in the system, since any organisation in control of such a system has the power to misuse the data with no oversight. The goal, therefore, is to have trustworthiness as a fundamental part of the system design that is clearly evident to the users and verifiable (Greaves et al., 2022).

Example:
Equity Index

In the book *Shouting Zeros and Ones*, co-author Caleb Moses discusses the IDI and the replacement of the school decile system – the government's longstanding tool to allocate school funding – with the Equity Index (EQI).[55, 56] Whereas the decile system measured the disadvantage levels of households with school-aged children in each school's catchment area, the EQI measures the average disadvantage of each school's students. To do this, the EQI uses de-identified IDI data for 27 variables linked with education underachievement, from interactions with Corrections, Youth Justice, Social Development and Oranga Tamariki, to parental history, house and school movements.

There are many MDGov implications of such an index. In particular, the students never opt into the collection and use of their data for this purpose. Rather, it is assumed that the government has the social licence to conduct this analysis on their behalf to improve their funding methodology which is considered to be in the public interest. However, the findings of the analysis that forms the basis for the EQI are used only to adjust the funds going to schools via replacing the decile system, and not used as justification to further reflect or investigate the causal structure underlying the relationship between the identified indicators and student educational achievement. While it is not in the purview of the Ministry of Education to propose changes to other government departments, this is where co-leadership with Māori has the potential to provide the kind of cross-sectoral thinking that can make a difference (Cormack & King, 2022).

5.3
Repatriation

Data repatriation is often understood as the process of moving data from the public cloud to a self-managed store. In the Model, however, we use data repatriation to mean the repatriation of Māori data back to where it belongs as an important mechanism for restoring balance. The Model provides an opportunity to determine what data belongs with agencies, and what data belongs in a Mana Motuhake system. For instance, some have argued that iwi affiliation data should not be held by agencies and should either be returned to iwi or held in an independent entity that has a mandate to steward Māori data on behalf of Māori. Data decolonisation –stepping aside, making space for tino rangatiratanga, and acknowledging MDSov – is an integral part of data repatriation.

It is important to note that there can be different understandings of data repatriation, and there are differing levels of repatriation that are currently practicable. In mainstream contexts, both private sector and government organisations are considering the repatriation of data from the cloud for a variety of reasons, including ongoing costs, security issues and avoiding latency problems. In Indigenous contexts, repatriation usually refers to the transfer of data, and control over data, back to Indigenous communities and data rights-holders whom the data comes from. This can include full and complete repatriation where all physical, digital and digitisable Māori data is returned to hapū, iwi or Māori communities to be stored in a Māori-controlled data repository. Under the Public Records Act 2005, iwi- and hapū-based repositories can be designated by the Minister as an approved repository where public archives may be deposited for safekeeping. Full repatriation means that backups or copies of data are deleted and are no longer held by government agencies or organisations. This is the approach favoured in the First Nations Data Governance Strategy. Other forms of partial repatriation may occur in the meantime where iwi, hapū, communities or Māori organisations acquire digital copies of Māori data for their own use. An example of this includes the repatriation and repurposing by Ngāti Tiipa of digital copies of colonial land data held in the Māori Land Court, Land Information New Zealand, Archives New Zealand, and the New Zealand Gazette.[57]

Preparing the path

The full repatriation of Māori data may not always be immediately possible, with preparation needed to make sure that repatriation can occur. The repatriation process can start with data sharing; however, it is essential that the sharing of Māori data does not become an endpoint. Data sharing with Māori must ensure ongoing access and move towards repatriation. This means that hapū, iwi and Māori organisations can begin building capacity and developing Mana Motuhake systems and infrastructure to govern their own data. This capacity and infrastructure is essential to the development of an effective and well-resourced Mana Motuhake space for data, which is a core requirement of a balanced Waka Hourua model.

Before repatriation takes place, repatriation agreements, processes and protocols should be developed together, and decided upon/chosen by Māori. At the same time, during this transitory sharing phase, the capacity building of hapū, iwi and Māori organisations should be accelerated to ensure that the receiving side has the capacity to manage repatriated data. Where hapū, iwi and Māori organisations do have established capacities, then the direct repatriation of data may occur, but in many cases, data would be repatriated to an independent organisation to be stewarded as directed by hapū, iwi or Māori organisations with rights and interests in the data.

Giving it back

Once repatriation has been agreed to by all parties, the data should be transferred back to Māori. Copies may be made and held in a location that meets the requirements of the Māori rights-holders, but agencies should not expect to be able to retain copies as a matter of course. With the consent of Māori, exceptions may be made for specific purposes such as disaster recovery. If agencies wish to access or use repatriated data, they can request temporary access which may be granted, under certain conditions, for certain uses. As noted, effective repatriation depends on hapū, iwi and Māori organisations being resourced to maintain and manage repatriated data and the infrastructures that they rely on. This means the development of independent organisations and infrastructure that sits outside the architecture of government systems. These ensure that data is high quality, up to date, accurate and accessible. Access, sharing and repatriation processes are likely to be ongoing and iterative, and depends on building trusting relationships and processes.

Exemplar:
Repatriation of Indigenous knowledge in Australia

The Aboriginal and Torres Strait Islander Data Archive (ATSIDA) is a thematic archive within the Australian Data Archive,[58] and was created by Jumbunna Indigenous House of Learning and the University Library at the University of Technology, Sydney. ATSIDA aims to collect and preserve the fragmented digital research resources relating to Aboriginal and Torres Strait Islanders in Australia. This provides an important opportunity to archive and repatriate Indigenous research data sets back to the communities to which they relate. Such data sets can include immensely valuable cultural capital in the form of genealogies, stories, songs, oral histories and expressions of knowledge and ritual. Researchers will return Indigenous knowledge that is documented in research projects, and identify any materials to be hosted on an ATSIDA community website for regulated, ongoing and timely community access. Repatriation of this data through ATSIDA can thereby

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[55] https://parents.education.govt.nz/secondary-school/secondary-schooling-in-nz/deciles/#:~:text=students'%20learning%20needs.-,What%20does%20the%20decile%20rating%20measure%3F,from%20low%20socio%2Deconomic%20communities

[56] For more, see https://assets.education.govt.nz/public/Documents/Ministry/Information-releases/2019-releases/R-131-133-Redacted.pdf

[57] See Kukutai, Whitehead, and Kani (2022).

[58] https://www.atsida.edu.au/protocols/atsida/repatriation

contribute to the recovery or regeneration of Indigenous knowledge through historic materials that can be used as memory triggers. Data repatriation also benefits communities as compiled data sets are useful for community planning and funding applications. The ATSIDA service also benefits researchers through its function as a link between communities and researchers, which offers a solution to the ongoing ethical obligation of returning research materials.

Key actions

- Identify and remove barriers to Māori accessing and using their own data. Barriers include financial costs associated with accessing data, as well as issues of data interoperability.
- Where data sets involve Māori data, the relevant Māori rights-holder or authority needs to give permission in order for the data to be open access.
- The benefits of using Māori data must be fairly shared with Māori.

Guiding questions

- What does our agency do to support Māori access to Māori data?
- What does our agency do to ensure that Māori data actually benefits Māori?
- What process does our agency have to ensure that the linkage of Māori data occurs in a safe and secure way?
- How do we ensure that Māori data is shared in safe and secure ways? Do people know that their data is being shared? Have they actively consented to this data sharing?
- Are our data sharing and linkage practices safe for smaller population groups? Do our sharing and linkage practices contribute to increasing distrust of government agencies?
- What Māori data does our agency hold that should be returned to appropriate Māori collectives? What is our process for repatriating Māori data?

Relevant documents

Access

- Stats NZ. (2020a). *Ngā Tikanga Paihere: A framework guiding ethical and culturally appropriate data use.* https://data.govt.nz/assets/data-ethics/Nga-Tikanga/Nga-Tikanga-Paihere-Guidelines-December-2020.pdf
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Sharing

- Indigenous Data Sovereignty Collab. (2022). *Indigenous data sovereignty and universities communiqué*. Communique developed at the 10th International Indigenous Research Conference 2022 (IIRC22), held 15–18 November, Ngā Pae o te Māramatanga (NPM), University of Auckland. https://www.maramatanga.ac.nz/project/ids22-communique
- RDA COVID-19 Indigenous Data Working Group. (2020). *GIDA-RDA COVID-19 Guidelines for data sharing respecting Indigenous data sovereignty.* https://www.gida-global.org/resources
- The Alberta First Nations Information Governance Centre. *Framework for a data sharing agreement.* http://www.afnigc.ca/main/includes/media/pdf/community%20resources/Data_Sharing_Agreement.pdf
- Warren-Mears, V. (n.d.). *Principles and models for data sharing agreements with American Indian/Alaska Native communities*. Available from https://static1.squarespace.com/static/58e9b10f9de4bb8d1fb5ebbc/t/592a6d81bebafb216b51a61b/1495952772545/Principles+and+Models+for+Data+Sharing+Agreements.pdf

Repatriation

- Aboriginal & Torres Strait Islander Data Archive. *Repatriation*. https://www.atsida.edu.au/protocols/atsida/repatriation
- First Nations Information Governance Centre (FNIGC). (2020). *A First Nations data governance strategy.* https://fnigc.ca/news/introducing-a-first-nations-data-governance-strategy/
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Pou 6

Data use and reuse

Used well, data has the potential to bring about transformational change through wiser decision-making and improved services that support whānau flourishing. Using data well requires agencies to address issues of consent, reframe data analysis to meet Māori priorities, and exercise the utmost care when developing and deploying algorithms and associated decision matrices.

A key issue for MDGov is the secondary use of data through data linkage, sharing or aggregation. In most cases, the primary uses of data have been explained and explicitly agreed to. However, problems arise when the data is subsequently used, shared or linked to other data for purposes that have not been consented to. Transparency is key. This issue is a timely one as the government considers potential changes to the Privacy Act 2020 that would broaden the Act's requirements for an individual to be notified when an agency collects their personal information indirectly through a third party. [59]

6.1

Consent

The principle of FPIC is essential to the ethical use of Māori data. This is a higher standard than assumed implicit consent or social licence. Consent must be sought and provided before any Māori data is used or shared. Individuals and collectives must have actively agreed to allow their data to be used or disclosed for additional purposes or shared with different organisations. When data is provided with an understanding that it will not be shared with other organisations, or integrated into other data sets, then that data should not be shared.

Consent relating to data collection and use/reuse is an **ongoing and negotiated process** rather than a check-box exercise that occurs at a single point in time. Individuals and collectives can actively agree to different forms of consent at different times. The consent negotiated between those who contribute data and those who collect and hold it will evolve depending on how data is used and the wider societal context changes. There are different types of consent that may be suitable or appropriate for different contexts.

Individual consent is seen to rest at the person-level. Many of the consent processes, in both administrative and research data collection contexts, are underpinned by the notion of individual consent. **Group and collective consent** aligns with collective rights, as affirmed in UNDRIP. The right or responsibility to give consent does not only rest with an individual, but sits more broadly with a collective. In many situations such as research ethics scenarios, consent is conceptualised as **time bound**. Data is increasingly stored for long periods of time (or indefinitely), meaning that **consent in perpetuity** may become more common. However, changes to consent when people move between life stages – such as when a child becomes old enough to legally consent for their own data, or when a person passes away – need to be actively addressed. **Bundled consent** relates to the grouping together of consent for a range of different data collections, uses and disclosure that may not be agreed to individually. Bundled consent occurs in relation to direct marketing where personal data must be provided so that an individual can access a product or service. Bundled consent could occur also in government services, where individuals are required

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[59] This proposed change would bring the Privacy Act 2020 into closer alignment with the European Union's General Data Protection Regulation (GDPR) which requires that an individual be informed of the processing of their personal information regardless of whether it is collected directly or indirectly, and in a clear and accessible form. Relatedly, the Government has also decided to establish a consumer data right in Aotearoa which will give individuals the right to decide which third parties they share data with; see https://www.mbie.govt.nz/business-and-employment/business/competition-regulation-and-policy/consumer-data-right/

to provide personal data to access a particular service. That data may subsequently be shared or used in ways that individuals would not necessarily consent to separately, or if service access was not contingent on providing consent. Increasingly, assumptions of **passive consent** are being made, particularly in relation to the use of administratively collected data. The IDI, for example, has assumed a social licence to integrate data from different agencies and services, rather than a model of data integration that relies on FPIC. Similarly, the unregulated use of data where consent cannot be provided remains a significant issue. Very strict limits must be placed on **unconsented** data use, such as CCTV footage that is captured by the Police. This needs to only be collected for a very specific purpose and with particular justifications. Seeking active FPIC should always be the aim of government organisations and agencies, in keeping with Aotearoa's obligations and responsibilities under UNDRIP. When there are deviations from this approach, the justification should be clear, explicit and carefully considered. Such decisions should involve Māori and be readily available to those from whom the data derives.

Although active and FPIC may be provided at a particular point in time, two potential examples further highlight how consent is an ongoing negotiated process that requires discussions between data users and data rights-holders.

(1) How does consent for data use that is agreed to by parents or caregivers on behalf of their children change when those children come of age? Can previous parental consent be revoked by (now adult) children?

(2) How does consent change when the data rights-holder passes away? Who decides whether that consent still applies, and what does the process of renegotiated consent between whānau and agencies look like?

Thinking critically about consent is important when making decisions about data sharing and data integration. Agencies may balance the costs, benefits and risks of sharing data with other organisations. The risks of data sharing are experienced by data right-holders while the main benefits of data sharing are government organisations or researchers with implied trickle-down benefits for individuals/collectives. These risks are exacerbated when people have not explicitly consented to data sharing under conditions of FPIC. From a legal standpoint, there is currently an exception to the fundamental concept of informed consent and self-determination over one's own data when such information will be used for statistical or research purposes. However, this conflicts directly with ethical data practices, UNDRIP and FPIC.

Agencies that are responsible for stewarding data are also responsible for ensuring that data is not shared when a guarantee (either implicit or explicit) has been made to individuals and/or collectives that such data would not be shared. There needs to be a clear and accessible classification or typology that makes explicit the forms of consent associated with data, including the uses and reuses, or types of sharing that have been explicitly consented to and are permitted. [60] This could be in the form of clear flags that indicate which data can or cannot be shared, integrated or used for particular purposes. This information must be publicly available and open for scrutiny to ensure that individuals, whānau and communities can monitor the ethical use of their data. Clear consent-related metadata also protects agencies and organisations against the unintentional misuse of data. Furthermore, when different data sets are integrated, this metadata on consent must be included so that it is possible to tell the types of consent that relate to each particular component of the integrated data set. This will help to avoid situations where information that has been provided with the understanding that it is only permitted for use in a particular context is integrated with other data to create a new secondary data set where the boundaries of consent are obscured and the data is thereby shared widely and used for non-consented purposes.

6.2
Ask the right questions

Māori research questions and analysis priorities should be the focus of data use and reuse. This is important because high-quality and meaningful data can still be used in harmful ways to answer 'poor' research questions. Rather than recreating deficit statistics or producing additional examples of BADDR data practices (see section 1.1), the use and reuse of data should make positive and meaningful contributions to Māori aspirations. This is related to, but distinct from, prioritising Māori information needs at the point of data collection (see section 3.1). It means asking questions and undertaking analysis that will: support flourishing whānau and taiao; improve services to Māori, and/or support devolution of services to Māori; reaffirm and strengthen connections to identity and place; and lead to better shared and autonomous decision-making between Tiriti partners.

Often, this will mean shifting the focus from Māori as the 'researched', with an implied or explicit deficit focus, to Māori as the data and research designers. It may also mean agencies and organisations actively examining their own shortcomings and exploring how the devolution of services back to Māori can improve outcomes. The questions that are asked should not be limited to what is currently possible. Asking difficult questions that require different data can help to strengthen and improve the data landscape for Māori, and provide a more fit-for-purpose evidence base.

Example:
Research that asks the wrong questions of iwi data

In the 1991 Census, information on iwi affiliation was collected at a national level for the first time in nearly a century. While respondents were only permitted to list one 'main iwi' and two other iwi that they had 'strong ties with', this still provided useful information for iwi leaders. However, this same data was also used in problematic ways by others, including in a research paper that ranked the 16 largest iwi populations according to socio-economic indicators available in the same Census data. [61] When exploring likely 'causes' of socio-economic difference between iwi populations, the paper identified correlations between levels of educational achievement, per capita income, and the proportion of the iwi population identifying as European. Gould (1996) speculated that Ngai Tahu came 'first' in these iwi rankings due to "Ngai Tahu's uniquely long exposure, thanks to eighteenth century whaling and sealing operations, to the presence of Europeans, and its position as a very small minority living as close neighbours to a much more numerous (and for many decades predominantly male) European community" (p. 177). On the other hand, Waikato and Tūhoe were ranked bottom of the list, with high levels of unemployment and low levels of income, educational attainment, and identification with European ethnicity. This was, problematically, interpreted as being due to Tūhoe's territory being "uniquely remote and inhospitable to Europeans, and indeed [being] the last area to succumb to the influence of British law, culture, and language – in so far, indeed, as it has yet done so' (Gould, 1996, pp. 177–178) and Waikato, post-raupatu, having "elected for many decades thereafter to live as far as they could in a sullen and resentful isolation, resisting the encroachment of European technology, education and medicine, and hostile to intermarriage with the European" (p. 178). In short, the research used Census iwi affiliation data to spuriously argue that population-level socio-economic outcomes for iwi are linked to acceptance of, or resistance to, 'European' modernisation.

6.3
Algorithms

Algorithms are widely used across the public service to support operational decision-making, with 27 agencies signing up to the government's Algorithm Charter (Stats NZ, 2020b). [62, 63] The Charter is a commitment by agencies to manage how algorithms are deployed in order to balance privacy and transparency and prevent unintended bias. Agencies use a simple risk matrix to assess the likelihood of an algorithm's unintended adverse outcome against its relative impact. Agencies that commit to the Charter are obliged to publicly report any of their algorithms in use that present either a high or moderate risk of an adverse outcome. The only explicit reference to Māori in the Charter is the partnership principle which states that a te ao Māori perspective should be embedded in the development and use of algorithms consistent with te Tiriti. Leaving aside the notion that there is a single te ao Māori perspective, how this is operationalised and complied with under the Charter is unclear.

A review of the Charter's operation in its first year found many of the signatory agencies lacked clarity about how to turn the Charter's high-level principles into concrete practice (Taylor Fry, 2021), indicating a likely implementation gap. Elsewhere, there have been concerns about the disconnect between the source

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[60] Elsewhere, meta-consent models have been proposed as a way of enabling people to design how and when, in the future, they would like to provide consent to the use of their personal data (usually health data) (Cumyn et al.,2021).

[61] See Gould (1996).

[62] For a list of agencies, see https://data.govt.nz/toolkit/data-ethics/government-algorithm-transparency-and-accountability/algorithm-charter/

[63] Operational algorithms interpret or evaluate information that results in, or materially informs, decisions that have a significant impact on individuals or groups.

of the data, those developing the algorithm, and those who are most likely to be adversely affected (Ministry of Health, 2019). Few agencies have formal governance groups to provide oversight on data use, including the use of algorithms. The Data Ethics Advisory Group was set up in 2019 to assist the government to "maximise opportunities and benefits from new and emerging uses of data, while responsibly managing potential risks and harms" (Weber et al., 2020, p. 3). However, an independent review identified several issues with purpose, membership, te Tiriti and function (Weber et al., 2020) and the group has not met since October 2020. [64]

While the Charter is a welcome initiative, responsible algorithm design and implementation requires governance, frameworks and organisation that go further than any particular algorithm, model or architecture. Working with communities is an essential aspect of responsible algorithm design because it provides pathways to improve systems when something goes wrong. It reflects the need for any data system to be self-reflective and responsive to both its users and to those who provide the data.

Implementing fairness, transparency and accountability requires building highly interdisciplinary teams, where technical solutions to ethical problems are considered valuable and worth pursuing, and ethics is embedded into the algorithm design from the outset. As an example, He Kokonga Hātepa is a framework for challenging "colonising inherencies" in algorithmic systems (Brown & Wilson, 2022). An appreciation of the structural and causal factors that drive problems – such as poverty, crime or climate change – is crucial, otherwise algorithms risk worsening these problems. For some problems, it may be the case that no intervention is better than a bad intervention. The misuse of algorithms, and AI more broadly, can cause real-world harms to those who are subjected to them; for example, false arrests, health care discrimination and punitive social welfare measures. The only way to know if something is working is to test it rigorously and maintain the connection with the people on the ground to ensure that the services designed are having the desired impact.

Currently there are few readily available options for people to challenge decisions made about them by public sector algorithms.

At a minimum, Māori should have the right under MDGov to:

- know whether their data is being used to develop and/or train machines or algorithms
- be free from data practices that are deceptive, manipulative, coercive, discriminatory and that cause harm to individuals or groups, whether that harm is intended or not, and
- interrogate and influence data practices and processes that affect them, including operational algorithms.

One way to address these requirements is to develop a government-wide register that identifies what algorithms are being used that might adversely affect Māori and what these algorithms involve. The description should avoid technical language, be readily understood by diverse communities, and be located on a website that is easy to find and navigate.[65] Research and development should proactively identify and mitigate potential data risks and harms to Māori at the outset of a proposal and monitor risk as part of best practice.

Key actions

- Use and share data ethically. Aim for FPIC, and at minimum, do not share data that has been provided with an explicit understanding that it will not be shared or integrated into other data sets.
- Ask the right questions of Māori data. Use Māori data to address questions that support progress towards MDGov and the Desired Outcomes of the Model. [66]
- Create structures to improve the responsible design and implementation of algorithms.

Guiding questions

- Is more data analysis needed in this context?
- Have I done my due diligence to understand what analysis has already been undertaken by my agency (and ideally other agencies) in relation to this issue?

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[64] https://data.govt.nz/leadership/advisory-governance/data-ethics-advisory-group/meeting-agendas/

[65] Data cataloguing and lineage tools could be used to partially automate this process, enabling the collation of upto-date information and a more time-effective approach. The use of such tools would be greatly assisted by the implementation of a Māori data classification framework.

[66] This could include the use of Open Digital Rights Language (ODRL), which is a policy expression computer language that can be used to code for permitted and prohibited actions over a certain asset, such as data.

- Is there a clear and demonstrable link between the proposed use/reuse of the data and a beneficial outcome for Māori? Are we using the right analytical lens to examine the data?
- Do we have free, informed and prior consent for the particular data use? What actions can we take to develop negotiated and ongoing consent throughout the use and reuse of data?
- Have any algorithms been tested, critiqued and retested? What will the impact of an algorithm be on Māori? What biases will be coded within the algorithm? What will the impact of algorithmic decision-making be on Māori?

Relevant documents

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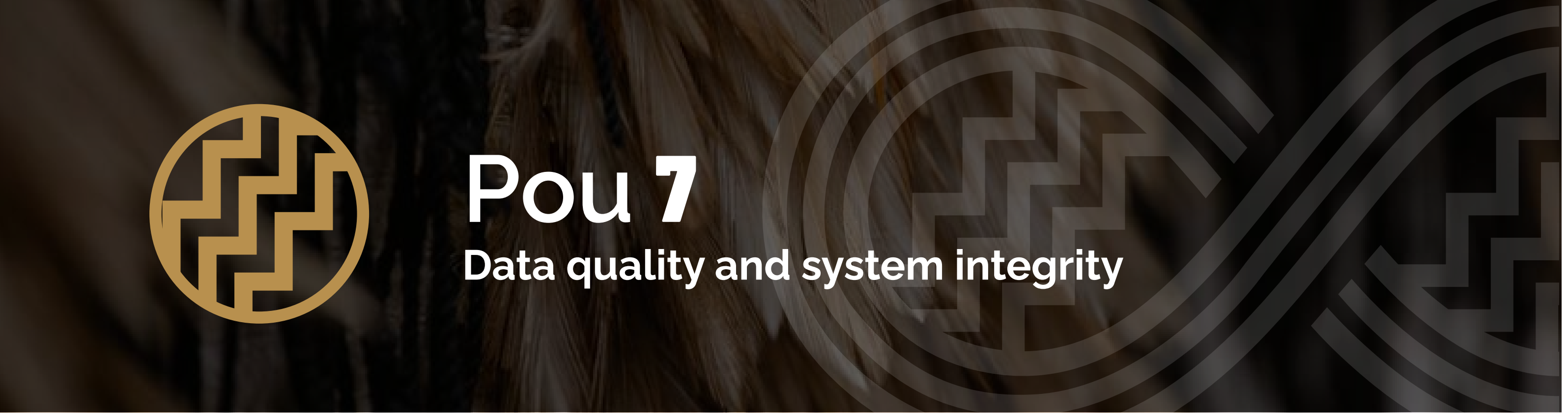

Pou 7

Data quality and system integrity

Data quality is key to making accurate, informed decisions. Increasing volumes of data and the introduction of new technologies make it challenging to avoid mistakes and maintain quality. While data quality has often been seen as synonymous with accuracy, the focus now tends to be on fitness for use in terms of user perspectives.

In addition to accuracy, data quality includes dimensions such as relevance, accessibility, timeliness and consistency. There is no single route to achieving an acceptable level of data quality that relies on decisions informed by a mix of knowledge, experience, assessment, consultation and judgement (Statistics New Zealand, 2007). Achieving high-quality Māori data depends on having the right systems in place and people with the appropriate knowledge and experience. Standards, auditing, monitoring and compliance are key tools for ensuring data quality and system integrity.

7.1
Setting standards

Data standards are documented agreements pertaining to some aspect of data quality. Standards cover a broad spectrum, from international standards ratified by a standards authority to more informal and evolving sets of rules developed for institutional use. Data standards help to reduce information gaps that are caused by siloed data residing within different systems with different quality controls and data definitions. A standardised approach can help generate greater value from data through improved interoperability. This makes it easier to combine, compare and analyse data from different sources.

Māori-defined data standards are important to establish a common approach to the collection, management and use of Māori data across the public service. As with any data standard, this would need to be properly resourced and enabled through the standards and guidance provisions in the Public Service Act 2020 (s. 57). Under section 57, subject to Ministerial approval, a system leader may set standards relating to the particular subject matter that they lead and coordinate, and chief executives must ensure that their agencies implement the standards that apply in or to them. Māori data standards should be developed in partnership with Māori (e.g., a Chief Māori Data Steward) and take account of tikanga, rather than transpose international dictates and assumptions including the use of proprietary standards. In the first instance, this would involve the identification of areas that might benefit from standardisation. Māori data standards would also assist iwi and Māori organisations to share data, where mutually beneficial, and to integrate data from external sources. There would need to be clarity about the critical factors required for the successful implementation of Māori data standards before developing them.

7.2
Monitoring

Monitoring is an important part of measuring system integrity. Elsewhere, the Model addresses the need for the right data to monitor Māori wellbeing over time, along with the impacts of government policies, decisions, actions and inactions. However, it is also important that data systems are routinely monitored for quality and performance. This includes attention to the differential performance and quality of data across government systems. A clear example of this is the ongoing issues with the quality of ethnicity data in the health system. While mandatory collection of ethnicity data has been in place since the mid-1990s, and there have been ethnicity data protocols for the health and disability sector since 2004, significant issues with ethnicity data quality for Māori remain (Harris et al., 2022). This means that analysis, algorithms or reporting that use this data are less reliable for Māori. Quality assurance processes should routinely and explicitly monitor the quality of data for Māori, so that at a minimum, the biases in the data can be understood, and more importantly, so that action can be taken to address quality issues.

Monitoring should also involve routine monitoring for both potential and actual data harm. This could take the form of harm registers where data harms are documented, as a first step in a restorative process. Models for this currently exist; for example, the *Data Harm Record* that monitors algorithmic harms (Redden et al., 2020). More broadly, there is the concept of risk registers in the health and safety context. This monitoring will also need to have a broad understanding of data harm that is wider than current concepts of personal data or data privacy to include, for example, the ways in which groups and societal interests are adversely affected by uses of data. In Aotearoa, experts have been worried about increases in misogyny, racism and anti-Māori content online, which has also become more severe and aggressive. Wāhine Māori are particularly targeted and face both misogyny and racism online. Around one third of Māori experience racism and racial harassment online.[67] Despite the risk of violence, including death threats, data on who is experiencing hate crimes is not being reliably recorded by Police.[68]

7.3
Accountability

A key precept of the Model is that MDGov should be a requirement – not a voluntary option – for any agency that interacts with Māori data. Organisations that collect, store and use Māori data need to be held accountable for providing culturally safe governance of Māori data, including private sector organisations that contract to government agencies. Within each organisation there should be at least one person who is responsible for maintaining the security of Māori data, and who should safeguard it against accidental or unauthorised access, disclosure, use, modification or deletion. The information of the person responsible for safeguarding Māori data should be publicly available and easily accessible. Organisations should also take steps to create and maintain registers of Māori data that include how Māori data is collected, used and disclosed, and which third parties Māori data is disclosed to.

Where agencies have acted in bad faith in relation to any aspect of Māori data governance, there should be clear consequences and processes that are followed to restore balance. These processes and potential consequences, as well as the types of actions that trigger them, will be determined by Māori. These could include limitations on the future collection, creation, use and disclosure of Māori data, as well as periods of data quarantine or rāhui where Māori data is transferred to a 'vault' for safekeeping and to prevent further misuse. This may need to be reiterated through the inclusion of conditions that outline restorative processes within data sharing or governance agreements.

Existing sanctions for the misuse of Māori data are inadequate. The widely used IDI requires researchers to sign a lifetime commitment under the Data and Statistics Act 2022 to keep the data confidential, as well as sign a contract agreeing to follow the rules and protocols surrounding the IDI. The data can only be accessed from a secure Data Lab, and all information is checked for privacy risks by Stats NZ before being released. If researchers break these protocols, they can be banned or blacklisted from the IDI or even prosecuted. A recent investigation reported that there were 24 policy breaches between 2015 and 2018, and 79 breaches between 2018 and November 2022.[69] Most were minor in nature and there were no instances of individual privacy being breached. Nevertheless, the potential for privacy breaches and for data harm to occur is likely to increase as the IDI adds more and more data and is accessed by more researchers. For Māori the risk may be greater, given the over-representation of Māori within target groups, and smaller population size.

Under the Privacy Act 2020, the Privacy Commissioner can issue compliance notices that require an agency to do something, or stop doing something, to comply with the Privacy Act 2020.[70] Refusing to comply with a compliance notice can result in fines of up to $10,000. However, the threat of a fine does not necessarily ensure that bad faith actions in relation to Māori data will cease. Moreover, because the Privacy Act focuses specifically on the protection of personal information about an identifiable individual, it is only a partial protection mechanism against the misuse of Māori data. Accountability not only requires agencies to put in place appropriate measures to govern Māori data, and to be able to show evidence of these measures,

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[67] https://www.teaomaori.news/increase-online-racism-towards-maori-concerning-experts

[68] https://www.rnz.co.nz/news/national/475627/police-unable-to-record-targeted-hate-crimes-despite-funding-dedicated-team

[69] https://www.stuff.co.nz/national/300783781/massive-government-database-had-rules-breached-more-than-100-times

[70] The term agency applies to any person, or body of people, including government departments, companies, small businesses, social clubs and other types of organisations, whether they are in the public or private sector.

but also to comply with sanctions when failures occur and take the necessary steps to restore balance.

Key actions

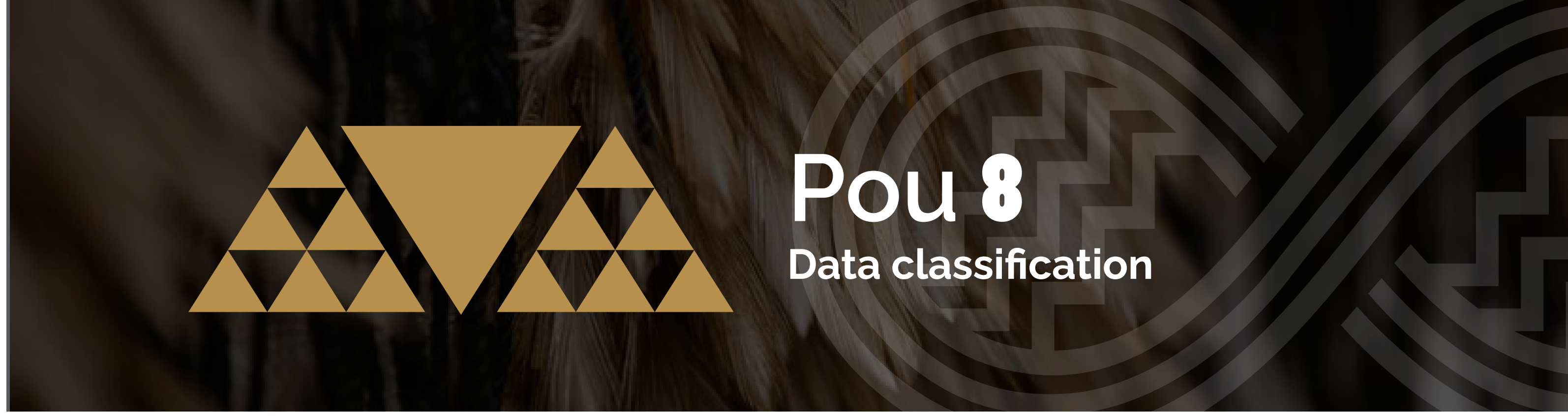
- Monitor, register and report for potential and actual data harms.
- Be ready and able to demonstrate the measures taken to collect, use, disclose and share Māori data in ways that are technically and culturally safe.

Guiding questions

- How do we currently monitor the quality and performance of our data systems in relation to MDGov? What do we need to do to effectively monitor our data systems?
- How do we currently monitor the potential and actual harm caused by our data practices? What steps could we take to improve the monitoring of data harms?
- Who in our organisation is responsible for maintaining the security of Māori data, and ensuring that the collection, storage, use/reuse and sharing of Māori data is culturally safe? What support do they need?
- What are our internal processes for ensuring accountability for data misuse or data harm?
- Internally, what are the consequences for addressing breaches of MDGov, including the misuse of Māori data?
- What processes do we have as an organisation for restoring balance with Māori in situations where data harm occurs, Māori data is misused, or any other aspects of MDGov are breached?
- What influence does our agency have with regards to how private organisations use Māori data?

Relevant documents

- *The Santa Clara Principles on Transparency and Accountability in Content Moderation* (version 2.0). https://santaclaraprinciples.org/
- Redden, J., Brand, J., & Terzieva, V. (2020). *Data Harm Record* (updated). Data Justice Lab. https://datajusticelab.org/data-harm-record/



Pou 8

Data classification

The genesis of Māori data is located in pūrākau - ancient cosmological accounts and narratives. Acquired and transmitted across millennia, these knowledge codes convey detailed information about creation, time, whakapapa, knowledge and the connections between all things. The creation stories, for example, begin with the state of Te Kore – the great nothingness – then to the realm of Te Pō – the perpetual night – followed by the separation of the celestial parents Ranginui and Papatuānuku, and finally entry into Te Ao Mārama – the world of light. For tūpuna, these knowledge codes provided a structure for understanding the nature of the world, and the fundamental relationships between humans and their environments.[71]

With the exponential growth in the volume and breadth of Māori data, innovative ways of making sense of data are needed – ways that both recognise pre-existing structures of thought in te ao Māori but are also alive to future possibilities and shifts. There are many possible ways to build a Māori data classification framework, and MDGov requires multiple layers and definitions.

For example, it is critical to know *which data:*

- should be classified as Māori data, and whether that classification is fixed regardless of context
- is of special significance to specific Māori collectives, in particular iwi and hapū as Tiriti partners (e.g., iwi affiliation, whakapapa, mātauranga)
- is for Māori, about Māori, by Māori
- requires special legal or extralegal protections (e.g., onshoring in a Māori-controlled data facility) or consideration (e.g., repatriation, some form of encryption)
- can generate potential, latent or actualised economic opportunities (e.g., commercialisation)
- is sensitive because, if disclosed or misused, has a greater risk of resulting in harm, regardless of intent.

Data may also be classified according to its degree of openness (e.g., public, internal, confidential, restricted), and by legal and extralegal forms of ownership and rights. An understanding of all of these dimensions is important for the implementation of the Model, hence the cross-cutting nature of this Pou.

An AoG Māori data classification framework is urgently needed, rather than a series of ad hoc, disconnected organisational decisions and practices. Such a classification should prioritise Māori values and tikanga (e.g., tapu, noa, mana, hau, mauri) and relational ways of thinking about data, and be Māori-led and designed. It is beyond the scope of this Model to provide an AoG Māori data classification framework or standard. Such an exercise is a significant undertaking requiring dedicated resource and expertise. However, the general points below provide a starting point for such an exercise.

8.1
Classifying Māori data

Below are some pointers on what NOT to do when classifying Māori data:

- Assume there is a self-evident, shared universal logic that structures data ontologies, regardless of context.
- Outsource the creation of data ontologies to a third party with no understanding of te ao Māori.
- Treat the boundaries between categories as sharply defined and exclusive, rather than fuzzy and (at times) fluid.

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[71] Our thanks to Robert Pouwhare for this kōrero given as part of the Tikanga in Technology research on Māori data privacy.

- Ignore the relationships between different types of data, and between data and the people and places from which it derives.
- Treat Māori data as existing on a continuum/spectrum of 'Māoriness'; for example, wrongly assuming that data can be classified as 'more' or 'less' Māori.
- Try to assess a given data set on the basis of what proportion can be classified as Māori data, then use an arbitrary threshold to decide if the data set should be subject to MDGov.
- Conflate the classification of Māori data with the data that Māori need. In practice, it is often necessary to be able to draw on wider populations in order to reach sound conclusions about a specific group, implement plans, understand the impacts of policy, and establish the effectiveness of interventions.

8.2
Metadata

Metadata is structured data that provides information about other data and shapes how content can be understood. Metadata makes it easier for users to retrieve, use or manage data, and encodes information about provenance. It enhances findability and enables content to be organised and understood in particular ways, including culturally specific ways. Metadata can also lend credibility and promote trust. The Institute of Electrical and Electronics Engineers (IEEE) – the leading developer of industry standards in a broad range of technologies – is currently supporting the development of recommended practice to establish and define a common set of parameters by which the provenance of Indigenous Peoples' data should be described and recorded. [72] Indigenous Peoples' data include data, information and knowledge – in any format – generated by Indigenous Peoples as well as by governments, the private sector and other institutions on and about Indigenous Peoples, their governments or non-human relations.

As with other forms of data, metadata is not universally objective – it can and does contain implicit and explicit biases. Metadata in government agencies and institutions has generally been created using Western knowledge constructs. Entire systems have, in turn, been designed around these constructs, reflecting the interests and contexts of those in control. The antidote to this is obvious: create systems based on Indigenous ontologies to make sense of Indigenous data (see, for example, Ngā Upoko Tukutuku). Whakapapa provides a ready ontological framework for describing provenance and relations, including descriptive metadata and controlled vocabularies. The creation of Indigenous fields within databases – such as library and archive systems – adds transparency and accountability.

As with some other aspects of the government data system, there is a low level of maturity when it comes to record-keeping, even though public offices and local authorities are required to meet the requirements of the Information and Records Management Standard (Archives New Zealand, 2016). The Standard sets out the minimum level of compliance that organisations must meet under the Public Records Act 2005. The Standard supports the rights of Māori, under the te Tiriti, to access, use and reuse information and records that are taonga, and organisations should ensure that information and records about Māori are accessible.

A recent Archives New Zealand survey of public sector information management found many agencies do not have a formal metadata scheme. This inevitably compromises their capacity to properly protect and steward Māori data. Of the 214 respondents in the report – which includes ministries, departments, councils, district health boards, parliament offices and education entities – just 39 per cent had identified information that they hold that was of importance to Māori (Archives New Zealand, 2021a).

Exemplar:
Traditional Knowledge labels

What does community-driven metadata development and application look like? Originating in the United States, but expanded to include Aotearoa, the Local Contexts Hub initiative is focused on increasing Indigenous involvement in data governance through the integration of Indigenous values into data systems using a range of tools including Traditional Knowledge (TK) labels. The TK labels enable Indigenous communities to add local protocols for access and use to digitised cultural heritage that is held externally (i.e., outside of community contexts), such as in public archives and libraries.

Using the TK labels, communities can identify and clarify community-specific rules and responsibilities regarding access and future use of traditional knowledge. This includes sacred and/or ceremonial material, material that has gender restrictions, seasonal conditions of use, and/or materials specifically designed for outreach purposes.
The TK label text is designed in a way that enables communities to customise the labels, thus allowing for specificity and context. The Local Context Hub also allows researchers and institutions to generate notices that identify and disclose Indigenous interests in collections and data.

Key actions

- With urgency, resource the development of an AoG Māori data classification framework that prioritises Māori ontologies.
- Promote and implement the AOG Māori data classification framework.
- Ensure that all Māori data has culturally appropriate metadata.

Guiding questions

- Does this organisation have a process to identify Māori data?
- What definitions and protocols are used to identify Māori data?
- Are there any special considerations (beyond business as usual) that are given to data that is identified as Māori data?

Relevant documents

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- Local Contexts: https://localcontexts.org/
- Ngā Upoko Tukutuku: https://natlib.govt.nz/librarians/nga-upoko-tuku-tuku

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[72] https://standards.ieee.org/ieee/2890/10318/ We thank Stephanie Carroll for sharing information on this IEEE initiative.

Part 3

Moving Forward

Moving forward

Aotearoa has long had an ambition to be a world leader in the trusted use of shared data but has lacked fit-for-purpose models, frameworks and systems. The development of the Māori Data Governance Model marks a significant break from past practice, not only elevating the importance of system-wide data governance, but doing so in a way that centres Māori values, priorities and aspirations by design. In so doing, the Model offers a very different vision globally of what good data governance and good data looks like.

While Māori are the primary beneficiaries of the Model, a data system that is genuinely trustworthy and people-centred will reduce harm and create benefits for all New Zealanders. The Crown's responsibilities to actively protect Māori data means that agencies also need to take stock of the broader settings within which the private sector collects, stores, uses and shares Māori data, and uphold MDGov requirements when procuring new technologies. The distinctiveness of MDGov, coupled with structural advantages such as low levels of government corruption and high levels of renewable energy for an expanding IT sector,[73] means Aotearoa is well positioned to develop a global reputation as a trusted, generative and safe home for high-value data resources.

Next steps

There are numerous models, frameworks, roadmaps and strategies being shared across the public service at any given time. However, many suffer from an implementation gap because they lack sufficient detail to be applied in an operational sense, and/or there are gaps in capacities, capabilities and resources. Recent audits and reviews have identified organisational capacity and capability limitations when it comes to data – and these gaps will be even more marked for Māori data. For the Model to have the desired impacts, and to transform the government 'top-down' data system to one that is Tiriti-led, will require a commitment to implementation that includes resourcing, policies and people. Stats NZ and the GCDS are mandated as system leaders and are well situated to lead implementation of the Model.

The Model has been designed to provide a comprehensive resource and guidance for agencies to engage with all aspects of MDGov (the eight Data Pou), but it is neither possible nor desirable to produce a document that prescribes all aspects of decision-making in relation to Māori data held by all agencies. The directives/actions and guiding questions provide a clear indication of how agencies can approach each Data Pou, although the detail of each agency's approach may well vary across different contexts.

Authority and oversight are key, and this report has set out very clear expectations for both. For Māori to have substantive authority over Māori data will require a number of changes in terms of system leadership, policies and legal settings. Stats NZ and the GCDS have well-defined responsibilities but have neither the mana nor the mandate to exercise authority over Māori data. That calls for the establishment of a Māori system leadership role – one that can act independently and in the interests of te ao Māori. Such a role or entity could take the primary responsibility for having oversight of the Model, developing resources and compliance mechanisms, and providing advice to agencies to assist them to effectively meet their MDGov commitments. The report has also identified the need for Māori data classification (Data Pou 8) as a matter of urgency. Having clarity over what constitutes Māori data, its level of sensitivity and its relationship to rights-holders, is integral to implementing the other Data Pou in the Model.

While changing regulatory settings will take time, there are a number of approaches that agencies might adopt to support the implementation of MDGov. This might include sharing examples of using Māori data, including the challenges and the opportunities, in order to help build a community of practice in a safe and enabling environment. Standards and codes under various Acts also offer opportunities to build the scaffolding required for embedding MDGov across the government data system. There are also some big decisions to be made – particularly with regards to the

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[73] For an overview of Māori tech companies, see Pāua Interface (2023).

accountabilities of Big Tech platforms– that lie beyond the purview of individual agencies and that require a co-ordinated government response. Addressing power imbalances is crucial. There will be limits to what legislation can achieve – perhaps more powerful will be 'bottom-up' tactics, tools and policies that shift cultures and practices and enable individuals, whānau and communities to have a meaningful say in how their information is used. To that end, there will always be limits to what can be achieved within government systems. Aiming for the strongest possible version of MDGov in a Tiriti-led system is a lofty but achievable goal. However, for Māori – and especially for iwi and hapū to have sovereignty over their data – this will require investment in a future system that sits outside of government architecture. As such, there is a strong case to be made for immediate investment in the design, development and implementation of Māori data infrastructure, capacity and capability, starting with iwi and hapū. Recent climate change events and the COVID-19 pandemic have revealed the limitations of highly centralised approaches to data. Building resilience to future shocks and challenges requires building data systems that are responsive to regional and community informational needs and priorities. For Aotearoa's future data ecosystem to be fit for purpose and resilient, both the governance of Māori data and data for Māori governance are complementary and necessary.

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Appendix:

International and local scoping review of existing data governance frameworks

	DOCUMENT	ORGANISATION/ AUTHOR	SUMMARY	URL
INTERNATIONAL				
i) Indigenous	First Nations Data Governance Strategy (FNDGS)	First Nations Information Governance Centre (FNIGC)	The FNDGS is Canada's first national strategy to further FNIGC's vision that every First Nation will achieve data sovereignty in alignment with its distinct world view. This work is a response to First Nations' calls for authority and control over their own information with the ultimate goal of addressing socio-economic and health outcome inequalities. The strategy was funded through the 2018 Canada Federal Budget in response to a resolution by the Chiefs-in-Assembly calling for the Federal Government to fund the development of a national data governance strategy and the establishment of 10 regional data governance centres. The strategy includes a framework, a vision, desired outcomes, guiding principles, and key pillars for action for First Nations-led data governance and stewardship, and provides an overview of the key drivers for change. The strategy also includes a phased implementation strategy that is tied to key success factors with considerations for how success will be tracked and reported. The strategy is focused on building First Nations data infrastructure and capacity, and fostering community-driven and nation-based collaborative approaches. It is a bottom-up strategy and leverages 20+ years of dialogue and work while building relationships, trust and credibility. The strategy also connects to other policy initiatives and goals to demonstrate how investing in First Nations data infrastructure will help achieve other wellbeing outcomes. The strategy positions itself inherently within First Nations' aspirations as a requisite to transform and further advance self-determination and self-governance, and as a mechanism for the devolution of services back to First Nations governments. This positioning is rooted in the principles of the UNDRIP and FNIGC claim that the adoption of this strategy would be a concrete step towards UNDRIP implementation in Canada. The audience is primarily the Federal Government, and the recommendations are mainly to do with investment to enable FNIGC to achieve the key outcomes.	https://fnigc.ca/wp-content/uploads/2020/09/FNIGC_FNDGS_report_EN_FINAL.pdf
	First Nations Data Governance Agreement	Chiefs of Ontario (COO) and The Institute for Clinical Evaluative Sciences (ICES)	The First Nations Data Governance Agreement is a comprehensive and innovative collaboration between ICES and COO. The Agreement enables ICES to carry out health-related analyses for COO and the First Nations communities that COO supports and whom it advocates. The purpose of the Agreement is for First Nations to explore, among other things, opportunities for First Nations health research and surveillance in a manner that respects OCAP principles; to provide for the privacy and security of personal information collected; to govern the collection, creation, use and disclosure of First Nations data in a manner that respects OCAP principles; and to build First Nations' capacity for health research and analysis. The Agreement contains stringent conditions for confidentiality and both parties agree to many precautions and safeguards for the handling of Internal Revenue Service (IRS) data, including protecting the privacy and confidentiality of IRS data according to the same standards and security measures as if it were personal health information. Both parties recognise the importance to both First Nations and the public of building First Nations' capacity and expertise in the area of population health research, and shall work together to secure funding and opportunities for mentorship and other education opportunities. The Agreement also contains conditions for breaches and the parties will advise on the process to correct any such default and to prevent any recurrence. In the event that the parties have a reasonable belief that someone has failed to comply with the limitations on collection,	https://www.ices.on.ca/Research/Collaborations-Partnerships/Chiefs-of-Ontario

	DOCUMENT	ORGANISATION/ AUTHOR	SUMMARY	URL
INTERNATIONAL				
			creation, use and disclosure of First Nations data and the security requirements of the Agreement, they may face the consequence of a data quarantine of all First Nations data for a period of up to 90 days. In the event of a data quarantine, no First Nations data shall be created, used, accessed or disclosed, and all data will be transferred to a vault for safekeeping for the duration of the data quarantine.	
	AIATSIS Code of Ethics for Aboriginal and Torres Strait Island Research (the AIATSIS Code)	Australian Institute of Aboriginal and Torres Strait Islander Studies	The AIATSIS Code respects Aboriginal and Torres Strait Islander rights as articulated in the UNDRIP, and as such respects their values and world views and their right to be fully engaged in any processes, projects and activities that may have an impact on them. The Code outlines four main principles that underpin ethical Australian Indigenous research and each principle presents a set of responsibilities for researchers, institutions and review bodies when conducting Aboriginal and Torres Strait Islander research. The Code sets national standards for the ethical and responsible conduct of all research across all disciplines and methodologies and is for use by those undertaking research, reviewing research or funding research, including individuals, universities, governments, industry and community organisations. It also aims to increase the contribution of Indigenous knowledge to Australian research, to ensure research has a positive impact for Aboriginal and Torres Strait Islander Peoples, and to continuously improve the quality and standards of research in this area. The AIATSIS Code is issued pursuant to AIATSIS's legislative function to provide leadership in ethics. Compliance with this Code is required for all research funded by or undertaken under the auspices of AIATSIS, the Australian Research Council (ARC) the National Health and Medical Research Council (NHMRC), and other institutions or bodies that have adopted the AIATSIS Code.	https://aiatsis.gov.au/research/ethical-research/code-ethics
	Framework for a Data Sharing Agreement	The Alberta First Nation Information Governance Centre	This document is a community template or guideline of considerations for the development of a First Nation data sharing agreement to help determine First Nation priorities in data governance. This framework is a tool for First Nation partners to establish their sovereign rights as individual nations and become self-determining in their information governance. The development of a data sharing agreement should outline the nature of the partnership especially with non-Indigenous institutions, what kind of sharing should occur and if it is just a one-off event, what type of data is being shared, the purpose of data sharing, and the scope of work. The data sharing agreement may also include descriptions of any data flow, data linkages and transfer of data, and provide details on the approved uses and disclosures of data. Lastly, the agreement should make clear what legal authority either or both the parties have and require in order to participate in the data sharing.	https://www.afnigc.ca/main/includes/media/pdf/community%20resources/Data_Sharing_Agreement.pdf
	Principles and Models for Data Sharing Agreements with American Indian/Alaska Native Communities	Victoria Warren-Mears	This document provides guidance for researchers and their tribal partners on how to develop data sharing agreements. It also addresses research ethics, data ownership, and principles and models for the development of those data sharing agreements. The author writes that data use agreements and/or memoranda of understanding are critical to ensure data protection and confidentiality under the circumstances that the data used includes protected health information or personal identifying elements. Research agreements are useful tools for setting the agenda of the agreed work programme, delineating potential risks and benefits, and defining the roles and responsibilities of all parties, as well as provisions related to data ownership, control, access and possession.	https://static1.squarespace.com/static/58e9b10f9de4bb8d1fb5ebbc/t/592a6d81bebafb216b51a61b/1495952772545/Principles+and+Models+for+Data+Sharing+Agreements.pdf

	DOCUMENT	ORGANISATION/ AUTHOR	SUMMARY	URL
INTERNATIONAL				
			Key components of data sharing agreements would also include the purpose of the data collection and why it is important to the tribe, the expected outcome of the project, who will have access to the data and for what purposes, how the data will be managed, handled and stored (including security measures), how the results will be shared, and who will have the authority to approve the collection, use and sharing of the data.	
	British Columbia First Nations' Data Governance Initiative Data Governance Framework	British Columbia First Nations' Data Governance Initiative (BCFNDGI)	The British Columbia First Nations' Data Governance Initiative (BCFNDGI) is an integrated approach to data for British Columbia First Nations to move towards a model of development and wellness that is self-governing, community-driven and nation-based. The goal of the BCFNDGI Data Governance Framework is to provide a comprehensive framework with specified tools and processes that establish and actualise British Columbia First Nations' direct and active involvement in owning and controlling First Nations data. The framework is a collection of strategy, structure, legislation and policy, and related tools.	https://www.bcfndgi.com/
	CARE Principles for Indigenous Data Governance	Global Indigenous Data Alliance (GIDA)	The CARE principles were developed by members of the Global Indigenous Data Alliance to provide a set of high-level directives on the governance of Indigenous data, particularly Indigenous research data. The four principles that anchor CARE stand for Collective benefit, Authority to control, Responsibility and Ethics. The preamble to CARE acknowledges the tensions between the push for open data and data sharing, and the rights of Indigenous Peoples to have control over the application and use of Indigenous data. The principles are intended to complement the existing FAIR principles for scientific data management and stewardship (Findable, Accessible, Interoperable, Reusable).	https://www.gida-global.org/care
	Indigenous Peoples' Rights in Data	Global Indigenous Data Alliance (GIDA)	GIDA has also developed a set of 12 rights for Indigenous Peoples' rights in data. The rights are articulated in terms of data for governance (right to self-determination, right to possess, right to use, right to consent, right to refuse, right to reclaim) and governance of data (right to govern, right to define, right to privacy, right to know, right to association, right to benefit).	https://www.gida-global.org/new-page-1
ii) Mainstream	Data Governance Australia (DGA) Draft Code of Practice	Data Governance Australia	Data Governance Australia (DGA) sets industry standards and benchmarks for the responsible and ethical collection, use and management of data in Australia. As a condition of association with DGA, members are bound to follow both the Draft Code of Practice and any Code guidelines issued during the time of their membership. Members also need to ensure that all of their interactions with data follow all Code Principles. Application of the Code is overseen and administered by the Code Authority, which consists of seven members. The Code Authority is empowered to make determinations about Code compliance. It is a fundamental condition for compliance with this Code that a Code Organisation complies with all applicable laws in relation to data and privacy. The development of this Code is part of an ongoing effort to promote a culture of best practice with a focus on data practices in Australia.	https://apo.org.au/node/97966

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	Ngā Tikanga Paihere: A Framework Guiding Ethical and Culturally Appropriate Data Use	Stats NZ	Ngā Tikanga Paihere is a framework that helps guide ethical and culturally appropriate data use. It draws on five principles and ten tikanga to help establish goals, boundaries and principles that guide and inform data practice. The tikanga that anchor each of the five principles present detailed explanations of their meaning, the expectations they relate to, and the things to consider. The framework applies to all research applications that touch on Māori development topics and should also be used when research topics are not explicitly focused on Māori but still might be of interest to Māori. Ngā Tikanga Paihere was originally designed to help Stats NZ manage access to microdata in the IDI but is now exploring other areas in which it can guide responsible and ethical data use. The framework also discusses human rights considerations.	https://data.govt.nz/assets/data-ethics/Nga-Tikanga/Nga-Tikanga-Paihere-Guidelines-December-2020.pdf
	The Five Safes Framework	Stats NZ	Alongside Ngā Tikanga Paihere, Stats NZ uses the Five Safes framework to manage safe access to de-identified data about New Zealand people, households and businesses available from the IDI and to ensure that the data is used safely. The Five Safes framework is a set of conditions that data users and researchers need to meet in order for Stats NZ to provide access to integrated data. Under each of the 'five safes' (safe people, safe projects, safe settings, safe data, safe output), there are layers of rules and responsibilities for both first access and continued access to the de-identified data. Researchers who break Stats NZ protocols can be banned, blacklisted or prosecuted. Before researchers can access the data, they must pass referee checks, attend confidentiality training, sign a confidentiality certificate (under the Data and Statistics Act 2022), sign a contract agreeing to follow all Stats NZ rules and protocols, and have capability to use the data. Researchers must prove their research project is in the interest of the public and is likely to have a wide benefit. There are also a range of safety, privacy and security protocols that researchers must meet to keep data safe, and data can only be accessed via research facilities approved by Stats NZ. At the data output stage, all information is checked to ensure it does not contain any identifying results. Results that could potentially identify individuals will not be released.	https://www.stats.govt.nz/inte grated-data/how-we-keep-integrated-data-safe/#five
	He Ara Waiora	The Treasury	He Ara Waiora is a framework built on te ao Māori knowledge and perspectives on wellbeing and helps to apply an Indigenous and uniquely Aotearoa approach to lifting living standards. The framework is intergenerational in scope and speaks to a broad conception of human wellbeing. He Ara Waiora is intended to prompt deeper thought and questions that can improve policy analysis and guide policy and operational processes. The aim of the framework is to help public servants learn and apply a stronger understanding of key wellbeing-related Māori concepts. Over time, the framework will enable stronger evaluative thinking about the wellbeing impacts of government policies. He Ara Waiora talks about ENDS (what outcome domains are important) and MEANS (what approaches and processes the public sector needs to follow to achieve the ends). At the centre of the framework is wairua, to reflect the source of wellbeing. The wellbeing of te taiao (the natural world) is recognised as inextricable from human wellbeing. Te ira tangata encapsulates human activities and relationships and is linked to identity, participation, decision-making, and the power to grow sustainable, intergenerational prosperity. MEANS also presents principles for how to approach the creation of waiora.	https://www.treasury.govt.nz/sites/defaultfiles/2021-05/He%20Ara%20Waiora%20-%20brief%20overview%20A3.pdf

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	The Data Protection and Use Policy (DPUP)	Toi Hau Tāngata | Social Wellbeing Agency	The Data Protection and Use Policy (DPUP) was developed by Toi Hau Tāngata | the Social Wellbeing Agency to provide a shared set of rules for the respectful, trusted and transparent collection and use of data or information about people, whānau and communities. DPUP was developed for government agencies, non-governmental agencies and other service providers that collect people's information, use it in their work, or define or design new services or contracts that rely on it to enhance services. DPUP provides good-practice advice about collecting and using people's information. It recommends practices that in some places go beyond the law, and in those situations says clearly why. DPUP is not mandatory, but agencies are encouraged to adopt it in a way that makes the most sense for their agency, their work and their communities. As such, DPUP is not legal advice. DPUP consists of five principles and four guidelines which make up the policy, and includes practical guidance so agencies can use it in their work. The principles focus on values and behaviours to help ensure data practices focus on the wellbeing of people and communities. It helps to clarify the 'why' when thinking about collecting or using people's information. Some important messages are to only collect what is needed and how collection or use of people's information could affect their wellbeing.	https://www.digital.govt.nz/standards-and-guidance/privacy-security-and-risk/privacy/data-protection-and-use-policy-dpup/
	Privacy, Human Rights and Ethics Framework (PHRaE)	Ministry of Social Development	The Privacy, Human Rights and Ethics Framework (PHRaE) is a set of capability and tools with which users of information interact to ensure that people's Privacy (P), Human Rights (HR) and Ethics (E) are considered from the design stage of a new initiative. The desired outcomes of PHRaE are to identify and address risks associated with the collection, use and disclosure of personal information, and to ensure that information is used in a responsible, transparent and trustworthy way. The framework engages projects to have iterative and active discussion throughout the project's life cycle about the P, HR and E interests of people whose information they are using. The tools prompt discussion and capture the evidence of how the project has considered the P, HR and E and the basis for decision-making in relation to these rights. The PHRaE combines the previously separate processes for privacy impact, human rights and ethical assessments, enabling a more streamlined and consistent approach. Projects must engage with the PHRaE process as soon as a proposal to use personal information moves beyond a mere idea and complete the interactive tool as they develop the project. A PHRaE Lead will be assigned to the project, who provides guidance on the process and works with the project throughout the design and development cycle. There are two formal review points in the process. The first will follow an early workshop and inform decisions about whether to progress to detailed design and development. The second review will be carried out once the final design of the proposal is agreed. The Lead will produce a final report documenting the process of identifying the PHRaE risks and how these are to be mitigated. By the final review, all significant risks should have been addressed or accepted by the business owner.	https://www.msd.govt.nz/documents/about-msd-and-our-work/work-programmes/initiatives/phrae/phrae-on-a-page.pdf
	National Ethical Standards for Health and Disability Research and Quality Improvement	National Ethics Advisory Committee	The National Ethical Standards for Health and Disability Research and Quality Improvement applies to all health and disability research and quality improvement in New Zealand and sets out ethical requirements that researchers must meet or exceed when undertaking research in this field. The standards set out minimum expectations for Māori involvement in research, specifically with regards to general guidelines on Māori involvement in research projects, Māori-centred research, and kaupapa Māori research.	https://neac.health.govt.nz/assets/Uploads/NEAC/publications/national-ethical-standards-health-disability-research-quality-improvement-2019-v3.pdf

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			The standards help to foster awareness of all researchers, including new researchers and in-training researchers, of ethical principles and enhance more rapid translation of research into clinical practice and health services delivery. The standards are primarily aimed at researchers because researchers have the main responsibility for conducting ethical research. Increasingly, health research and quality improvement involve responsibilities that are broader, extending to institutions and organisations. The standards will also be of interest to others with a role or interest in health and disability research, including review bodies, industry, custodians, clinical managers or individuals with institutional oversight of research, government departments and research participants (individuals and communities).	
	Metro Auckland Data Sharing Framework	Auckland-Waitemata District Health Boards Alliance and Counties Manukau Health	The Metro Auckland Data Sharing Framework is a suite of guidelines, policies and processes set up by the Metro Auckland Data Stewardship Group of the healthAlliance that outline how the Metro Auckland Data Sharing Programme will comply with the requirements of the Privacy Act and the Health Information Privacy Code (HIPC); in particular, how complaints and privacy breaches will be managed, how Māori rights or interests in data are considered, and the governance structure of the programme. The desired outcome of the programme is to support enhanced sharing of health data for the purpose of improving patient care and population health outcomes. Māori rights and interests in data are recognised within the governance and operations of the framework.	No URL available
	National Kaitiaki Group	Ministry of Health	The National Kaitiaki Group ensures protection of Māori women's cervical screening data and promotes the benefits of screening for Māori women. The group considers applications for approval to disclose or use or publish protected information and to grant approval for such disclosure or use or publication in appropriate cases. Protected information in this context is information that is on or from the National Cervical Screening Programme register, and that identifies the woman or women to whom the information relates to being Māori. Anyone who wishes to use the cervical screening data of Māori women must apply to the National Kaitiaki Group for permission. The group serves to protect Māori women's cervical screening data by ensuring that the data is not used or published inappropriately or in a way that reflects negatively on Māori, and is used to benefit Māori women. In a practical sense, the group is providing a way to reassure Māori women that their data is protected and that they can safely continue participating in the programme.	https://www.health.govt.nz/our-work/populations/maori-health/national-kaitiaki-group
	Education (Pastoral Care of Tertiary and International Learners) Code of Practice 2021	Ministry of Education	The overall purpose of the Education (Pastoral Care of Tertiary and International Learners) Code of Practice 2021 is to develop a system of support for the wellbeing and safety of domestic tertiary and international learners. The Code is a clear set of rules and expectations for providers to focus on outcomes and flexible practices that enable the support of learners' needs. The Code reflects key aspects of the learner experience including accommodation, mental health, and support for learners with disabilities, as well as information specifically for international learners around agents, enrolment and contracts. Under the Code, providers are expected to consult with learners and other stakeholders when developing, reviewing and improving their strategic goals, plans and practices. The New Zealand Qualifications Authority (NZQA) is the Code administrator and is responsible for monitoring and supporting providers to give effect to the Code. NZQA also provides advice and guidance to providers and learners, approves applications to become a Code Signatory, and monitors providers' compliance with the Code. All tertiary education providers and schools enrolling international learners are required to comply with the Code. When warranted, NZQA will investigate complaints and referrals about Code breaches and take appropriate action to address proven breaches by providers. Some of NZQA's monitoring responsibilities have been delegated to Universities New Zealand.	https://www.enz.govt.nz/assets/Education-Pastoral-Care-of-Tertiary-and-International-Learners-Code-of-Practice-2021.pdf
	The Malaghan Institute of Medical Research Immune Tissue Bank	Malaghan Institute of Medical Research	The Malaghan Institute of Medical Research Immune Tissue Bank holds certain blood, cell and tissue samples that have been donated to the Malaghan Institute for research use. The research aims of the Immune Tissue Bank is to help diagnose, prevent or treat illnesses such as cancer, infectious diseases and inflammatory disorders. The Immune Tissue Bank has ethical approval from the Ministry of Health's Health and Disability Ethics Committee, and has its own governance group comprising medical, scientific, layperson and Māori representation. The governance group reviews applications to store samples within the Immune Tissue Bank, as well as applications to use the stored samples for research. Sample donations to the Immune Tissue Bank studies and clinical trials are labelled with a study number and not with direct identifiers. However, sample donations may be re-identified from the stored consent forms signed by participants, so that approved researchers can link research findings with relevant clinical information. Only authorised researchers may gain access to the stored consent forms. At any time a participant can request that their stored samples be destroyed.	https://www.malaghan.org.nz/our-expertise/immune-tissue-bank/

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