

**Report to the Minister of Statistics:
Responding to the Algorithm Assessment report**

Date	6 June 2019	Priority	Medium	Ref number	MM1859
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Timeline and next steps

Decision or action required by:	10 June 2019
Will be discussed at:	Meeting with Stats NZ officials on 10 June 2019
Purpose	<ul style="list-style-type: none"> This briefing outlines options for a government response to the recommendations from the Algorithm Assessment report. Officials have reviewed a discussion document about the report and consulted informally on these options with agencies who hold significant government data.
Linkages	<ul style="list-style-type: none"> This work follows the review published in October 2018 that provided recommendations that could help New Zealanders to be informed, and have confidence, in how the government uses algorithms to inform significant decisions about individuals
Publicity	<ul style="list-style-type: none"> A draft version of this briefing was circulated to agencies involved in the Algorithm Assessment report for their feedback during the week of 27 May 2019.

Recommended action

It is recommended that you:

- Discuss** this briefing and the options at your officials' meeting and provide direction on the preferred next steps;
AGREE / DISAGREE
- Agree** that the options should be circulated to Digital and Data Ministers at their meeting on 17 June 2019 for their consideration;
AGREE / DISAGREE
- Note** that following discussion with Ministers, we will develop a detailed paper on the implementation of the preferred option(s).
AGREE / DISAGREE
- Note** the recommendation of a combination of options 3 and 4.
AGREE / DISAGREE



Adrienne Moor
**Senior Manager
Policy and Strategy**

Hon James Shaw
Minister of Statistics
Date:

It's essential that government uses public data ethically and transparently

1. Algorithms, and other advanced data analytics, are playing an increasingly valuable part in supporting Government decision making. These techniques can reduce or eliminate the subjective elements of decision-making, allowing us to understand more about Aotearoa New Zealand, and its people and natural environment, by revealing trends and patterns that would otherwise go unnoticed, or overlooked.
2. Algorithms have also transformed the design and delivery of public services, creating significant savings to the taxpayer, while also improving and streamlining the everyday interactions of the New Zealand public with government agencies, in everything from collecting revenue and paying benefits and entitlements, to supporting and protecting our most vulnerable people.
3. However, technology is moving rapidly, and we must ensure that we embed the ethics and values that underpin the current relationship between the Government and the people of New Zealand, into this evolving landscape. Accountability and transparency are essential to fostering trust, confidence, and integrity around the use of data the government holds on behalf of New Zealanders.

Algorithmic transparency has become a global issue

4. Other countries agree that transparency, consultation and review are essential part of a robust regime for government. Many jurisdictions' work on algorithmic transparency has been linked to Artificial Intelligence, and as this is still a field that is developing, the focus has been on high level principles or links to business innovation and economic growth.
5. Although few nations have considered the issue of government algorithms specifically, France is an example of a jurisdiction where algorithmic transparency has been legislated. However, this has created real challenges for agencies to try and find effective ways to implement this into their current practice, for example applying new legislation to existing algorithms.
6. Canada has not legislated the use of algorithms, but Open and Transparent Government team has proposed that Canada create protections from algorithmic bias. The team has also proposed the creation of a national forum to consider digital freedoms and the impact an increasingly digital world on social cohesion.
7. The events in Christchurch, and the recently agreed 'Christchurch call' have reinforced the need for the responsible use of digital tools and platforms. While the algorithm assessment and next steps for this do not yet extend to private or social media algorithms, this work supports the considered and transparent use of algorithms by government agencies.

This project contributes to the wider digital government landscape

8. New Zealand is a member of the Open Government Partnership, which brings together government and civil society leaders from across the globe to create action plans that make governments more inclusive, open, responsive and accountable. There is currently 79 OGP participating countries, who have made a combined 3,100 commitments to make their governments more open and accountable.
9. As a part of the 2018-2020 Open Government Partnership Action Plan, Stats NZ have committed to working in partnership with civil society to make government algorithms more transparent and accountable.
10. The work of this project aligns with the Digital Economy and Digital Inclusion Ministerial Advisory Group's activity around growing the digital economy and reducing digital divides.

Work is underway to improve government transparency and accountability

11. We've previously advised you about our work programme to strengthen protection of New Zealanders' data and digital rights, which include supporting government to find the right balance between delivering increased public benefit through data use, and stewarding data in a way that is acceptable to society and keeps individuals safe [Briefing MM1735 refers].

12. An important first step was for the Privacy Commissioner and the Government Chief Data Steward publishing six Principles to support safe and effective data and analytics. The aim of the principles is to enable stronger, more secure, and safer data use.
13. In May 2018 you and the then-Minister of Government Digital Services co-commissioned the Government Chief Data Steward (GCDS), in partnership with the Government Chief Digital Officer (GCDO), to review existing government algorithms and their uses across government as a first step to increasing transparency in this area [report MM1789 refers].

Our initial assessment revealed opportunities for improvement across government

14. We undertook this assessment, working with fourteen agencies (listed as appendix 2) that have significant data and analytics capability, reviewing how government uses algorithms to improve the lives of New Zealanders and assessing this against the Principles. The review, published in October 2018, provided recommendations that could help New Zealanders to be informed, and have confidence, in how the government uses algorithms to inform significant decisions about individuals [Briefing MM1811 refers].
15. All the agencies that participated in this review reported that they take data governance seriously. These agencies are applying a range of safeguards and assurance processes in relation to their use of algorithms. However, practices vary between organisations. There are therefore opportunities to put in place measures that would raise the consistency of algorithm governance across the public sector.
16. On 31 October 2018, you met with other Digital and Data Ministers to discuss the report and to consider the recommendations. It was agreed that the GCDS and GCDO should work across government to develop a proposal for Cabinet that would respond to the recommendations of the report. The item for the next Digital and Data Ministers meeting invites a discussion on the options presented in this briefing.

The importance of this work requires a cross-government response

17. Responding to the recommendations of the review will allow New Zealand to contribute to a global dialogue about appropriate use of algorithms by government. We are in a unique position to build on the momentum from this work and provide long-term benefit to New Zealand's analytics workforce, as well as position New Zealand internationally as a thought leader in this space.
18. We've discussed possible responses with a range of large data agencies across government¹. Although each agency had different perspectives, we heard some common themes:
 - Agencies are eager to share their learnings (tools and guidance) and are keen to develop a way to formally collaborate and share ideas across government.
 - While agencies would welcome practical guidance from functional leads, they feel their current arrangements are enough to allow them to respond to the recommendations made as part of the Algorithm Assessment review.
 - Challenges around embedding ethical training in the workforce are common across agencies, with both recruitment and ongoing professional development a common area of focus.
 - While agencies support centralised activity to enhance transparency and accountability for algorithms, there is minimal resource available to dedicate to this.
19. Based on this feedback, we believe there are several possible ways to increase the New Zealand public's trust in government use of algorithms; solutions could focus on communications

¹ A discussion document was sent to all departmental agencies and followed with a workshop. Specific follow-up meetings were held with; The Ministry of Social Development, The Ministry for Business, Innovation and Employment (Including Immigration New Zealand), The Joint Border Analytics centre (including Customs and Biosecurity), Inland Revenue, The Accident Compensation Corporation and the Social Investment Agency.

about existing algorithms, and a longer-term response where focus is given to lifting the quality of future algorithms by investing in the Analytics profession.

We've identified several possible options to advance this work

20. As a functional lead, the GCDS will continue to work with agencies to identify and develop methods for greater collaboration and sharing of tools, guidance and lessons learnt on algorithms across government irrespective of the option selected.
21. The GCDS will also enact one of the specific recommendations of the Algorithm Assessment review, to allow government agencies to seek independent, expert advice. The Advisory Group on Trusted Data will go some way towards addressing the report recommendations on ethical development and procurement of algorithms.
22. The GDCO will develop a shared virtual workspace where agencies can share their examples of good practice. This will help support a 'community of practice' where agencies can share their experience and seek guidance from one another. The GDCO is exploring potential projects with the Service Innovation Lab to support transparency and the 'community of practice'.
23. The following four options have been developed to deliver a formal Government response to the recommendations of the Algorithm Assessment review, to achieve the long-term goal of building public trust by working across government to improve the transparency and accountability of algorithms, and other advanced analytics. They are:
 - Option 1: **Status Quo**: Agencies would address the recommendation from the Algorithm Assessment review independently.
 - Option 2: **Mandated Action Plan**: A series of specific actions that directly link to each recommendation made by the Algorithm Assessment review. At Ministerial direction, government agencies would be required to ensure that they had processes in place to give effect to each action.
 - Option 3: **Voluntary Charter**: A voluntary charter made up of guidelines that address the recommendations from the Algorithm Assessment report and build a commitment to transparent and accountable use of algorithms. Committed agencies would be expected to endorse or sign up to the Charter.
 - Option 4: **Capacity building**: A long-term programme to build and develop the professional and ethical skills of the data I workforce. Agencies would share the resourcing to establish a professional body, that would subsequently become self-sustaining.
24. Each of these options is explored in further detail in the following section. A ranked assessment against criteria is included as appendix 3.
25. We have considered and excluded the option for an independent regulator at this time, which recent reports have recommended should be established². While we support in principle establishing a regulator in future, we favour taking immediate action to build public trust by improving current arrangements for the governance and accountability of our algorithms. Regulation for automated-decision making activity is a longer-term option which the Government could consider. However, it is preferable to have a solid basis of experience and evidence on which to develop effective and efficient regulation. The options in this paper provide the basis for developing the necessary evidence and experience, and do not prevent the eventual establishment of a regulator.

² 'Government Use of Artificial Intelligence in New Zealand' (The Law Foundation and University of Otago, May 2019) recommends a establishing a regulatory agency for government use of Artificial Intelligence, and 'Anti-social media: reducing the spread of harmful content on social media networks' (The Helen Clark Foundation, May 2019) recommends establishing an independent regulatory body to oversee social media companies in New Zealand.

Option 1: Status Quo

26. Under this option Agencies would address the recommendations from the Algorithm Assessment review independently. The data system would continue to progress as a result of best practice tools and guidance, for example the Data Protection and Use Policy (DPUP) and the Privacy, Human Rights and Ethics framework (PHRaE). Functional leads would continue to provide advice, support, and encourage agencies to share resources, but each agency would determine how best to respond the recommendations.

Summary of Option 1

Benefits	Challenges and risks	Resource
<ul style="list-style-type: none"> ▪ Agencies have clear advice on what they can do to increase transparency and accountability of agencies. ▪ Existing best practice tools, e.g. DPUP and PHRaE, and GCDS and GCDO commitments would contribute to increasing transparency over time. ▪ There is no additional resourcing required from agencies – and innovation is not stifled through additional reporting and monitoring requirements. 	<ul style="list-style-type: none"> ▪ If a government algorithm makes a decision that is damaging to New Zealanders, agencies will have minimal shared accountability. ▪ Little evidence to confirm that this course of action will increase the public's trust in algorithms. 	<ul style="list-style-type: none"> ▪ No additional resource required.

Option 2: Mandated Action Plan

27. Under this option government departments would be required to implement processes that give effect to a specific action plan. We would work with agencies to develop a series of actions that directly link to each recommendation from the assessment report, providing specific and immediate steps that agencies can deliver to increase transparency and accountability for their algorithms.

28. To support agencies to implement this gradually, without impacting their core functions, initial implantation could be limited to only those algorithms which significantly impact individuals. Functional leads would further support agencies by sharing best-practice and developing system-wide tools, and report on progress across the system.

Summary of Option 2

Benefits	Challenges and risks	Resource
<ul style="list-style-type: none"> ▪ A direct deliverable from the Algorithm Assessment Report with tangible and measurable actions that each agency can take. ▪ Increased transparency and accountability help to grow public trust in government use of data ▪ Some agencies are already delivering on some of the expected actions. ▪ Accountability is with agencies to deliver these actions. 	<ul style="list-style-type: none"> ▪ Capacity to deliver this within each agency is limited and alignment of these actions with individual agency objectives is not known ▪ Not every agency sees value in every action. They may need to choose which actions are appropriate for them – this would make it difficult for an agency to sign up to the whole action plan. ▪ The scope for this work is unclear – further clarification on which algorithms the action plan would apply to would be needed. 	<ul style="list-style-type: none"> ▪ High resource required. Would require Cabinet agreement. ▪ Over an initial 12-month period this would involve a working group and FTE support from functional leads and has the potential to grow significantly to support specific actions. Scaling up and further steps to be agreed based on progress during the first 12-month period.

Option 3: Voluntary Charter

29. Under this option we would establish a voluntary charter made up of guidelines that address the recommendations from the Algorithm Assessment report and build a commitment to transparent and accountable use of algorithms. Government agencies could sign-up to the charter to formally indicate their commitment to the transparent and accountable use of algorithms. This approach has already been taken for other initiatives³
30. Although intended for departmental agencies, the charter could have a wider membership including Crown Entities and even non-government organisations and businesses. The way that each participant gives effect to the charter would be different, but it would reflect a clear commitment from the leadership of each member about expectations of conduct.

Summary of Option 3

Benefits	Challenges and risks	Resource
<ul style="list-style-type: none"> ▪ A direct deliverable from the Algorithm Assessment Report that leaves options open for more detailed plans further along the process ▪ Demonstrates long-term commitment and supports a change in culture around algorithms and data analytics ▪ Develops a coalition across agencies. ▪ Can be opened to private sector in future. 	<ul style="list-style-type: none"> ▪ Could be considered too low impact. ▪ Risk of confusing stakeholders, as there are already some existing charters in the data space, for example the Open Data Charter that the New Zealand government has signed up to. ▪ Difficult to monitor progress and attribute success to. ▪ Possibility that agencies implement the charter to varying extents, which could impact integrity of the agreement if these agencies have issues with algorithms in the future. 	<ul style="list-style-type: none"> ▪ Medium resource required in the next 6 months. Could be delivered by existing FTEs within functional leads' offices. ▪ Option to scale or expand to wider group (i.e. crown entities and/or private sector) to be reviewed after implementation.

Option 4: Capacity building

31. Under this option we would begin a long-term programme of work to embed ethics and support the development of a professional identity for those who undertake data analytics for government. To manage scale and resource appropriately, early implementation would build off existing activity and commitments (e.g. developing a virtual workspace and exploring education options).
32. Future work as a part of this programme could include:
- Exploring the establishment of a professional body for data analysts, including the development of a code of ethics, ongoing professional development and regular seminars, and a digital workspace for analysts to access tools and resources and
 - Exploring the development qualifications, or micro-credentials through tertiary education providers for currently employed data analysts, and decision makers who work with data; and
 - Encouraging tertiary providers who offer professional data qualifications to review their current curriculum to embed an applied ethics component.
33. This option contributes to the data system stewardship approach that is led by the Government Chief Data Steward and would also contribute to the goal of raising the public's trust in government's use of algorithms by increasing the capacity of the workforce. As many agencies are already investing in developing this workforce, to some extent the cost of implementing this

³ The Ministry of Social Development launched the Accessibility Charter in February 2018 to build commitment to providing accessible information to the public. At January 2019 37 Chief Executives had signed up to the charter.

option could be met through re-prioritisation of existing spending. A professional body for data analysts could eventually be established.

Summary of Option 4

Benefits	Challenges and risks	Resource
<ul style="list-style-type: none"> ▪ Increases public trust in government use of algorithms by raising the standard of work delivered by analysts and developing the credibility of this field of work ▪ Encourages awareness and understanding of analytics and contributes to culture change across government ▪ Grows a network across New Zealand of analytics professionals who can share expertise and skills across a range of projects ▪ The long-term benefits of this work help our education system, economy and beyond. 	<ul style="list-style-type: none"> ▪ This would be a long- term project that would require support from Ministers. Delivery would sit with more than the functional leads involved in the Algorithm Assessment report. ▪ The technology field is constantly changing, and to make this programme successful we may need to adapt the workstreams over time. ▪ Difficult to attribute success to. 	<ul style="list-style-type: none"> ▪ Longest-term option. Immediate activity would focus on existing commitments (e.g. virtual workplace, micro-credentials), with a view to significantly scale up resource as the programme progresses. ▪ A future budget bid could fund further activity if necessary. Ideally, this could become a self-sustaining model over time.

A combination of options could deliver the best long-term results for New Zealanders

34. Each of the options assessed supports the goal of this work, to increase public trust in government's use of algorithms by increasing transparency and accountability. All options align to a degree with the Government's agreed priorities to:
 - Build a productive, sustainable and inclusive economy
 - Improving wellbeing of New Zealanders and their families
 - Providing new leadership by government
35. Feedback from agencies about a response to the report shows that there is a still a culture change that needs to take place across New Zealand government to understand the importance of sharing the challenge of embedding ethics within analytics and demonstrating the value of analytics to support frontline delivery. Any response should help to facilitate this culture change.
36. On balance, we have assessed a combination of options 3 and 4 as being the most viable ways to respond to the recommendations from the algorithm assessment report. These options have positive outcomes for the individual agencies involved, the data system, and contribute to the goal of building trust and confidence of the New Zealand public.
37. After socialising option 2 with agencies, there is limited appetite for its implementation despite it scoring more highly than option 3. We have socialised options 3 and 4 with agencies and have received broad support for these.
38. Under the recommended combination of options 3 and 4, we would plan to focus first efforts on delivering the algorithm charter and developing capacity building as a second priority. This would provide a clear deliverable as a result of the report and mobilise interest in the longer-term work that Capacity building would require. This approach could be implemented by existing resource that can prepare proposals for future support required.
39. As a partnership, other benefits not listed in the analysis include:
 - Pairing the algorithm charter and capacity building provide a short-term and long-term approach to solving the problem, and align with existing approaches for system development, including the Data Investment Framework.

- The algorithm charter builds buy-in at officer and agency level, and if successful, capacity building would have Ministerial endorsement. We expect that this combination of buy-in across government at different levels would be more likely to deliver results, and support the culture change that agencies have said is needed around the analytics profession.
- Agencies do not want a response to the report to stifle their ability to innovate through algorithms and analytics. A high-level commitment via a charter and the opportunity to improve the skills and awareness of the analytics profession could offer the flexibility that agencies are looking for.

Next steps

40. We seek to discuss these options with you, to develop a more detailed plan of work. We will work with your office to schedule an appropriate time for this discussion.
41. We also anticipate that the next meeting of Data and Digital Ministers on 17 June 2019 would be a good opportunity to seek the views of other Ministers on the proposed response to the algorithm assessment review.
42. The options proposed align with the New Zealand Government's commitment to being more open, accountable and responsive to citizens. We welcome the perspectives and expertise of those outside government and will propose consulting with civil society before finalising our response to the report.

PROACTIVELY RELEASED

Appendix One: Agencies who have received a draft version of this paper

ACC	Land Information New Zealand	Department of Corrections
The Treasury	Ministry for Primary Industries	Department of Internal Affairs
Ministry of Business, Innovation and Employment	Ministry for the Environment	Housing and Urban Development
New Zealand Customs Service	Ministry of Education	National Cyber Security Centre
Joint Border Analytics	Ministry of Health	New Zealand Police
Ministry of Social Development	Ministry of Justice	Oranga Tamariki
Social investment Agency	Ministry of Māori Development	Statistics New Zealand
Inland Revenue Department	Ministry of Pacific Island Affairs	
Crown Law Office	Ministry of Transport	
Department of Conservation	Ministry of Women's Affairs	

Appendix Two: Participating agencies in the Algorithm Assessment Review

ACC	Ministry of Education	New Zealand Police
Department of Corrections	Ministry of Health	Oranga Tamariki
Department of Internal Affairs	Ministry of Justice	Social investment Agency
Inland Revenue Department	Ministry of Social Development	Statistics New Zealand
Ministry of Business, Innovation and Employment (including Immigration New Zealand)	New Zealand Customs Service	

Appendix Three: Analysis of options

- *Criteria One: Alignment with the recommendations of the review.* Addressing the recommendations of the review will support the transparent and accountable use of algorithms by government.
- *Criteria Two: Immediate resource implications.* Agencies are not resourced to deliver expensive or high-maintenance responses to the algorithm assessment report, and there is no appetite to burden agencies or divert them from their core functions in responding to this report.
- *Criteria Three: Alignment with data system priorities.* In our assessment, an impactful response to the report should deliver value to address current priorities, as articulated in New Zealand's Data Strategy and Roadmap.
- *Criteria Four: Foundational to the Data System.* Any option must also be adaptable and reflect the fast-moving technological environment that analytics is operating and growing within.

Analysis of options

	Alignment with review recommendations	Immediate resource Implications	Alignment with data system priorities	Foundational to the data system	Total (maximum score 12)
Option 1: Status Quo	0	0	0	0	0
Option 2: Mandated Action Plan	3	3	3	1	10
Option 3: Algorithm Charter	3	1	3	1	8
Option 4: Capacity building	2	2	3	3	10

Scores: 0 = none 1 = somewhat 2=yes 3=significant

Appendix (if needed)

44. Appendices can be used to provide additional information such as visuals, background or brief bios for meetings, if the Minister hasn't met the attendees before – including photos if possible.

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