



Reflecting on our work about information



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Auditor-General's introduction

E ngā mana, e ngā reo, e ngā karangarangatanga maha o te motu, tēnā koutou.

Information is the lifeblood of any organisation. It plays an essential role in every decision an organisation makes or expects to make. In the public sector, using and managing information well is critical to effectively and efficiently delivering public services.

The information held by public organisations¹ informs decisions about service delivery, supports evidence-based policy development and decision-making, and helps measure performance and effectiveness.

During 2016/17 and 2017/18, we looked at aspects of how well the public sector uses and manages information. We wanted to provide an independent view of how well public organisations collect, store, and use information to inform good decision-making.

Our work has reinforced the need for public organisations to treat information as a strategic asset. This means that its value is recognised and there is a deliberate strategy for how information is managed and governed. We saw examples of public organisations managing information well, where they had a clear understanding of what information was needed to inform decision-making, information was collected and stored efficiently using technology and document management systems, and information was available when decision-makers needed it.

We also saw examples where public organisations struggled to manage their information well. Some did not have all the essential information available to make the best decisions about providing services to people. Others were not making the best use of the information they had.

Legacy information technology and document management systems often created inefficiencies in collecting and storing information, meaning that information was not easily accessible. The legacy systems were also creating obstacles to collaboration within and between public organisations.

Although there are obvious cost implications for information technology solutions to some of these problems, it is important that public organisations keep reviewing their systems and processes for managing information. We saw room for improvement in ensuring that systems were still fit for purpose.

To maintain trust and confidence in the public sector, people also need to know that their personal and commercially sensitive information is kept safe and secure. Legislative mechanisms allow public organisations to share information,

¹ Public organisations include, for example, government departments, State-owned enterprises, Crown research institutes, the defence forces, district health boards, city and district councils and the entities they own, port companies, schools, and universities, polytechnics, and wānanga.

and, where services are designed around the needs of individuals, privacy considerations are often embedded in the design process.

However, misunderstanding and confusion about privacy laws are still creating barriers to public organisations working together and sharing information. In my view, the leadership and guidance provided by the Office of the Privacy Commissioner and the Government Chief Privacy Officer are essential to the public sector sharing information in a safe and secure manner.

Strong and clear expectations have been set for the management of information security. However, we still see some basic weaknesses in security controls for information systems associated with financial and performance information that we audit. It is essential that public organisations make the changes needed to ensure that their information systems are safe and secure.

We also wanted to understand what progress public organisations were making in using digital technology to improve the services they provide to people. The ways in which people expect to access information and services are changing. Public organisations need to respond by designing digital services that allow people to access services where and when they need to.

Where public organisations provided services or information online, we saw improvements in the experience for people, as well as an improved perception of the reliability of the service or information. We also saw evidence of the challenges that public organisations continue to face, including the need to keep up with expectations as technology develops and to ensure that public sector websites and applications are useable and accessible.

Providing digital public services is not just about putting information online. It requires a different approach to designing services. We are pleased to see the public sector moving to a focus on an individual's key life events and needs, rather than on what services particular organisations are tasked with providing.

The public sector is facing a transformative challenge – to work together to design and deliver services. Services that are focused on the needs of people and businesses and that allow them to interact with the Government in a more seamless and agile way will increasingly become the norm.

Our work showed us some good examples – such as SmartStart – where public organisations were successfully collaborating to design digital services for people and businesses. There are opportunities for other organisations to learn from these projects.

The functional leadership roles of the Government Chief Data Steward and Government Chief Digital Officer are essential to provide guidance and support to the public sector to make the shift needed to consistently use information as an asset, to enable the progress and innovation that open data allows, and to create ICT-enabled digital-by-design transformation throughout government. It is important that both roles have a strong leadership mandate and that it is clear to other public organisations what those leadership responsibilities are.

The work that this report is based on was done before my term as Controller and Auditor-General began. However, I consider that this report has some essential messages about the use of information and data in the public sector. I encourage public organisations to consider the matters raised in this report and to ask themselves whether they are using and managing information in ways that allow them to best provide the public services they are responsible for.

Nāku noa, nā,

A handwritten signature in black ink, appearing to read 'JMR Ryan', with a stylized flourish at the end.

John Ryan
Controller and Auditor-General

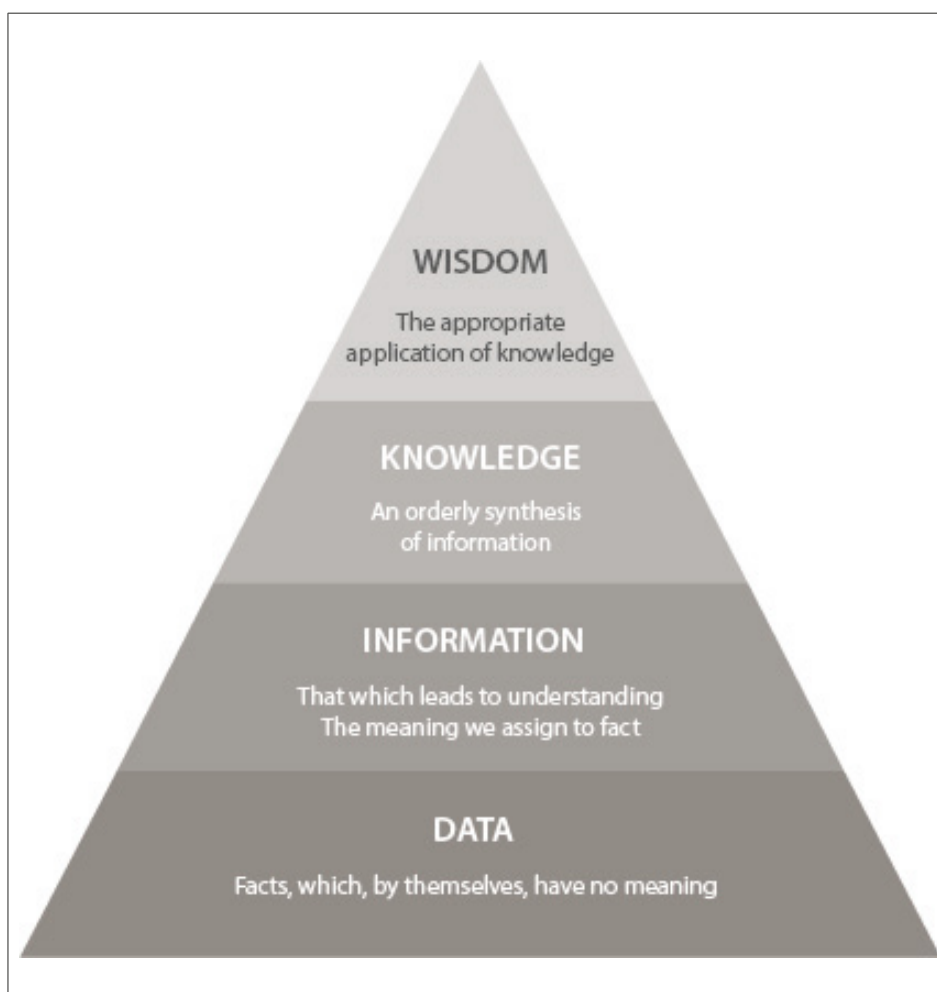
27 August 2018

1

Using information strategically is essential for delivering public services

- 1.1 Good quality information underpins effective public services. It is important for strong governance, accountability, and transparency in the public sector.
- 1.2 Good quality information enables public organisations to make informed decisions about how to spend taxpayer and ratepayer funds, how to best manage assets, and how to deliver services. It supports the development of evidence-based policy and regulation, long-term planning, and performance reporting.
- 1.3 Not having the right information can mean that a public organisation does not make the best use of taxpayer and ratepayer funds nor meet the levels of service the community expects. Not having the information to support decision-making can result in policy and regulation that do not achieve the outcomes sought, poor planning, or a lack of transparency about how public organisations are performing.
- 1.4 In this report, we use “information” to include data, the information developed from data, and the knowledge derived from both. Data can be defined as raw facts and figures that have no meaning on their own. Data must be interpreted to become information, and information must be interpreted and analysed to become knowledge (see Figure 1).
- 1.5 We decided to focus on how the public sector uses and manages information as part of our work in 2016/17. The importance of good information when making decisions, managing assets, and enabling service delivery has featured in much of our previous work. Our more recent work on water management and procurement continues to highlight the same important issues.
- 1.6 This report aims to help public organisations think about using and managing information more strategically – whether they are using that information themselves, working with other public organisations to develop new services, or providing system-level leadership.
- 1.7 Our work looked at several examples of public organisations using and managing information. It became apparent that several consistent factors need to be present to effectively manage information throughout its life cycle. It is important that public organisations:
 - **Understand what information is needed, who will use it, and what they will use it for.** Information comes into an organisation in one of two ways – by being collected or created. Either way, an organisation needs to ensure that it has the right information. Communication is important so that those who collect the information understand the needs of those who use it.
 - **Collect the right information in an efficient way.** Information needs to be collected in a way that ensures that it is accurate, timely, and complete. Technology-based tools can enable an efficient process for collecting information.

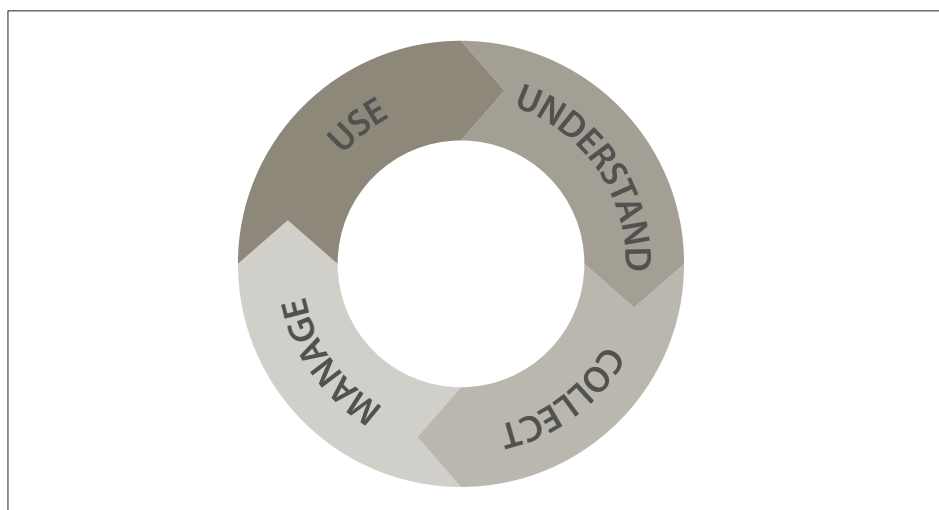
Figure 1
The data-information-knowledge-wisdom pyramid



- **Manage information in such a way that it is stored and safeguarded appropriately and available and accessible when needed.** Fit-for-purpose information management systems play an essential role. Public organisations need to carefully manage their privacy and security settings to ensure that adequate safeguards and protections are in place to protect information. They also need to ensure that information is readily retrievable when it is needed or requested.
- **Use the knowledge from information to inform decision-making.** Good information informs good decision-making. Information is only as reliable as the method of retrieving it. It must be easily accessible to decision-makers and made available in an appropriate form to assist decision-making.

- 1.8 An important part of information management includes regularly reviewing the information a public organisation holds, to consider whether the information is still useful or whether it might have reached the end of its useful life. Disposal might be through archiving or destruction.
- 1.9 Although our work on information did not cover disposal, we note the need for public organisations to have a clear and well communicated records management and destruction policy. In doing so, public organisations should be aware of their obligations and responsibilities under the Public Records Act 2005. They can seek guidance and support from Archives New Zealand.
- 1.10 Throughout the information life cycle, it is important that public organisations continually review and test the quality and accuracy of information, and consider whether their information needs have changed (see Figure 2).

Figure 2
The information life cycle

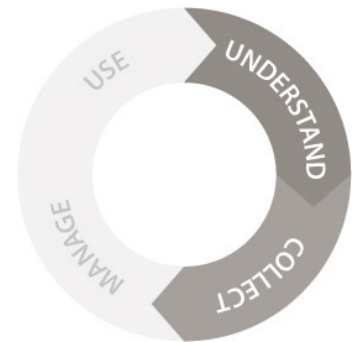


- 1.11 All phases of this life cycle are important to produce the quality of information a public organisation needs to carry out its business. Public organisations need to know enough about what happens to information in each phase to carefully consider how well they are managing information.
- 1.12 Our report is structured around the phases of this information life cycle. We hope that our observations can help public organisations ask the right questions to understand and effectively manage the information that supports the decisions they make every day.

Understanding and collecting the right information

2

- 2.1 The first part of the information life cycle that a public organisation needs to consider is understanding what information it needs. To do that well, a public organisation will need to think about its goals and understand what information it needs to achieve those goals.
- 2.2 Public organisations that manage assets, for example, need to have the right information about those assets to effectively manage them. Public organisations that make policy recommendations or decisions need to support those decisions with relevant information about the need for the policy change and the effect it will have. And public organisations that provide services to people or business need to have relevant information about what services are needed, how they are accessed, and how effective they are.
- 2.3 Understanding what information a public organisation needs does not happen by accident. Identifying and evaluating information needs requires careful consideration and resourcing. Decisions might need to be made about priorities, and information needs have to be continually assessed.
- 2.4 Once a public organisation understands what information it needs, it then needs to collect it. How information is collected is important. Public organisations need to understand where relevant information is best collected from, whether the information is complete and reliable, and what systems and processes it needs to collect it effectively and efficiently.
- 2.5 People who collect information on behalf of the public organisation need to understand the significance of the information and what it will be used for. Technology can play an important role in ensuring that those who collect information have the right tools to do so effectively and efficiently.



Understand what information is needed

- 2.6 To identify the information a public organisation needs for its activities, the organisation must have a clear understanding of its purposes and objectives, and what information it needs to achieve those purposes and objectives.
- 2.7 Each public organisation will need to take account of its specific circumstances when considering its information needs. Organisations might also need to prioritise some types of information over others, depending on complexity, risk, and how critical the information is.
- 2.8 In our 2017 report *Getting the right information to effectively manage public assets: Lessons from local authorities*, we noted the need for local authorities to

identify what asset information is most important. Local authorities need to identify which assets matter most based on how the services provided by those assets provide support to their communities and which assets are the most critical to ensure the continued delivery of these services to communities.

- 2.9 All asset-intensive agencies need up-to-date knowledge of their assets, especially the condition and performance of the assets, to make informed decisions about whether to repair or replace an asset. Public organisations might not have detailed information about all their assets, but they should have a good understanding of their critical assets. Critical assets are the assets that, if they failed, would have a significant adverse effect on essential services.
- 2.10 Organisations with significant service delivery functions should understand people's needs to provide the best service. In our 2017 report *Using information to improve social housing services*, we reported that the lack of a complete picture of a person's experiences of social housing over time affected the Ministry of Social Development's and Housing New Zealand's understanding of that person's social housing needs.
- 2.11 In our view, to allow the Ministry of Social Development and Housing New Zealand to understand who benefited most from social housing, they needed more complete information about who was in social housing, how long they had been in it, and their changing use of it over time.
- 2.12 The information gathered by a public organisation must meet the needs of those who use it. That will be determined by what the information will be used for, such as investment decisions, policy development, planning, or performance monitoring or reporting. Public organisations should take the time to consider the needs of the range of people in their organisation who use information.
- 2.13 Our 2017 report *Getting the right information to effectively manage public assets: Lessons from local authorities* highlighted the importance of considering the needs of staff who use asset information (including people in the wider business), and identifying and documenting the types of asset information needed.
- 2.14 Feedback from service users is also a useful source of information about how well a service is working and supporting outcomes.
- 2.15 Some organisations use a complaints process to get feedback. In our 2016 report *Auckland Council: How it deals with complaints*, we were pleased to see Auckland Council using information recorded in its complaints system to help identify the need for improvements to its services.

- 2.16 The executive leadership team receives a monthly report on all complaints. Each report includes information about the number of complaints received in a specific period, the topic of complaints, root causes, complaints by department, and performance against the service-level agreement.
- 2.17 At the same time, relying solely on a complaints system for feedback will provide only a partial picture. An organisation that proactively seeks feedback about the services it provides will learn what is working well and what it could improve.
- 2.18 In our 2018 report *Digital access to information and services: Learning from examples*, we looked at how the National Library is digitising its services. We noted that the National Library, for example, carries out surveys to understand the benefits of digitisation, particularly from a user's perspective. As the National Library learns more about how people use its collections, it will also learn more about the benefits of increasing access to digital information and how it can be more effective in tailoring services to people's needs.

How information is collected is important

- 2.19 Once a public organisation understands its information needs, that information has to be collected. It is important that those responsible for collecting information understand why it is being collected, what it is to be used for, and the importance of its completeness and quality. Incomplete information will affect an organisation's ability to analyse the information it has, consider trends, or draw conclusions.
- 2.20 Our 2017 report *Getting the right information to effectively manage public assets: Lessons from local authorities* noted that written requirements and direct communication to information gatherers helped them to understand their role. Strong relationships and regular communication between information gatherers and the people who used the information, including workshops, also helped.
- 2.21 Collecting timely and complete information can also be influenced by the expectation a public organisation sets with third parties it is collecting information from. If the organisation sends clear messages about what information is to be provided and what the process for providing the information is, it is more likely to collect timely and complete information. Although an organisation cannot control what information is given to it, it can control what it asks for and what form it asks for the information to take.
- 2.22 In our 2018 report *How the Overseas Investment Office uses information*, we noted that the Overseas Investment Office (OIO) has provided a set of publicly available template documents to assist applicants to make applications. The templates

clearly outline what and how much information is to be provided with the application. This has improved the quality of the information the OIO receives and alleviates the need to make further requests for more information.

- 2.23 Using technology effectively can enable an efficient and easy-to-use process for collecting information. We saw local authorities using technology-based tools, including hand-held mobile devices, to gather asset information.
- 2.24 As technology develops, new approaches become possible. We saw an example where Tararua District Council was experimenting with drones to inspect bridges, gathering high-quality asset information more quickly and more safely than by people scaling bridges.
- 2.25 Ideally, technology-based tools should be integrated with an organisation's information technology (IT) system and allow staff to directly enter and access information. In our 2017 report *Border security: Using information to process passengers*, we noted that the New Zealand Customs Service was using mobile devices with direct access to its systems, allowing staff to process passengers more efficiently.
- 2.26 In contrast, our report noted that the Ministry for Primary Industries (MPI) was still using several legacy systems that were incompatible with the operating systems of mobile devices. This meant that frontline staff could not enter information directly and external contractors were required to collect handwritten information and enter it.
- 2.27 The report described that this process was inefficient, that there was a lack of quality assurance for the data entry, and that there was a lost opportunity to fully use the information gained at the ports.²
- 2.28 An efficient process for collecting information will also avoid collecting information the organisation already holds or collecting the same information in multiple ways. In our work on the OIO, we noted that it might consider whether knowledge from other applications could be used to inform the types of conditions it recommends be included when a consent to make an overseas investment is granted.
- 2.29 Similarly, in our work about local government assets, we noted the importance of obtaining the full benefit of knowledge held by staff by formally documenting it so that it is available more widely to the organisation.³

2 Controller and Auditor-General (2017), *Border security: Using information to process passengers*, Wellington, paragraph 3.37. When providing comments on this report, MPI said it was developing mobile tools for quarantine officers, was working with other frontline workforces to introduce mobility, and had a four-year upgrade programme to address the risks with legacy systems.

3 Controller and Auditor-General (2017), *Getting the right information to effectively manage public assets: Lessons from local authorities*, Wellington, paragraph 2.17.

Questions to consider

Do you understand and collect the right information for your purposes and objectives?

Do you identify and prioritise that information?

Do those collecting information on your behalf understand its importance?

Do you have the necessary systems and processes to collect the information you want and need?

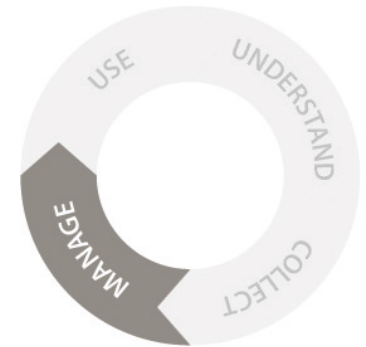
Are you using the most efficient means to help collect your information?

Do you consider the needs of those who will use the information and seek feedback from them?

3

Managing information effectively

- 3.1 It is important that a public organisation is in a good position to make sensible decisions about how best to manage information it has collected.
- 3.2 An important part of managing information is how it is stored and accessed. Public organisations need to have the right policies, processes, and systems to find, understand, trust, and work with the information they hold when they need to.
- 3.3 Understanding where information is and ensuring that it can be efficiently retrieved and made available to those who need it is critical to delivering public services. Information collected and lost or that is unable to be effectively accessed is of little practical use to the public organisation. Effective information management allows an organisation to use its information productively.
- 3.4 If a public organisation is not managing its information well, it is poorly placed to meet its obligations when people try to exercise their rights to access official information or their personal information.
- 3.5 Again, technology plays an important part in how public organisations manage their information. Fit-for-purpose information management systems are essential to make sure that information is kept safe and secure, and is available to decision-makers when they need it or to members of the public when they request it.⁴
- 3.6 Public organisations need to think about how they can share information to best design policy solutions and services for people and business. At the same time, it is critical that they get their privacy and security settings right – a security failure, use of inaccurate information, or breach of an individual’s privacy can have a significant detrimental effect on trust and confidence in the public sector.
- 3.7 Information should not be kept beyond its useful life. An organisation that disposes of non-essential information can avoid overloading its information management systems and better access relevant information when needed.



Good systems and processes are essential

- 3.8 To effectively manage its information, a public organisation needs well written, strong, and clear policies for document management. It also needs an information management system that stores and indexes that information, allows for easy retrieval when needed, and applies varying levels of security as required.
- 3.9 Without good information management systems, public organisations can waste time and resources trying to locate information when they need it. Redundant

⁴ Such as under the Official Information Act 1982 or the Local Government Official Information and Meetings Act 1987.

effort arises if it is easier to recreate information than to try to find it. Haphazard security and privacy settings risk document loss or inappropriate access.

- 3.10 Technology plays an important part in managing information well. Because much information is in electronic form, it is important that a public organisation has fit-for-purpose IT and document management systems. That is not to say that all organisations need new systems. Sometimes, old systems can be fit for purpose and handle large volumes of information efficiently.
- 3.11 However, sometimes requirements change, and systems need to be kept under review to ensure that they are fit for purpose. During the fieldwork for our 2017 report *Border security: Using information to process passengers*, Immigration New Zealand told us that it considered the system it uses to manage applications to be fit for purpose. However, it also acknowledged that the system was not designed to accommodate the changing systems requirements of border operations. Immigration New Zealand will need to continue to review whether its technology solutions are fit for purpose.
- 3.12 A system that is not fit for purpose can create barriers to staff doing their work efficiently. In our work about border security, we described how MPI uses several legacy systems from when it was the Ministry of Agriculture and Forestry. Although these systems are usable, staff described them as slow and, at times, unreliable. Having multiple systems also means it takes staff a long time to find and use the right information. MPI had nine databases that intelligence staff had to search to find the information they need, which is inefficient.
- 3.13 Similarly, in our 2017 report *Using information to improve social housing services*, we explained that information that might help manage people in social housing was kept in manual spreadsheets at local offices or not formally documented. Because this data was not recorded in a single location, accessing it was difficult.
- 3.14 In contrast, the New Zealand Customs Service uses a system (CusMod) that sits at the core of all Customs' systems and allows staff to access all Customs' systems from one place. This system enables Customs' Passenger and Trade Targeting officers to handle large volumes of information efficiently. Although Customs has used this system for more than 20 years, it is apparently meeting the business needs of Customs' staff dealing with border security and, as such, is considered to be still fit for purpose.⁵ Customs told us it continues to upgrade the system to ensure that it uses modern technology and therefore extends its useful life.
- 3.15 In our 2012 report *Realising benefits from six public sector technology projects*, we outlined the benefits from Land Information New Zealand's Landonline project. Having historical and current land title data in an electronically searchable

⁵ Controller and Auditor-General (2017), *Border security: Using information to process passengers*, Wellington, paragraph 4.7.

medium meant that information can be used or reported in ways not previously possible. It dramatically reduced manual processing, storing and handling paper records, and the challenge of dealing with an increasing number of transactions. It also has the ability to create new information-centred products.

Good systems enable collaboration

- 3.16 How systems are configured and how information is analysed affects how staff can collaborate within a public organisation and between organisations. In our 2017 report *Mental health: Effectiveness of the planning to discharge people from hospital*, we noted that, in some district health boards, information about patients was fragmented between different systems and the systems did not support co-ordination. In those circumstances, having a shared client file is fundamental to seamless service delivery. An integrated computer system can help share information between different parts of an organisation.
- 3.17 Similarly, having compatible IT systems (where appropriate) enables public organisations to share information effectively and collaborate to provide integrated services. In our 2016 report *Summary of our education for Māori reports*, we noted that the variety of schools' management systems did not always support schools to collect, share, and use information. Systems that could interact with one another to exchange information about, for example, transferring students, would be more effective.
- 3.18 Where organisations are designing policy interventions or services for people with complex needs, it is even more important that organisations share the right information. In our 2017 report *Using information to improve social housing services*, we noted that Housing New Zealand's staff did not always get enough detail from the Ministry of Social Development to ensure that individuals were offered houses that met their needs.

Analysing information is critical to making good use of it

- 3.19 As well as efficiently storing and accessing its information, an organisation needs to analyse its information to understand and learn from it. An organisation that uses information as a strategic asset knows its information is relevant and useful. It can use its information to forecast and predict future needs, build knowledge and capability, and influence decision-makers.
- 3.20 In our 2017 report *Border security: Using information to process passengers*, we described an example of information collected by the agencies involved in border security from various sources before and as a person arrives in the country. That information is analysed and assessed against established risk profiles so that threats can be intercepted and managed as early as possible. There are some

limitations with the systems, tools, and resources used currently, which affects how efficiently information is collected, used, and shared between the agencies.

- 3.21 Having the right systems and processes to analyse information and the ability to share it within an organisation is important. Customs has well-documented procedures to feed information gathered by frontline staff back to other Customs staff. Customs officers are required to record interactions with passengers through activity reports or intelligence reports. Intelligence staff have access to all of these reports and can use them to refine, inform, and keep the risk profiles up to date.
- 3.22 For our 2016 report *Education for Māori: Using information to improve Māori educational success*, we asked schools about the analysis and reporting they did about Māori achievement. We summarised the three main features of analysis and reporting we saw in better performing schools. Those features were:
- an active use of information by school leadership and boards of trustees – leading from the top;
 - an analysis in detail of the achievement of different groups of students (whether grouped by year, gender, ethnicity, learning needs, or level of transience); and
 - a recognition that “one size does not fit all”.⁶

Information should be treated as a strategic asset

- 3.23 Public organisations that manage their information well will treat it as a strategic asset. This means that they recognise its value and that they have a deliberate strategy for how they manage and govern information.
- 3.24 As part of a research project looking at using data to improve public services, we saw some organisations that had information strategies in place. But we were also told that most organisations are only just beginning to think about managing their information as an asset, unlike their physical or financial assets.
- 3.25 There are different information management maturity models that can help organisations to benchmark their current position, target future status, and measure progress along the way. In our article *Data leadership*, we noted the need for system-level leadership to assist and support the public sector to better manage and use data.⁷
- 3.26 The Government Chief Data Steward and the Government Chief Digital Officer are charged with working together closely to enable better information use throughout the public sector. The Government Chief Data Steward, in particular,

6 Controller and Auditor-General (2016), *Education for Māori: Using information to improve Māori educational success*, Wellington, paragraphs 4.22 and 4.23.

7 This was one of four *Data in the public sector* articles that we published in 2018.

is responsible for providing guidance, support, and tools to assist public organisations better manage information.

- 3.27 The Government Chief Data Steward role was created in 2017. Although the Government Chief Digital Officer role was created earlier, both lead roles are relatively new and continue to evolve. Staff in public organisations working closely with data and information told us that it was still unclear what the roles and responsibilities of the leaders were.
- 3.28 The Government Chief Data Steward told us they have begun a work programme to strengthen government management of data. Some of the work under that programme includes:
- a Data Stewardship Framework for the rules and practices that shape how data should be managed and used;
 - embedding tikanga Māori principles and priorities in the way data and information are managed;
 - building decision-makers' understanding of the strengths and limitations of data in decision-making; and
 - strengthening responsible data use throughout government and preventing harmful practices.
- 3.29 The Government Chief Data Steward also leads the Government's commitment to accelerating the release of open data, including New Zealand's adoption of the International Open Data Charter, and is responsible for the New Zealand Open Data Action Plan.⁸
- 3.30 We understand that the Government is currently considering the settings for these leadership roles, particularly to ensure that they have the mandate and resources needed to achieve change and drive progress. Strong and clear leadership is essential.

Questions to consider

Are your systems and processes for managing information fit for purpose?

Do you use technology to best help manage your information?

Do you regularly review your systems and consider whether requirements have changed?

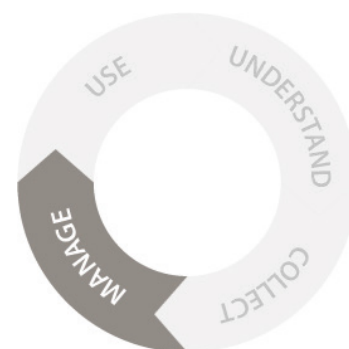
Do you collaborate with other agencies who work with similar issues or data? Do your processes and systems facilitate (or hinder) that collaboration?

Do you analyse the information you have and learn from it?

Do you have a plan to enable you to manage your information as a strategic asset for your organisation?

Privacy and security of information

- 4.1 It is essential that public organisations get the balance right between the accessibility of information and having adequate protections and safeguards. As we have seen in the past, a security failure, using inaccurate information, or a breach of an individual's privacy can lead to the loss of trust and confidence in the public sector.
- 4.2 There is an increasing focus in the public sector on organisations working together to design and deliver services to people that are better integrated and designed around the needs of individuals. It is becoming more and more evident that this joined-up way of working is necessary to successfully address the more challenging and intractable issues our society is facing, such as child poverty, family violence, or homelessness.
- 4.3 An important factor in enabling public organisations to work together is the ability to share information that they hold about people. Information sharing allows public organisations to work together to see and understand the whole context of challenges or problems faced by a particular individual. It also helps them work together to find ways to improve that individual's circumstances.
- 4.4 However, with information sharing comes increased risk. The public sector holds very personal and sensitive information about individuals, such as details about personal relationships, financial status, criminal convictions, and health information.
- 4.5 People need to have trust and confidence in the way that public organisations use and manage information. Importantly, they expect their personal information to be kept private and secure, and used only for the purposes they provided it for or have agreed to.
- 4.6 The accuracy of personal information is also important. The more that agencies share information, the greater the potential is for multiple agencies to hold inaccurate information about individuals. The ability for individuals to access and correct personal information held about them is also critical to their trust in the decisions the Government makes about them.



Issues arising when sharing information between public organisations

- 4.7 Providing access to public services that are designed around the needs of individuals allows people to deal with the Government in a more streamlined and efficient way, rather than having to deal with multiple agencies. It also requires those agencies to shift their focus and work together on the more complex policy

issues that need to be resolved. An increasing focus on delivering integrated, joined-up services to people means that public organisations need to improve the way they use and share information.

- 4.8 The Privacy Act 1993 contains several mechanisms that allow government-held personal information to be shared. The Act sets out exemptions to the privacy principles, allows the Privacy Commissioner to develop codes of practice, enables an information-matching regime, and provides a system where agencies can establish and agree Approved Information Sharing Agreements.
- 4.9 In his recent *Briefing to the Incoming Minister of Justice: Hon Andrew Little*, the Privacy Commissioner outlined his view that the legislative settings in the Privacy Act provide ample scope for sharing government-held information. His view, based on feedback from public organisations, is that the main barriers to information sharing are operational. They include issues such as a misunderstanding or uncertainty of the law, lack of interoperability between IT systems, security concerns, cost, and differing priorities between public organisations. They can also include cultural issues, where public organisations are reluctant to share information due to a lack of trust, or do not have a shared vision, set of values, or sense of what they are trying to achieve.
- 4.10 We saw similar issues in our work. In our 2017 report *Using Information to improve social housing services*, we noted that Housing New Zealand had information-sharing agreements with the Ministry of Social Development and other agencies to obtain the information it needed to place individuals in suitable social housing.
- 4.11 Despite these agreements, staff in the two government departments were unclear about what information they were able to share. We recommended more guidance and better processes to ensure that the right information was available for placing people in houses.
- 4.12 In our 2017 report *Border security: Using information to process passengers*, we noted that the use of multiple databases and legacy IT systems made it difficult for the border agencies to respond to requests for information from one another.
- 4.13 In 2016, the Office of the Privacy Commissioner set up a Trusted Sharing Consultancy Service to offer expert advice and support to government agencies working on policy issues that have an information-sharing component.
- 4.14 The creation of the Government Chief Privacy Officer position in the Government Chief Digital Officer's team at the Department of Internal Affairs has also helped to provide an all-of-government approach to privacy. The Government Chief

Privacy Officer is responsible for providing leadership, preparing guidance, and helping build privacy capability throughout the public sector.

- 4.15 We encourage public organisations to use these sources of guidance and support to help develop their privacy knowledge and know-how.

Privacy by design and by default

- 4.16 As the public sector moves towards a joined-up way of working and designing more integrated and customer-focused services, it will become more important to get the privacy settings right.
- 4.17 Privacy is an essential consideration when new systems or practices are designed. Both the Privacy Commissioner and the Government Chief Privacy Officer have issued guidance to public organisations encouraging them to take a “privacy by design” approach, embedding privacy into the design of new products and services for people.
- 4.18 We saw some good examples of privacy by design in our work. In our 2017 report *Ministry of Health: Supporting the implementation of patient portals*, we noted that patient portals have developed in the context of an established framework of privacy rules and rights, standards, and guidelines designed to protect people’s personal health information. The Ministry of Health required public health organisations to carry out privacy impact assessments to receive funding to implement patient portals.
- 4.19 Similarly, when we talked to agencies about setting up the SmartStart service (discussed in Part 6), we heard that the service was designed around the customer and asks for consent at each stage before sharing information with other agencies.
- 4.20 For example, it is possible to access generic information about the birth of a baby from the SmartStart website without providing any personal information. If a person wishes to use the website to register the birth of their child, it is made clear that their personal information will be provided to the agencies that register the birth and confirm citizenship.
- 4.21 Similarly, if someone wishes to use the website to apply for an IRD number or seek information about their entitlement to a benefit, it is made clear that the information will be provided to the Inland Revenue Department or the Ministry of Social Development. By designing the service around the customer, with privacy as the focus, there is no need for legislative change or complex information-sharing arrangements.

Effective security depends on doing the basics well

- 4.22 Safe, secure, and functional information systems are essential to support the protection of government-held information and underpin ongoing public confidence. The Government has outlined expectations for public organisations in managing personnel, physical, and information security, in the New Zealand Security Intelligence Service's Protective Security Requirements.
- 4.23 The New Zealand Information Security Manual is an important part of the Protective Security Requirements framework. Managed by the Government Communications Security Bureau, it provides technical guidance for government departments and agencies on information assurance and systems security.
- 4.24 During our annual audits, we consider public organisations' controls over information systems that are important to the financial and performance information we audit. We expect organisations to have effective controls over these systems to prevent data security breaches.
- 4.25 Although we do not provide assurance over all controls, we do carry out regular rotational testing on a selection of controls. As part of our *Information* theme, we took a closer look at the public organisations in the mandate of the Government Chief Privacy Officer and/or subject to the Protective Security Requirements framework. We considered the recommendations we made in 2016/17 about their data security controls.
- 4.26 Although we did not find any substantial data security issues, we regularly identified basic weaknesses in security controls and procedures. These were often unresolved matters that we had identified in previous audits. Some had been recurring for many years.
- 4.27 At a summary level, our recommendations are a useful reminder to all public organisations about information assurance and systems security. We recommend that public organisations:
- manage user access to information systems appropriately;
 - manage the changes made to information systems, including Masterfile data, to ensure that all changes are authorised and understood;
 - keep disaster recovery plans up to date and test them regularly to ensure that critical operations can be recovered quickly;
 - implement timely security patches and service packs; and
 - regularly review information system policies to ensure that they reflect the changing technology environment and strengthen the governance of the public organisation.

Questions to consider

Do you consider how to share information with other agencies to improve the outcomes for individuals or business?

Do you identify and, where possible, remove barriers that prevent you and your staff from sharing information with other agencies?

Do you consider and build appropriate privacy settings into the services you provide?

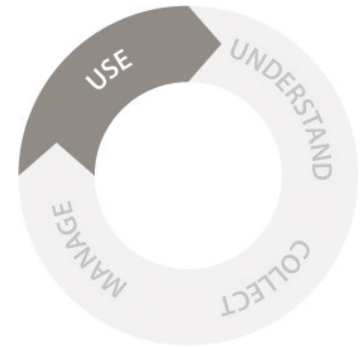
Do you make use of expert guidance when considering privacy issues?

Do you have safe and secure information systems and policies that you regularly review?

5

Using information to make good decisions

- 5.1 Information management often focuses on how information is collected, stored, accessed, and disposed of. However, that is not the end of the story. Delivering high-quality public services relies on quality decision-making. In turn, that decision-making depends on comprehensive, reliable, and relevant information.
- 5.2 Whether the decisions are about the day-to-day running of the organisation or are strategic decisions about policy making or service delivery, they need to be timely and based on evidence. It is at this point that good information management can make a difference.
- 5.3 If there is an effective process for collecting and collating relevant information and that information is provided to decision-makers when they need it, there is more likelihood the quality of those decisions will be high.
- 5.4 We have reported in much of our work that high-quality information is essential to making good decisions. However, public organisations not only have to make good decisions but also demonstrate to the public that they have made good decisions. This is important to promote transparency, as well as trust and confidence in the public sector.



Decision-makers need good information

- 5.5 In our 2016 report *Reflections from our audits: Governance and accountability*, we noted that those responsible for the direction of public organisations are accountable for the decisions they make. They need relevant, accurate, and up-to-date information to make good decisions.
- 5.6 In previous work, we have looked at how local authorities make asset information available to inform asset planning, renewal, and replacement. For example, Napier City Council told us that physical inspections and knowledge of local soil conditions showed that some of its assets were in better condition than it thought, and it was able to extend how long it estimated they would be used for. Fact-based information has given the Council more confidence in its planning decisions and meant that it could plan and budget more accurately.⁹
- 5.7 During the fieldwork for our 2017 report *Using information to improve social housing services*, staff at Housing New Zealand gave us numerous examples of unsuitable suggested placements because of a lack of information. In one situation, Housing New Zealand offered a person a two-storey house and found out about the person's mobility issues only when the person met the tenancy manager to sign the tenancy documents.

⁹ Controller and Auditor-General (2017), *Getting the right information to effectively manage public assets: Lessons from local authorities*, Wellington, paragraph 4.14.

How information is provided to decision-makers

- 5.8 Information needs to be provided to decision-makers in an appropriate form, depending on the nature of the decision and the requirements of the decision-maker.
- 5.9 For example, if the decision is part of day-to-day operations, the information for that decision could be readily available in a simple format. Where the decision is more strategic or formal, the information can be more considered, analysed, or summarised. Whatever the purpose and format, the information should be fit for the particular purpose.
- 5.10 Our work about the Overseas Investment Office (OIO) illustrated that it collects and considers information from several sources and uses the information to make a recommendation about whether consent should be granted to make an overseas investment. The recommendation is put to the relevant decision-maker, who can be a Minister or a senior OIO official.
- 5.11 In support of the recommendation, the OIO provides the decision-maker with a comprehensive file of information for each of the statutory criteria that need to be satisfied for consent to be given. As well as the comprehensive information, the OIO provides a summary of each of the relevant criteria.
- 5.12 In this example, the information is provided to the decision-maker (who can be a busy Minister) in a way that allows them to make a decision based on a summary or after reading in more depth if they consider it to be warranted.
- 5.13 A public organisation's information systems and processes should facilitate access to information for strategic decisions and decisions in day-to-day operations. If the systems are easy to use and provide timely and efficient access, the information in those systems can be used more efficiently.
- 5.14 As mentioned earlier, systems that are not fit for purpose or that are difficult to use can make it harder for decision-makers and others in an organisation to use the information in those systems well.

Decisions about allocating resources

- 5.15 A public organisation, like any other organisation, needs to make informed decisions about how it allocates its resources.
- 5.16 An example of this is the OIO's "triage" process. The comprehensive package of information provided as part of an application for consent is initially considered by experienced staff and managers who are able to understand the application and apply knowledge held by the OIO about the applicant, the nature of the application, and other applications.

- 5.17 Those triage decisions are designed to more efficiently evaluate, in the light of the information the OIO has, what resources are required for the application, and how long it might take to process it. It helps the OIO to allocate resources efficiently.¹⁰

Learning from decisions

- 5.18 Once a public organisation has made decisions about delivering services and allocating resources, it is important that it also collects information to understand how much it costs to implement the decisions and to measure their effectiveness. Such information allows the organisation to learn and make increasingly better informed decisions. It also allows the processes for making those decisions to mature and become more effective.
- 5.19 In our 2016 report *Education for Māori: Using information to improve Māori educational success*, we noted that the Ministry of Education did not have the information it needed about how much its various initiatives and programmes cost, whether they were effective, and how they added value overall and to Māori students in particular.
- 5.20 Likewise, we found that the lessons from responses to security threats and exercises carried out by agencies involved in the national security system could be better collated and co-ordinated. This would enable good practice in one part of the system to be shared and implemented by other parts of the system.¹¹

Making information about decisions available

- 5.21 In 2017, the Chief Archivist published a long-term strategy for Archives New Zealand and made some comments about the importance of good recordkeeping to the trust people have in the public sector. She noted that “people lose trust in government if there is poor recordkeeping, difficulties accessing information or privacy and security breaches by agencies”. Her strategy encouraged the public sector to do better:

*The “disappointing” levels of recordkeeping maturity among agencies 10 years after the Public Records Act 2005 are unacceptable. We need to work together with agencies to lift performance.*¹²

- 5.22 We also see the importance of those comments in the work we do. It is not uncommon for us to consider situations where public organisations have not explained enough or made information available about the decisions they have made or what they have spent money on.

10 Controller and Auditor-General (2018), *How the Overseas Investment Office uses information*, Wellington, Part 3.

11 Controller and Auditor-General (2016), *Governance of the National Security System*, Wellington, paragraphs 3.25 and 3.26.

12 Archives New Zealand (2017), *Archives 2057 Strategy*, Wellington, page 9.

- 5.23 In our 2016 report *Inquiry into the Saudi Arabia Food Security Partnership*, we considered a contract for services entered into between the Ministry of Foreign Affairs and Trade and a Saudi Arabian group of companies, and payments made under that contract to a Saudi Arabian businessman. The inquiry was conducted because concerns were raised about money that the Government had paid to the Saudi Arabian businessman, and questions were asked about whether the payments amounted to corruption or bribery.
- 5.24 Although we found no evidence of bribery or corruption, one of the issues we focused on was transparency. We said the benefits of the contract were not clear, the contract did not outline the different policy objectives behind the arrangement, and it was not made clear on what basis the amounts paid under the contract were arrived at. This lack of transparency, at the time of the decision and later, led to public concerns that were not resolved through information requests or by explanations from officials. As we said in that report, without transparency, people will speculate.
- 5.25 Similarly, in our 2017 report *Inquiry into aspects of Auckland Council's Westgate/Massey North town centre project*, we noted that unsuccessful attempts by members of the public and council members to get information about the project resulted in complaints being made.
- 5.26 Our report commented on the importance of public organisations being as open as they can with their stakeholders about the arrangements they enter into and demonstrating how they are getting value for money. That transparency allows public discussion and debate, and is essential to supporting public accountability.
- 5.27 Organisations can be proactive about providing information to the public. Many organisations are increasingly making information available online, which provides easy access for the public and avoids the cost of handling individual requests for the organisation. A good example is the information made available by Auckland Council about its contracts and payments. The Council provides details on its website about the contracts it has awarded and how much it has spent on suppliers in each financial quarter where the amounts are greater than \$50,000.¹³

13 See the section on *Awarded contracts and supplier spend*, at www.aucklandcouncil.govt.nz.

Questions to consider

Do you provide your decision-makers with relevant, accurate, and up-to-date information?

Do you provide information to decision-makers in an appropriate form, and do your information systems facilitate that?

Do you learn from your decisions, including what your decisions cost to implement and how effective the decided course of action was?

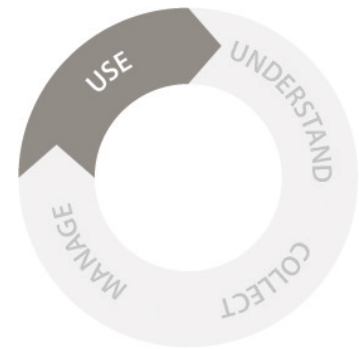
Do you keep good records about your business activities and decision-making?

Do you actively consider what information you can make available to the public?

6

Using technology to provide information and services

- 6.1 The world is undergoing a digital transformation that is changing the way people live their lives. Products and services are now designed so that technology is seamlessly integrated into our lives, and people are doing more and more everyday tasks online.
- 6.2 Whether it is booking a holiday, buying movie tickets, or banking on the go, people now expect the speed and convenience that online services provide. Those expectations are not limited to services provided by the private sector. The challenge for public organisations is to provide the same level of easy and seamless online services.
- 6.3 Traditionally, public services have been provided by single agencies thinking only about the services they are responsible for providing. This often required people to interact with several agencies to obtain information about, or apply for, government-provided services. This also led to the creation of individual IT systems and design models that do not integrate well with each other when public organisations try to collaborate.
- 6.4 Providing digital services is not just about improving IT systems or publicly facing websites. Public organisations are increasingly required to work together to design and deliver services with a clear customer focus, so that people can interact with the public sector more easily.



A system-level strategic approach is essential

- 6.5 In Part 3, we discussed the functional leadership roles of the Government Chief Data Steward and the Government Chief Digital Officer.
- 6.6 Strong support and guidance from the functional leaders is needed as the public sector moves to a digital-by-design approach to providing information and services to people. The Government Chief Digital Officer is, in particular, responsible for “ICT-enabled transformation across government agencies”.
- 6.7 In our article *Data leadership*, we noted the importance of this system-level leadership in achieving such a transformation – enabling people to access services when and where they need them, involving them in policy decisions that affect them, and building trust in the public sector.

Providing digital information and services is challenging

- 6.8 Meeting expectations about making public services and information available digitally is not an easy task. In our 2018 report *Digital access to information and services: Learning from examples*, we noted that the complexities and challenges of doing so need to be well understood and managed. The examples we looked at showed that it is easy to underestimate the time and work required.
- 6.9 We also noted the importance of understanding and keeping up with emerging technologies and customer expectations. Public organisations need to keep thinking about how changes can affect how they run their business and the way that they manage information, business processes, organisational culture, and behaviour as a result.

Collaboration is essential

- 6.10 Internationally, governments are shifting from working in traditional agency “silos” to providing digital services to the public that are designed and delivered around a customer’s life events and needs.
- 6.11 Here in New Zealand, the first such “life event” service created was SmartStart – an online tool for people who are about to have a baby. The four government departments involved¹⁴ worked collaboratively to provide parents and caregivers with online access to government information and support during a pregnancy and for the first six months of a baby’s life. SmartStart also allows users to register the birth of their baby, apply for an IRD number, and update their benefit details.
- 6.12 Work has begun to design similar services for people who are transitioning to tertiary education; a victim of or witness to crime; reaching retirement age (turning 65); or preparing for bereavement.
- 6.13 As part of our research on how public organisations use data, we talked to several public organisations about the challenges of sharing data. Some of the challenges we were told about included:
- different organisations having different levels of data maturity;
 - agreeing the right approach – what should be shared, how best to do it, and who should carry the cost; and
 - using a common set of standards for data.

14 The Department of Internal Affairs, the Ministry of Social Development, the Inland Revenue Department, and the Ministry of Health.

- 6.14 We also looked more closely at some case studies, including SmartStart and Te Hokinga ā Wairua – an end-of-life service. In our article *Sharing data*, we noted that several factors enabled the agencies involved to collaborate successfully in designing and delivering the respective services. These included:
- cross-agency project governance structures and sponsorship at the executive level of each agency;
 - a clear shared project vision and outcomes;
 - a project team with the right capabilities and disciplines involved (including data analytics, researchers, story-tellers, IT architects, legal advisers, and privacy experts);
 - not governing the projects as “IT projects”;
 - established principles about using and managing data;
 - a clear understanding about financial commitment from each agency; and
 - designing the services with privacy considerations at the centre (see also Part 5).

Customer feedback is important

- 6.15 Providing services digitally is not just about technology. It is about putting the customer at the centre of the design and delivery of the service. In several of our reports, we have encouraged public organisations to use information obtained through customer complaints or feedback processes to improve the way they provide services. This is particularly important when providing services online.
- 6.16 As part of our work on the *Information* theme, we carried out an online forum and group discussion with people from all walks of life who shared their experiences in obtaining information from, or providing information to, the public sector.
- 6.17 Many of the participants commented on the importance of customer service, with one participant noting that:

It seems that, all too often, these organisations are so obsessed with their own objectives that they don't think about how the end user interacts with the service. It's not just about putting text on a page, or merely having a call centre, but having services that make people feel safe, confident, and able to access information. By thinking about how end users feel, rather than [key performance indicators], I feel like these services would be more useful and garner better results.

Digital services must be accessible and of a good standard

- 6.18 When providing access to information or services online, it is essential that websites are usable and accessible for all people, including senior citizens, those with disabilities, and those from other cultures.

6.19 In our 2018 report *Digital access to information and services*, we looked at three online services and assessed the agencies' relevant websites or apps against the Government's web standards for usability and accessibility.¹⁵ Although the websites we looked at mostly complied with the relevant standards, even the smallest issues can affect users with poor eyesight, not using a mouse, or using screen readers or text-to-speech browsers.

6.20 Public organisations should carry out regular usability and accessibility reviews of their websites or mobile apps to ensure that as many people as possible can access information and services.

Assessing the benefits realised through technology projects

6.21 In our 2012 report *Realising benefits from six public sector technology projects*, we outlined the elements of good practice for delivering IT projects. These elements included:

- understanding the environment and making the most of circumstances;
- using a business-led, flexible, and agile approach;
- having strong support from leaders and senior managers;
- working effectively with the right people, including end-users;
- using the right technology tools; and
- monitoring and understanding the benefits.

6.22 Some of these elements are covered in our discussion on the success factors of SmartStart and Te Hokinga ā Wairua. In some of our other recent work, we have emphasised the importance of monitoring and measuring benefits. For example, in our 2017 report *Ministry of Health: Supporting the implementation of patient portals*, we noted that systematic monitoring of the benefits of patient portals would enable the Ministry of Health to:

- form a clearer picture of the benefits achieved;
- understand problems or barriers experienced by users; and
- make improvements as a result.

Questions to consider

Do you assess your online services and information to ensure that they are usable and accessible?

As you move to providing services and information online, do you measure benefits and make improvements as a result?

¹⁵ The services were the National Library's digitisation of records, Quotable Value Limited's home buyers' property information, and Greater Wellington Regional Council's real-time travel information.

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