

# Abandoning Silos

How innovative governments are collaborating horizontally to solve complex problems

BY MICHAEL CRAWFORD URBAN

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Simply put,  
governments have  
trouble solving big  
complex problems  
in large part because  
governments have  
been organized  
into collections of  
narrowly focused  
vertical silos.

# EXECUTIVE SUMMARY

Governments at all levels are struggling to solve complex problems that demand a horizontal approach. From large information and communication technology (ICT) transformations to income security reform, these challenges are difficult to solve, in part because they cut across long-standing and well-defined government boundaries and organizational structures.

This report offers guidance on the tools and approaches that a number of innovative governments are using – successfully – to tackle complex horizontal challenges.

The report begins with a high level overview of the key obstacles to effective horizontal collaboration. Our analysis is organized along three dimensions which we see as fundamental, defining features of an organization's character: how an organization structures accountability and responsibility (governance); how an organization manages its culture and members (people); and the ways in which an organization collects, transmits and uses information (data).

Guided by this analytical framework, we identify three case studies – one each from Estonia, the United Kingdom (UK) and New Zealand – which provide some of the most compelling and illuminating examples of horizontal success. Each one of these case studies shows how steps can be taken along one of these dimensions – governance, people or data – to enable collaboration by solving obstacles that commonly arise when trying to work horizontally.

In each of these case studies, the implementation of an innovative tool delivered critical benefits. In Estonia, the greater horizontal collaboration enabled and encouraged by the “once only” principle has significantly reduced government costs and the regulatory burden on citizens and business. The UK's recognition of professional specialisms is enabling the government to get more out of its existing personnel and to recruit more of the high quality professionals that it needs. For New Zealand, the Data Exchange is providing new and impactful data-driven insights that are already helping it improve the quality of its human services and lower its costs.

We recognize that there are no one-size-fits-all solutions. Our hope is that the ideas and discussion in this paper will help readers in a variety of contexts think through their own horizontal challenges in new ways and jump start or accelerate their search for solutions.

This report combines leading-practice research with on-the-ground feedback from public sector leaders. We would like to thank the 35 provincial and municipal public sector leaders who attended our April 2018 Horizontality Workshop as well as the two dozen who attended our project dialogues in January 2018. The outcomes of these discussions have been supplemented by research and key informant interviews conducted by the Mowat Centre and experience drawn from our collaborators.

The fact that government's traditional structure lines up awkwardly with many of today's most pressing problems cannot be an excuse for avoiding horizontal problem-solving.

# 1 INTRODUCTION

Governments around the world are grappling with a variety of “horizontal problems.” While many of these problems, such as large information and communication technology (ICT) transformations or income security reform, are inherently difficult to solve, much of the challenge governments face in tackling them stems from how governments are organized.

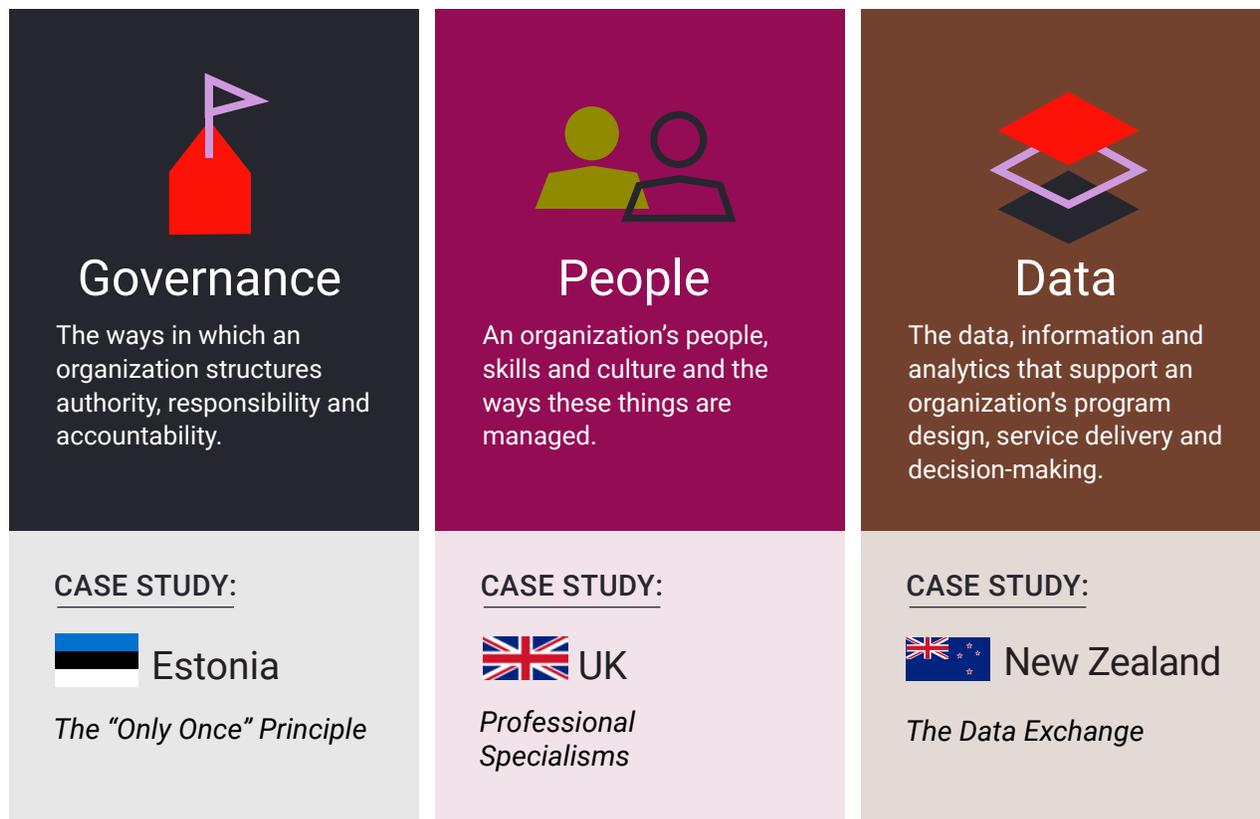
Simply put, governments have trouble solving big complex problems in large part because governments have been organized into collections of narrowly focused vertical silos. While adept at solving problems that fall neatly within these silos, governments are not well-designed for tackling problems that spillover across multiple silos. This is true for internal collaboration between departments and for external collaboration with other governments or partners from the not-for-profit or private sectors.

To understand why this is so, consider the common problem of how budgets for projects that cross departmental boundaries are managed. Even when departments collaborate horizontally authority over, and accountability for, budgets needs to be located somewhere within the traditional silo-ed hierarchy. If the budget is assigned to one “lead” department, one of two things tends to happen. Either the “lead” department basically takes over the project and other departments are discouraged from actively participating, or partner departments, having little financial incentive to collaborate meaningfully, disengage from the project leaving the lead department to solve the problem with only token assistance. Alternatively, if responsibility for budgets is genuinely shared, departments will often simply divide the funds involved and continue working within their own silos.<sup>1</sup> Neither of these outcomes constitute examples of effective horizontality.

Governments are organized this way for many good reasons. But the fact that this traditional structure lines up awkwardly with many of today’s most pressing problems cannot be an excuse for avoiding horizontal problem-solving. Failure to meet rising citizen expectations in these critical areas is not an option, and success increasingly requires collaboration across departmental boundaries – even if it is difficult.

This report is underpinned by an analytical framework that draws our attention to three distinct dimensions of how public sector organizations arrange themselves: governance, people and data.

<sup>1</sup> Bakvis, H. and Juillet, L. 2004. *The Horizontal Challenge: Line Departments, Central Agencies and Leadership*. Canadian School of Public Service. Page 51.



We have used this framework to guide our selection and exploration of three real world case studies, each one of which describes how a different government has been able to use a different innovative tool to enable better horizontal collaboration. Our goal in presenting these case studies is to highlight approaches that can be adopted and adapted in readers' organizations as ways of increasing their own horizontal capabilities.

Each of the three cases highlights one of the three dimensions of our analytical framework and, consequently, each one offers its own unique lessons.

» **The "Once Only" Principle**

By legally prohibiting government bodies from asking Estonian citizens and businesses for information they have already provided to other parts of the government, the "once only" principle consolidated the development of an unrivalled platform from which to engage in horizontal problem-solving and whole-of-government collaboration.

» **Professional Specialisms**

The recognition of distinct professional qualifications and skills in the United Kingdom (UK) civil service shows how horizontal professional networks can enable governments to allocate their personnel more effectively and foster more cross-departmental perspectives, thereby improving organizations' operational capabilities and decision-making.

» **The Data Exchange**

New Zealand's digital infrastructure for sharing government data for research and program design demonstrates an original way of creating a horizontal "person-centred, integrated approach" to social policy. This approach is enabling the design of comprehensive wrap-around care for vulnerable members of society that promises to improve outcomes for individuals and save government money.

## Methodology

This report marries rigorous research with practical expertise and input from public servants engaged in the day-to-day work of public sector transformation. The topic for this report was drawn from the deliberations of two focus groups conducted with two dozen senior public servants from the Ontario Public Service (OPS) and several Ontario municipal governments in January 2018. These focus groups were supplemented by an online survey circulated to a much larger group of senior officials.

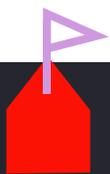
The analysis in this paper was further informed by a special workshop held in April 2018 focused specifically on horizontality. Around 35 senior and mid-level public servants from the OPS and several Ontario municipalities participated in this workshop. The outcomes of the workshop have been supplemented by key informant interviews with multiple individuals involved in each case study, research by the Mowat Centre and expertise drawn from our collaborators and anonymous reviewers.

Public servants do not need another report aimed at convincing them that horizontal problem-solving is good; what we need are case studies that describe how to do it effectively.

# 2 OBSTACLES

Understanding the obstacles that hinder attempts at horizontal collaboration is an important step in overcoming these obstacles and in enabling improved horizontality. In this section, we focus on exploring these challenges in greater depth. Below, we define obstacles that we have identified as the most common and consequential challenges encountered by governments as they seek to collaborate horizontally. We have grouped these challenges according to the dimension of our analytical framework with which they are most associated.

Each of these obstacles can hinder horizontal collaboration in its own way. Unfortunately, public servants seeking to engage in horizontal collaboration must often overcome more than one of them at the same time. It should be noted, however, that none of the problems profiled here are the “fault” of any particular individual. Naturally, there are bad bosses and difficult colleagues that inhibit effective collaboration everywhere. But these sorts of problems are not over-represented in, or specific to, government nor are they problems that specifically block horizontal collaboration. Instead, the obstacles listed in this table are specifically related to horizontal collaboration, derive from the specific organizational systems and structures – and the incentive structures that they create – which are common to, and important for, governments. In other words, our focus is on structural and systemic government problems, the solutions to which also have structural or systemic components.



## Governance

### Vertical responsibility:

In public sector organizations, *accountability tends to be organized on the basis of narrow vertical silos*. Because they are directly accountable for their department-specific responsibilities, it can be difficult for public servants to align their departmental responsibilities and priorities with those of the whole-of-government. This is especially the case when the benefits of collaboration, even if large overall, are widely spread between departments while the costs involved are concentrated in a single one.

### Individual incentives:

Horizontality is often frustrated by *professional incentive structures that align poorly with working horizontally*. For example, horizontal work is often poorly recognized in performance assessments.



## People

### Insufficient resources:

Horizontality requires intangible prerequisites like trust- and team-building. Attempts at horizontality often underestimate the time and resources required to put these prerequisites into place.

### 21st century skills:

Working horizontally requires a skill set characterized by *flexibility, creativity and the ability to communicate and collaborate within and between teams*. Governments can have difficulty retaining workers and managers with these skills.

### Champions needed:

Horizontality requires champions able to clear away institutional obstacles. Too often, however, horizontal proposals encounter leaders incentivized to provide “*yeah, buts*” – reasons why a solution cannot happen – instead of making the extra effort needed to make it possible.



## Data

### Privacy concerns:

Sharing data and information is a defining characteristic of horizontality. But many potential horizontal solutions are *blocked by real or perceived concerns around privacy and restrictive data-use requirements*.

### Technological constraints:

Working horizontally means collaborating across institutional boundaries and technological systems. Unfortunately, *incompatible data standards/formats and legacy systems that are not interoperable can create significant barriers*.







## Governance

### CASE STUDY:



## Estonia

### *The "Only Once" Principle*

By legally prohibiting government bodies from asking Estonian citizens and businesses for information they have already provided to other parts of the government, the "once only" principle consolidated the development of an unrivalled platform from which to engage in horizontal problem-solving and whole-of-government collaboration.

### OBSTACLES ADDRESSED:

- ✓ Vertical responsibility
- ✓ Technological constraints
- ✓ Privacy concerns



## People

### CASE STUDY:



## UK

### *Professional Specialisms*

The recognition of distinct professional qualifications and skills in the UK civil service shows how cultivating horizontal professional networks can enable governments to allocate their personnel more effectively and foster more cross-departmental perspectives, thereby improving organizations' operational capabilities and decision-making.

### OBSTACLES ADDRESSED:

- ✓ Vertical responsibility
- ✓ Individual incentives
- ✓ Insufficient resources



## Data

### CASE STUDY:



## New Zealand

### *The Data Exchange*

New Zealand's digital infrastructure for sharing government data for research and program design demonstrates an original way of creating a horizontal "person-centred, integrated approach" to social policy. This approach is enabling the design of comprehensive wrap-around care for vulnerable members of society that promises to improve outcomes for individuals and save government money.

### OBSTACLES ADDRESSED:

- ✓ Technological constraints
- ✓ Privacy concerns

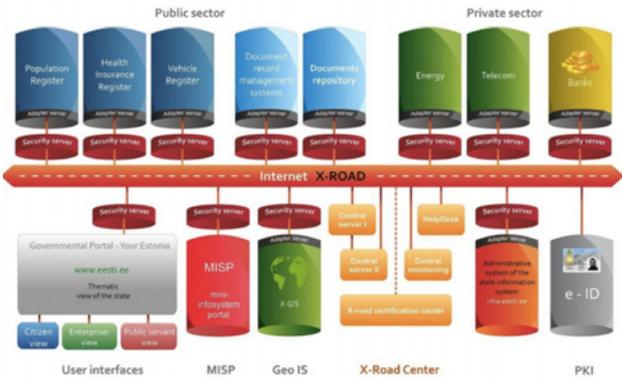


## ▶ The mission

In the aftermath of the collapse of the Soviet Union in the early 1990s, newly (re)independent Estonia faced the task of building a national government from scratch. Recognizing that it was too poor to implement the kind of high-tax/high-service model that its Scandinavian neighbours possessed, Estonia sought to achieve Scandinavian levels of public services by creating a hyper-efficient digital-first government.

Since then, Estonia has built a world-leading e-government system. This system rests on four foundational pillars. The first was erected in 2000 with the creation of a national population register in which every Estonian was represented by a unique numerical identifier.<sup>2</sup> The second pillar arrived with the creation of Estonia’s “X-road,” a data exchange software layer that links all government departments and agencies as well as many private institutions such as the country’s banks and telecommunications firms (See Figure 1).<sup>3</sup> The third pillar was put in place through the introduction of a government-issued, digitally-enabled, identity card for Estonians (See Figure 2) in 2002.<sup>4</sup>

**FIGURE 1**  
Estonia’s X-road



Source: Vassil, K. June 2015. “Estonian e-Government Ecosystem: Foundation, Applications, Outcomes.” *World Development Report Background Paper*. <http://pubdocs.worldbank.org/en/165711456838073531/WDR16-BP-Estonian-eGov-ecosystem-Vassil.pdf>. Page 12.

2 Population Register Act, *Riigi Teataja*. 31 May, 2000. <https://www.riigiteataja.ee/en/eli/516012014003/consolide>.  
 3 Kivimäki, P. September 4, 2018. “X-Road Myth Busting – Part 1.” *Blog*. Nordic Institute for Interoperability Solutions. <https://www.niis.org/blog/2018/9/3/x-road-myth-busting-part-1>.  
 4 Identity Documents Act, *Riigi Teataja*. 15 February, 1999. <https://www.riigiteataja.ee/en/eli/ee/526042018001/consolide/current> ; Vassil, K. June 2015. “Estonian e-Government Ecosystem: Foundation, Applications, Outcomes.” *World Development Report Background Paper*. World Bank. <http://pubdocs.worldbank.org/en/165711456838073531/WDR16-BP-Estonian-eGov-ecosystem-Vassil.pdf>. Page 5.

FIGURE 2

### Estonia's Identity Card



Source: Department of Computer Science. 2015-2016. "Mobile-ID and smart cards by the example of Estonian ID-card." *Course Materials: Information Security*. University of Tartu. <https://courses.cs.ut.ee/2015/infsec/fall/Main/EstonianID-card>.

Finally, the system's foundation was completed with the addition of the fourth pillar, namely the entrenchment of the "once only" principle in Estonian law through the amendment of Estonia's *Public Information Act* in 2007.<sup>5</sup> The "once only" principle refers to the idea that once a citizen has provided a piece of information to the government, it is the responsibility of the government to re-use that information internally instead of asking the citizen to provide the same information again.

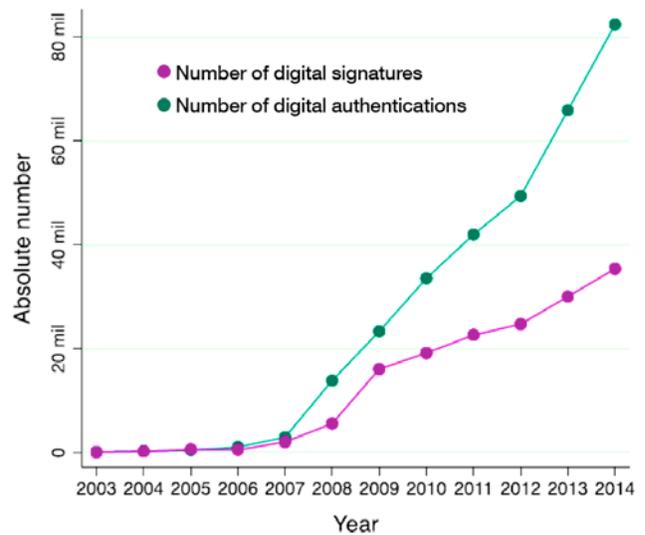
## ? How does it work?

The term "once only" principle does not appear in the *Public Information Act*. Rather, the concept is given legal force through a prohibition against government entities creating databases that duplicate information held elsewhere in government.<sup>6</sup> The effect of this prohibition is to force the various parts of government to rely on information sharing systems and procedures.

The entrenching of the "once only" principle in law was essential for advancing Estonia's e-government agenda because it transformed the voluntary experimentation with data-sharing between government departments

FIGURE 3

### Use of Estonia's e-Government System Over Time



Source: Vassil, K. June 2015. "Estonian e-Government Ecosystem: Foundation, Applications, Outcomes." *World Development Report Background Paper*. World Bank. <http://pubdocs.worldbank.org/en/165711456838073531/WDR16-BP-Estonian-eGov-ecosystem-Vassil.pdf>. Page 8.

5 Krimmer, R. Kalvet, T. Toots, M. Cepilovs, A. 29 December, 2017. *The Once-Only Principle Project: Position Paper on Definition of OOP and Situation in Europe (updated version)*. Tallinn University of Technology. [http://www.toop.eu/sites/default/files/D2.14\\_Position\\_paper\\_OOP\\_update.pdf](http://www.toop.eu/sites/default/files/D2.14_Position_paper_OOP_update.pdf). Page 11; Public Information Act, *Riigi Teataja*. 15 November, 2000. <https://www.riigiteataja.ee/en/eli/514112013001/consolide>.  
 6 Public Information Act, *Riigi Teataja*. 15 November, 2000. § 43<sup>3</sup>

that had been occurring after the creation of the X-road into a necessary requirement. In so doing, it ensured that any further progress on e-government took place on a coordinated whole-of-government basis. Indeed, as shown in Figure 3, use of the e-government system – as measured by log-ins and the use of a digital signature – by citizens and businesses only really took off after the “once only” principle was implemented in 2007.<sup>7</sup>

Importantly, while it is undeniable that the successful emergence of Estonia’s wider e-governance system benefited from the clean slate and lack of legacy systems that characterized the country as it emerged from Soviet rule in the early 1990s,<sup>8</sup> it would be wrong to say that implementation of the “once only” principle, which became official 15 years later, did not confront any challenges from legacy systems or thinking.

As one of our interviewees pointed out, Estonia largely built its public administration in the 1990s, during a time when the “New Public Management” approach was ascendant. In fact, during this period, the Estonian government became quite decentralized with Estonia’s government departments operating highly independently of one another.<sup>9</sup> Collaboration between these organizations was difficult. Thus, even though Estonia possessed a clean slate in the early 1990s, implementing the “once only” principle required overcoming significant inertia and attachment to legacy systems that had already accumulated by 2007. Indeed, while highly successful, one of our interviewees suggested that overcoming these organizational barriers and integrating all of Estonia’s government databases is still an ongoing and unfinished project.

Even if the project is not totally complete, the impact on citizens and businesses has been profound. As one of our Estonian interviewees – who has lived in six different countries – pointed out, it is rare for Estonians to be asked for information by their institutions at all, a major difference compared to her experience in other countries. Instead, they just present their identity card or use it and its associated PIN to log into a service.

When personal or business information changes for an Estonian, such as their marital status or address, this change only needs to be entered into the system once, thus saving them all the time and effort that would otherwise be required to inform all the other government departments of the change. Since many private institutions, such as banks, are also connected to the system, these systems also have access to the most up-to-date and complete data as well, without citizens or businesses having to do anything. This reduces the regulatory burden on citizens and businesses significantly.<sup>10</sup>

7 Pop, V. 26 February, 2015. “You can’t use 18th century law for a digital world.” *EUobserver*. <https://euobserver.com/economic/127800>. At the same time, as one of our interviewees pointed out, it would be wrong to assign this leap in usage solely to the change in law. As always, reality is complex and there were a few additional factors, such as changes in how the cards could be used for banking, that also impacted usage at this time.

8 The Economist. 31 July, 2013. “How did Estonia become a leader in technology?” *The Economist*. <https://www.economist.com/the-economist-explains/2013/07/30/how-did-estonia-become-a-leader-in-technology>.

9 Agbonlahor, W. 29 September, 2016. “Margus Sarapuu, head of ‘Zero Bureaucracy’ task force, government of Estonia: Exclusive Interview.” *Global Government Forum*. <https://www.globalgovernmentforum.com/margus-sarapuu-head-of-zero-bureaucracy-task-force-government-of-estonia-exclusive-interview/>.

10 For a greater discussion of the importance of reducing regulatory burdens, see Johal, S. and Urban, M. May 2017. *Regulating Disruption: Governing in an era of rapid technological change*. The Mowat Centre. <https://mowatcentre.ca/regulating-disruption/>.

From the government's perspective, the "once only" principle means that instead of every department maintaining databases containing large amounts of redundant information, they maintain much leaner and more focused – and consequently more accurate – databases that collect only the data that is primarily of interest to them. General use information, like birth date or address is maintained by centralized registries specifically dedicated to these tasks. When this information is needed, departments use an individual's unique numerical identifier and the X-road to query the registers maintained by other institutions.<sup>11</sup>

The entire system is centrally coordinated, which is critical for overcoming **technological constraints**. Government departments that wish to create a new database must justify their collection of this information to a central body. If the creation of a new database is authorized, teams of specialists

are tasked with ensuring that the new database is correctly secured and meets the technical and interoperability standards of the larger system. Organizations also automatically receive ongoing support for a host of technical tasks including: "client authentication, authorization, registry services, query design services to various state managed data depositories and registries, data entry, secure data exchange, logging, query tracking, visualization environment, central and local monitoring, etc."<sup>12</sup>

The Estonian government also realized that in order to overcome **privacy concerns** and win public acceptance for a system that incorporated the "once only" principle, the system needed to incorporate high levels of privacy, transparency and accountability right from the start. Thus, one of the key features of the system is the ability of citizens to see all the information the government has collected on them and to make corrections if necessary. Estonians are also able to see who else has

accessed their information and, if this accessing was inappropriate, it can be reported to law enforcement with serious legal consequences for the offender.<sup>13</sup> For certain types of information, such as medical records, citizens are even able to control who has access to that information.<sup>14</sup>

Overall, this system is based on a recognition that data belongs to the people and that individual government entities are merely custodians. By making the system more transparent and giving citizens more control over their information, Estonians largely believe that they have both more efficient government through better data-sharing and improved privacy and control than they had under older systems.<sup>15</sup>

*By making data-sharing mandatory, ubiquitous and effectively automated, the "once only" principle has helped to align many vertical and horizontal responsibilities.*

11 Estonia is also backing up its government databases, most famously in case of foreign invasion, in "data embassies" held in other countries such as Luxembourg. *e-estonia*. June, 2017. "Estonia to open the world's first data embassy in Luxembourg." *e-estonia*. <https://e-estonia.com/estonia-to-open-the-worlds-first-data-embassy-in-luxembourg/>.

12 Vassil, K. June 2015. "Estonian e-Government Ecosystem." Page 11

13 Priisalu, J. and Ottis, R. 15 June, 2017. "Personal control of privacy and data: Estonian experience" *Health Technology*. 7, 441–451. Page 445.

14 Heller, N. 18 & 25 December, 2017. "Estonia, the Digital Republic." *The New Yorker*. <https://www.newyorker.com/magazine/2017/12/18/estonia-the-digital-republic>.

15 Priisalu, J. and Ottis, R. 15 June, 2017. "Personal control of privacy and data: Estonian experience." Page 445.

Finally, this approach also helps to overcome governance challenges like **vertical responsibility**. By making data-sharing mandatory, ubiquitous and effectively automated, the “once only” principle has helped to align many vertical and horizontal responsibilities, at least insofar as information sharing is concerned. Instead of adding horizontal elements to the margins of an organization’s responsibilities, the “once only” principle converts certain products of an organization’s core responsibilities – responsibilities for which members of the organization are vertically accountable – into a horizontally shared resource. In other words, the “once only” principle has essentially made it possible to advance certain departmental and whole-of-government priorities simultaneously by weaving them together through the clever use of technology.

## Benefits

- » **From the perspective of the citizen, the most obvious benefit of the “once only” principle is the added convenience that it entails.**

For example, because tax filing forms are so well pre-populated, 40 per cent of tax filers spend only one minute reviewing their government generated tax form, make no changes to it, and submit it.<sup>16</sup> One-hundred per cent of medical prescriptions are now digital. It takes only 18 minutes to register a company online.<sup>17</sup> In the most recent elections (October 2017), 31.7 per cent of voters cast their ballots online.

- » **The “once only” principle has helped make Estonia’s government vastly more efficient than it would otherwise be.**

The “once only” principle is a critical pillar that supports Estonia’s e-government system, which politicians like to boast saves the Estonian government costs equivalent to around two per cent of their GDP every year.<sup>18</sup> Quantified another way, one Estonian government official we interviewed suggested that the system resulted in government saving the equivalent of a 300 metre high stack of paper every month.

- » **The “once only” principle has enabled a system that is extremely efficient in the information it holds and thus much more secure against inadvertent data leaks and, because of its limited “attack surface,” against cyber-attacks and hacks.<sup>19</sup>**

It is notable that in its entire history, the e-government system has, apparently, never been successfully penetrated, even during the massive cyber-attack that Estonia was subjected to in 2007<sup>20</sup> or after the 2017 identification of a theoretical vulnerability in Estonians’ digital ID cards.<sup>21</sup>

16 Jacobson, L. 4 June, 2014. “Jeb Bush says Estonians can file their taxes in five minutes. Really?” *Politifact*. <https://www.politifact.com/truth-o-meter/statements/2015/jun/04/jeb-bush/jeb-bush-says-estonians-can-file-their-taxes-five/>.

17 Herlihy, P. 31 October, 2013. “Government as a data model: what I learned in Estonia.” *Government Digital Service Blog*. The Government of the United Kingdom. <https://gds.blog.gov.uk/2013/10/31/government-as-a-data-model-what-i-learned-in-estonia/>.

18 Sorell, M. October 5, 2015. “What Australia can learn about e-government from Estonia.” *The Conversation*. <https://theconversation.com/what-australia-can-learn-about-e-government-from-estonia-35091>.

19 Priisalu, J. and Ottis, R. 15 June, 2017. “Personal control of privacy and data: Estonian experience.” Pages 444-445.

20 Priisalu, J. and Ottis, R. 15 June, 2017. “Personal control of privacy and data: Estonian experience.” Pages 446-447.

21 Aasmae, K. 13 November, 2017. “Estonia’s ID card crisis: How e-state’s poster child got into and out of trouble.” *ZDNET*. <https://www.zdnet.com/article/estonias-id-card-scrisis-how-e-states-poster-child-got-into-and-out-of-trouble/>.

- » **The “once only” principle has enabled the creation of a true digital “government as a platform.”**<sup>22</sup> Whether it be the significant efficiencies and cost savings that use of the e-government’s system can provide to business or the ability to build new horizontal initiatives like Estonia’s ground-breaking e-residency program on top of the system, the “once only” principle has helped to enable a much more nimble and innovative government.<sup>23</sup>



## Success factors

- » **Visionary political leadership** willing to take risks and interested in building systems, the full benefit of which was not knowable in advance and was not likely to be quickly realized.
- » The patience and cross-partisan commitment needed to enable **a gradual step-by-step approach that remained consistent through many years** and across multiple political administrations.
- » Significant **ongoing public discussion** of the system as a means of fostering cross-partisan support, **inclusively educating the public and gaining public support**, confidence and enthusiasm for the government’s vision.
- » A constant focus on ensuring **a simple and accessible end-user experience for all that provides tangible and significant benefits to users**.
- » The **involvement of major private sector institutions**, such as banks and telecommunications firms, which has helped to provide a critical on-ramp to frequent use of the system for many Estonians.<sup>24</sup>
- » **High levels of government transparency** around the system’s challenges, especially at critical moments like the 2007 cyber-attacks. As one of our interviewees pointed out, this high level of transparency has helped foster a higher level of understanding of the system on the part of citizens, which has in turn provided a strong foundation of popular acceptance and trust that has enabled its further development.
- » **A sense of urgency and necessity**. Estonia faced the possibility of mass emigration to wealthier neighbouring states in Scandinavia after independence. To thrive, it had to come up with a cost-effective way of providing quality government services at a low cost.

22 “Government as a platform”, or GaaP, refers to the idea that one of government’s key functions is to be a convenor or enabler of beneficial forms of collective action. Thus, it refers to the idea that government should work to enable private individuals and groups to engage in beneficial activities that it would be difficult or impossible to undertake without government support – and which government itself is unlikely or poorly suited to do. For example, this often involves the creation of value through the leveraging of government data, as with citizen science initiatives or in building real-time transit tracking apps. See O’Reilly, T. “Chapter 2. Government as a platform.” *Open Government*. <http://chimera.labs.oreilly.com/books/1234000000774/ch02.html>.

23 See <https://e-resident.gov.ee/>. For analysis on the e-residency program, see Urban, M. with Pineda, D. August 2018. *Inside the Black Blocks: A policymaker’s introduction to blockchain, distributed ledger technology and the “Internet of Value.”* The Mowat Centre. [https://mowatcentre.ca/wp-content/uploads/publications/168\\_inside\\_the\\_black\\_blocks.pdf](https://mowatcentre.ca/wp-content/uploads/publications/168_inside_the_black_blocks.pdf). Page 50-53.

24 Vassil, K. June 2015. “Estonian e-Government Ecosystem.” Pages 9-10.



## The mission

Since the beginning of this century there has been a growing recognition that more and more critical tasks within government need dedicated and specialized professional expertise. In response, the UK government has, since 2013, made significant efforts to increase the professionalization of its civil service.<sup>25</sup> One of the main ways it has been working to “get the right people to the right places” has been through the creation of professional “specialisms.”

The impending upheaval of Brexit has only added urgency to this effort. By forcing a rapid re-prioritization within government, the decision to exit the European Union has created a massive horizontal challenge for the UK government as it seeks to redeploy its human resources to meet a host of new and time-sensitive priorities. The better understanding of its workforce’s professional expertise provided by its focus on professional specialisms, and the broader perspective on their careers that this focus has encouraged, have helped the UK government to quickly reorganize itself to meet this unexpected and pressing challenge.



## How does it work?

Specialisms are groups of civil servants who share specific skill sets and experiences required by government. Examples of cross-departmental specialisms, also known as professional functions<sup>26</sup> or professions,<sup>27</sup> include those skill sets that any large organization requires – such as finance and human resources – as well as some more particular to government, such as policy. As of March

25 McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Institute for Government. <https://www.instituteforgovernment.org.uk/publications/professionalising-whitehall-september-2017>. Page 15.

26 McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Page 16 (footnote). The Ontario government uses the term “functional communities” to describe similar, but less well-developed, groupings in its workforce.

27 See <https://www.gov.uk/government/organisations/civil-service/about>.

2018, there were 12 recognized cross-departmental specialisms – the sub-set of specialisms of interest in this report – in the UK government, and members of these specialisms make up about 22 per cent of the government workforce.<sup>28</sup>

As the recognition of specialisms has progressed, the concept is being better defined. In 2015, the Cabinet Office set out core design principles for specialisms, including minimum standards; sharing expertise, systems and resources; and ensuring that specialist activities and support are tailored to departmental needs.<sup>29</sup> In 2016, this list was expanded to include career paths with structured progression and professional development opportunities, thereby helping to align specialist's

**individual incentives** in a more cross-departmental direction.<sup>30</sup>

This has helped specialists to view their careers “through the lens of their specialism as a whole, rather than simply their home department”<sup>31</sup> – a perspective identified by many of our workshop participants as critical to successful horizontality in government.

The UK government's implementation of specialisms is distinctive in that each specialism is headed by a senior full-time head of specialism who is responsible for managing and nurturing the specialist network. Other countries, such as New Zealand, have less developed and effective forms of professional specialisms. One of the ways in which they are less developed is the fact that their heads of specialisms simultaneously hold other important positions, meaning the attention they can devote to the specialism itself is more limited.<sup>32</sup>

These full-time heads of specialism – whose mandates and outlooks are necessarily horizontal – also bring these horizontal perspectives into the senior decision-making bodies on which they are increasingly serving. Their expertise and responsibility

for stewarding horizontal networks also provides them with significantly expanded opportunities to identify problems that could benefit from horizontal problem-solving and propose solutions in that vein.<sup>33</sup> Indeed by creating a high level position that is in many ways vertically accountable for a horizontal network, specialisms help to partially dissolve some of the problems associated with **vertical responsibility**.

*The UK government's implementation of specialisms is distinctive in that each specialism is headed by a senior full-time head of specialism who is responsible for managing and nurturing the specialist network.*

28 Whitehall Explained. 8 August, 2017. *Specialisms in the civil service*. Institute for Government. <https://www.instituteforgovernment.org.uk/publication/whitehall-monitor/whitehall-explained/specialisms-civil-service>.

29 Cabinet Office. 30 March 2015. *The functional model: a model for more efficient and effective government*. Government of the United Kingdom. <https://www.gov.uk/government/publications/functional-model-for-more-efficient-and-effective-government>. Page 4.

30 Civil Service. 2016. *Civil Service Workforce Plan 2016 – 2020: Realising our vision of a Brilliant Civil Service*. Government of the United Kingdom. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/536961/civil\\_service\\_workforce\\_strategy\\_final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/536961/civil_service_workforce_strategy_final.pdf). Pages 12-13.

31 McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Page 6.

32 Office of the Auditor General. 2018. *Data leadership*. Government of New Zealand. <https://www.oag.govt.nz/2018/public-sector-data/leadership>.

33 McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Page 33 and 36.

## Benefits

The experts who were consulted in our research for this case pointed out that the UK government's development of a robust specialisms program was still recent enough that a conclusive evaluation of the reform's impact was not yet possible. Nonetheless, some preliminary findings and observations as to the benefits of the program are possible.

» **The creation of specialisms has already significantly increased the competence of the civil service in certain key areas.**

A good example of this benefit can be found in the role played by the commercial specialism in minimizing the negative fallout of the bankruptcy of Carillion, a multinational facilities management and construction services company that was an important contractor for the British government.<sup>34</sup>

» **The introduction of specialisms has provided government with a more granular, accurate and reliable understanding of the human resources it actually possesses.**

This is enabling the British government to be more effective and efficient in the way it (re)allocates these resources across the whole-of-government. In particular, it has increased the government's ability to "get the right people to the right places" at the right time by horizontally re-deploying professional expertise, an ability that has been critical for the UK government as it prepares for Brexit.<sup>35</sup>

» **The creation of robust professional specialisms has also helped with recruitment of individuals that possess these desirable and in-demand professional skills into the public service.**

This is largely the result of the increased recognition, more focused leadership, clear career pathways and useful professional development that has accompanied the official recognition of professional specialisms.<sup>36</sup>

*The introduction of specialisms has provided government with a more granular, accurate and reliable understanding of the human resources it actually possesses.*

34 Apolitical. 11 November, 2018. "The UK's "govtech minister" is opening government to a new kind of business." *Apolitical*. [https://apolitical.co/solution\\_article/uk-govtech-minister-opening-government-to-a-new-kind-of-business/](https://apolitical.co/solution_article/uk-govtech-minister-opening-government-to-a-new-kind-of-business/). This assessment and example was also independently provided to us by one of our expert interviewees.

35 McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Page 6.

36 McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Page 6.



## Success factors

Many governments already recognize the existence of professional specialisms in some way. What sets the UK apart is the extent to which it has made this recognition meaningful and consequential for the way that the institution is organized and for the people who staff it. Thus, in this section, we identify six key factors critical to professional specialisms making a meaningful impact on horizontal collaboration. These steps, which represent one way of overcoming the challenge of **insufficient resources** that often blocks effective horizontality, include:

- » A strong leadership structure led by a **full-time head of specialism who is based in the centre of government and supported by a dedicated team with stable core funding**. This head should sit on top of a whole-of-government leadership network composed of specialist leaders from all relevant departments.
- » An operating model for how the specialism can add value across government as well as **common standards for the practices and professional skills** that constitute the specialism.
- » A mandate to **nurture specialist talent enabled by comprehensive workforce skills data, a skills assessment framework, a well-defined and appealing career path, and strong professional development offerings** managed by a cross-departmental specialism-specific skills development body.
- » **The ability to recruit talent competitively, quickly and flexibly**, married with the ability to redeploy specialist labour across government to meet evolving needs.
- » **An active community of practice** that enables specialists to share best practices and build cross-departmental communities.
- » Outreach efforts that **raise understanding of the specialism across government**.<sup>37</sup>

*What sets the UK apart is the extent to which it has made this recognition meaningful and consequential for the ways that the institution is organized and for the people who staff it.*

<sup>37</sup> For a fuller exploration of the features identified in these bullets see McCrae, J. and Gold, J. 7 September, 2017. *Professionalising Whitehall*. Pages 20-35.



## ▶ The mission

New Zealand's Data Exchange is a part of a larger government initiative called the social investment approach which is a data-driven, evidence-based “person-centred, integrated approach” that spans the whole-of-government.<sup>38</sup> It is enabled by the setting of clear, measurable outcomes for programs, by using data and technology to understand the needs of individuals and the ways that they are using government services, and systematically measuring the effectiveness of government services in delivering these outcomes.<sup>39</sup>

This approach is driven by the understanding that specific social outcomes have important and interconnected drivers and that well-timed and -designed interventions can make enormous differences in individuals' well-being. Critically, because problems are often multi-faceted, recognizing and designing effective interventions often requires a horizontal approach. Moreover, there has also been a recognition that, by making early – and often much cheaper – targeted interventions in one area of an individual's life, governments can avoid much larger and less effective expenditures on these individuals in other areas later in life.<sup>40</sup>

The Data Exchange initiative emerged from the government's realization that in many areas it lacked the data it needed to properly implement its social investment approach or that the data that it did possess was not being shared effectively. For the social investment approach to be successful, the government and its partners needed to be able to cross-reference multiple datasets spread across and outside of government in order to better understand individuals' needs, evaluate existing programs and assess the likely impact of proposals for new interventions. Thus, while many of the technical details resemble Estonia's X-road, New Zealand's Data Exchange is focused on social research and policy design contrary to Estonia's much more operationally- and user-focused system.

38 Social Investment Agency. 1 August, 2017. *Data Exchange: Fact Sheet*. Government of New Zealand. <https://sia.govt.nz/assets/Documents/SIA-Data-Exchange-4-May-2018.pdf>. Page 1.

39 Social Investment Agency. 1 August, 2017. *About Us*. Government of New Zealand. <https://sia.govt.nz/about-us/>.

40 Miller, G. 17 May, 2016. *The social investment approach to public spending in New Zealand: looking to the long term*. Institute for Government. <https://www.instituteforgovernment.org.uk/blog/social-investment-approach-public-spending-new-zealand-looking-long-term>.

## ? How does it work?

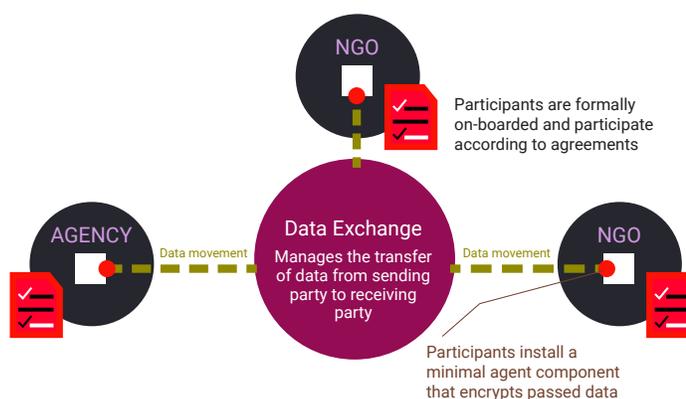
Translating these government needs into an actual tool is the responsibility of the Social Investment Agency (SIA). The SIA has largely focused its work along two dimensions. The first involves enabling better use of existing data and data infrastructure. For instance, to build buy-in for its work, the SIA has run demonstration projects. With its “Social Housing Test Case,” for example, it sought to calculate the overall fiscal return on investment, across government, from additional spending on social housing.<sup>41</sup>

The second dimension of the SIA’s work is enabling wider data-sharing within government through the Data Exchange. This ongoing project is focused on building a cloud-based platform that will enable the “safe and secure sharing of data in near real-time” by automating and simplifying the ways that government departments and other partners can engage in two-way sharing of anonymized and non-anonymized datasets. Simultaneously, the Data Exchange is being designed to enable individuals to determine “what data they share, with whom and when”<sup>42</sup> and to be able to opt out at any time. As of August 2018, four government agencies and seven service providers have been connected to the Data Exchange with plans underway to connect many more in the coming years.<sup>43</sup>

The SIA is also creating the tools that will be needed to enable full use of the Data Exchange’s capabilities and potential. For example, in one project it is testing a set of common data standards – a critical step to overcoming **technological constraints** on effective horizontal collaboration.<sup>44</sup> In another project the SIA is testing a data control and tracking system designed to ensure that only data from individuals who have consented to have it shared will be used in analyses. This project also includes tools to enable individuals to see how and by whom their data has been used.<sup>45</sup> The SIA is also developing a Data Protection and Use Policy which will set out the “principles, guidelines,

FIGURE 5

### Generic example of how the Data Exchange works



Source: Social Investment Agency. 1 August, 2017. *Data Exchange: Fact Sheet*. Government of New Zealand. <https://sia.govt.nz/assets/Documents/SIA-Data-Exchange-4-May-2018.pdf>. Page 4.

41 Social Investment Agency. No date. *The Social Housing Test Case*. Government of New Zealand. <https://sia.govt.nz/our-work/social-housing-test-case-2/>.

42 Social Investment Agency. October 2017. *Briefing on the Social Investment Agency for the Incoming Minister for Social Development*. Government of New Zealand. <https://sia.govt.nz/our-work/briefing-to-the-incoming-minister-bim/>. Page 8.

43 Digital.Govt.NZ. 1 August, 2018. "SIA and the Data Exchange." *Showcase*. Government of New Zealand. <https://www.digital.govt.nz/showcase/sia-and-the-data-exchange/>.

44 Social Investment Agency. October 2017. *Briefing on the Social Investment Agency*. Page 14.

45 Social Investment Agency. October 2017. *Briefing on the Social Investment Agency*. Page 15.

tools and procedures” to govern how individuals’ social data “can be collected, transferred and used safely.”<sup>46</sup> Taken together, this work should go a long way to addressing the **privacy concerns** that can stand in the way of horizontal collaboration.

The SIA is also engaged in projects designed to encourage greater horizontal collaboration by helping to illuminate areas where such collaboration could significantly improve outcomes and enable government to invest its scarce resources more efficiently. For instance, the SIA is working on mapping “areas of overlapping need” where families experience combinations of unemployment, chronic health challenges and housing stress as a means of spurring better alignment of services.<sup>47</sup> The SIA is also working to complete a social sector data map that will reveal areas where data is missing and guide future efforts aimed at filling these gaps.<sup>48</sup> By revealing a clearer picture of those who are in need, and the multi-faceted nature of those needs, the SIA aims to identify where the government should be concentrating its efforts and spur horizontal collaboration in these areas.

## Benefits

The SIA was only established on July 1, 2017. This means that there has been limited time to gather evidence of its key benefits. Nevertheless, the Data Exchange project itself pre-dates the creation of the SIA with the first live transmission of data using the Data Exchange taking place in December 2016. Thus, some preliminary benefits have already become clear.

» **The Data Exchange has enabled the New Zealand Department of Corrections to significantly improve its system for locating housing for inmates upon their release.**

As explained by one of our interviewees, the use of the Data Exchange has transformed a system in which data on available beds was reported manually and, consequently, was up-to-date for only about 25 per cent of the time to one where this data is now gathered with greater automaticity and is accurate 80 per cent of the time. The new system is also enabling new features such as the ability to find beds for inmates in locations closer to their families.

» **The Data Exchange is removing the need for surveys to collect many business and consumer indicators used in the generation of national statistics and economic research.**<sup>49</sup>

This should help to increase the speed of this work and reduce errors.

» **By providing support and resources, and by offering connectivity to government data, the Data Exchange is incentivizing and helping NGOs to improve their data usage and collection capabilities and practices as well as the quality of the data they are creating.**

As one of our interviewees pointed out, this is especially significant for smaller NGOs that lack the internal capacity or resources needed to make these sorts of upgrades on their own initiative.

46 Social Investment Agency. October 2017. *Briefing on the Social Investment Agency*. Page 8.

47 Social Investment Agency. October 2017. *Briefing on the Social Investment Agency*. Page 12.

48 Social Investment Agency. October 2017. *Briefing on the Social Investment Agency*. Page 12.

49 Digital.Govt.NZ. 1 August, 2018. “SIA and the Data Exchange.”

» **Health care insurers are now able to use the Data Exchange to access an improved and more holistic view of health care across the entire country through a single data channel.**

This improved perspective is enabling these providers to build better actuarial models.<sup>50</sup>

» **The use of the Data Exchange has enabled the development of a “single source of truth” for primary health care information.**

This “single source” is enabling improved coordination of after-hours and emergency care for patients in some areas of the country by providing better information sharing between different emergency departments, ambulance services and other health care providers.<sup>51</sup>



## Success factors

» According to our interviewees, **political leadership was a critical driver of the establishment of the Data Exchange.** This leadership actively pushed government bodies towards more data-driven approaches by demanding that their officials provide them with data supporting a recommendation before they would accept it. This need for data to support policy recommendations has created a demand for the sort of analysis that the Data Exchange can facilitate.

» Since the organizations that use the Data Exchange retain ownership of the data being shared,<sup>52</sup> convincing them to participate in the system requires reassuring them that it will continue to enjoy the same level of security and privacy protection. Thus, **the Data Exchange’s high security standards – which generally exceed typical government standards – and robust privacy safeguards have been critical in helping it gain acceptance from partner organizations.**<sup>53</sup>

» **Minimizing technical requirements for users and making it as easy and as quick as possible for users to get connected and begin using the system for productive purposes.**<sup>54</sup>

» A focus on **building a modest tool that can connect other existing tools, not a grand project to replace all the existing tools** being used by its partners. This approach is the cheaper, easier and more nimble one, thus making the project more likely to succeed.

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50 Digital.Govt.NZ. 1 August, 2018. “SIA and the Data Exchange.”

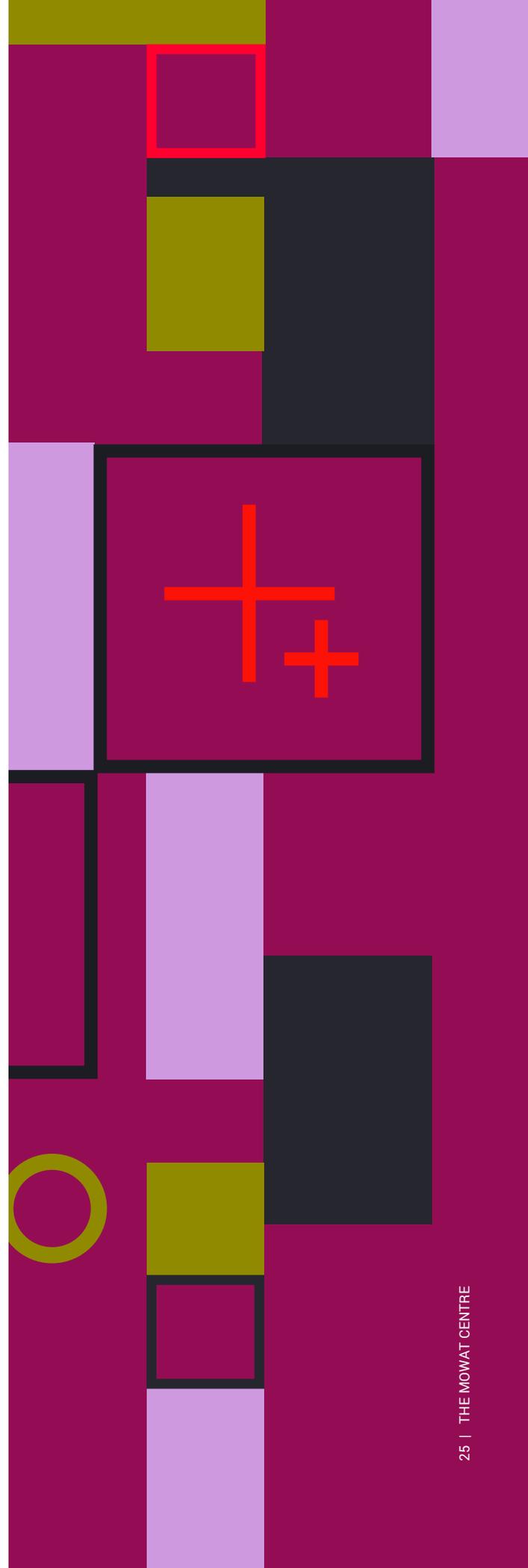
51 Digital.Govt.NZ. 1 August, 2018. “SIA and the Data Exchange.”

52 Social Investment Agency. 2018. *Data Exchange*. Government of New Zealand. <https://sia.govt.nz/our-work/data-exchange/>.

53 Digital.Govt.NZ. 1 August, 2018. “SIA and the Data Exchange.”

54 Digital.Govt.NZ. 1 August, 2018. “SIA and the Data Exchange.”

- » While there have been technical issues to overcome, the greatest challenges have come in the form of cultural resistance and inertia within government. Thus, and as multiple interviewees pointed out, in addition to political leadership, **leadership by high level public servants – especially ones with technical backgrounds who have been able to say “yes, we can do this” and inspire buy-in and confidence in the approach in others –** has been essential to success.
- » **A willingness to be flexible in order to be strategic.** In other words, being willing to incorporate some potential partners’ priorities into the project in order to bring them on board.
- » **The independence that the team building the Data Exchange has enjoyed has been critical.** This independence has enabled them to escape a lot of the normal bureaucratic delay which would have made doing this work slower, more expensive and more difficult.
- » **The fact that funding has been made available from the centre of government to help defray the costs of joining the Data Exchange** has helped eliminate a critical excuse that could otherwise have been used by departments to block the project’s expansion.





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# 4 CONCLUSION

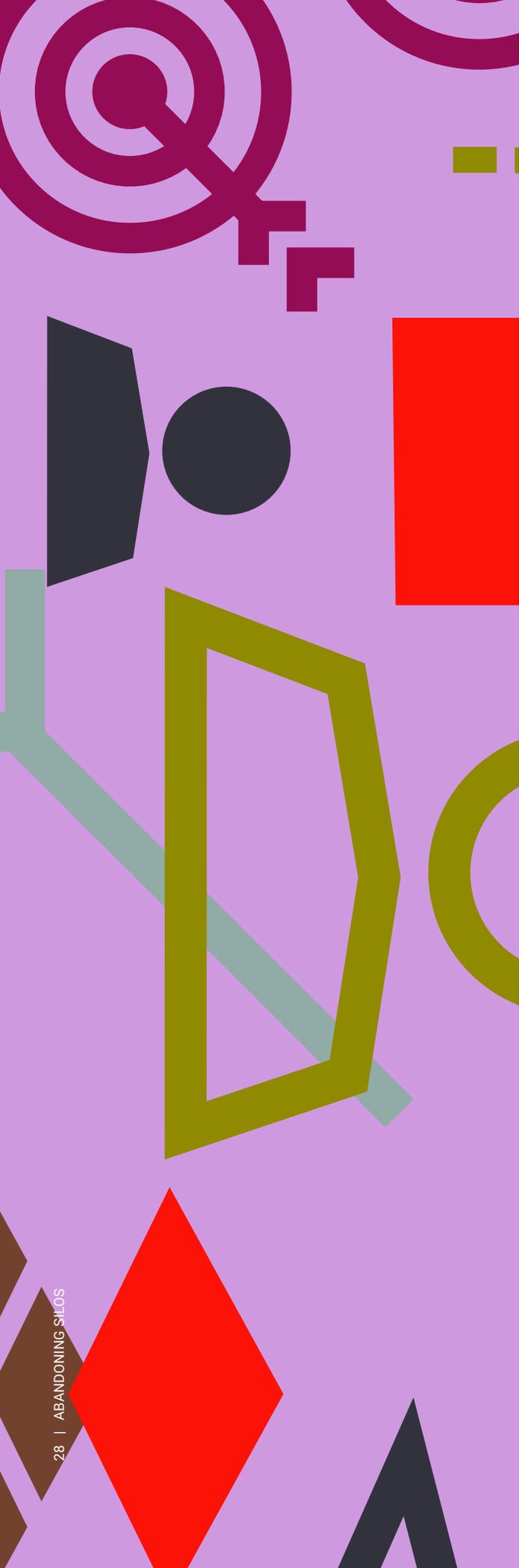
Horizontal problem-solving is difficult. It involves stepping outside normal routines and traditional ways of doing things. It can often involve some discomfort and uncertainty. Moreover, horizontality is not something that should be undertaken just for its own sake. Much of government is structured the way it is for good reason. That said, many public sector organizations were designed in and for the industrial age and are functioning less well now that the digital age has dawned. Unsurprisingly, some change is needed.

Much of this change will be for the better. New technologies and techniques enable governments to do more and better with less. The better results for citizens derived from the increasing focus on the individual and the end-user experience – made possible by digital technologies like the Internet, artificial intelligence and big data analytics – are a good example of this. Indeed, while the need to focus on the end-user experience can often feel like an added obligation, it is also important to recognize just how transformative this focus can be when it comes to outcomes.

Powerful solutions like this are increasingly needed to tackle the growing number of complex problems that governments are facing. Many of the strategies for horizontal problem-solving outlined in this report can catalyze each other. Indeed, there is good reason to believe that any government that mindfully advanced a package of such reforms could enable the emergence of more than a few virtuous circles in which the first step towards enabling greater horizontal collaboration actually makes subsequent steps easier to take.

Each of the case studies examined here offers its own lessons regarding the power of horizontality.

- » The “once only” case shows how a small, focused legal change can spark a re-orientation of departmental priorities in ways that better align them with whole-of-government ones – at least when other critical pieces of foundational infrastructure are also in place.
- » The professional specialisms case shows how professional networks can foster horizontal perspectives that can improve organizations’ decision-making and operations.
- » The Data Exchange case demonstrates how horizontality can better enable the design of a “person-centred, integrated approach” to providing wrap-around care for the most vulnerable members of society through the collaborative construction of more holistic perspectives.



Clearly, the tools and models needed to work horizontally are available. Those organizations that have had the benefit of forward-looking leadership have already begun the process of using these tools to transform their organizations into more horizontal entities. This will make it easier to take the additional steps that they need to take in this direction in order to respond effectively to the critical policy challenges of today and tomorrow. Those organizations that have not moved as far along this path should take heed and ensure that they not get left too far behind.

