The Data Dividend in the Netherlands
A comparative perspective on governments' usage of data to tackle key societal challenges

A WPI Economics Report for Splunk

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About Splunk:

Splunk Inc. is a technology company that provides solutions that analyze massive amounts of data from every digital interaction, connecting dots across organizations' complex environments, surfacing insights and accelerating action. Our platform helps organizations go from visibility to action, fast and at scale to solve a broad range of business challenges. Our unique approach empowers organizations to become more secure and resilient so they can innovate with speed and agility.

About WPI Economics:

WPI Economics is a consultancy that provides economics that people understand, policy consulting and data insight. We work with a range of organisations – from FTSE 100 companies, to SMEs and charities and Central and Local Government – to help them influence and deliver better outcomes through improved public policy design and delivery. Our focus is on important social and economic policy debates, such as net zero, levelling up and poverty, productivity and mental health. We are driven by a desire to make a difference, both through the work we undertake and by taking our responsibilities as a business seriously. We are an accredited Living Wage employer.

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Introduction to the project

This report focuses on the Dutch results from a wider research project on the importance of data analytics in solving some of the most pressing socio-economic challenges that society faces, from reducing education and health inequalities to tackling organised crime and enhancing the natural environment.

Governments face a data divide – the use of data for societal benefit has significantly lagged behind its use for commercial profits. But this also means there is a potential data dividend – the opportunity to close the divide and reap all the benefits of data and emerging technologies which the private sector is already accessing.

We have assessed four key European governments (France, the Netherlands, the UK and Germany) on their use of data, benchmarking their performance to identify best practice, and areas for development. We have also considered the wider context of data use at the heart of government, and what best practice looks like according to the multinational institutions monitoring government data use and innovation, pulling out key insights and policy recommendations.

Based on these principles of best practice, we defined a framework for benchmarking the four target countries in our study and placing them within country typologies. To do so we analysed them against two dimensions of what makes for effective use of data for policymaking:

- How much **strategic emphasis** do governments put on data use within policymaking, with a focus on the extent to which a government is "data-driven" as well as on their level of data innovation.

- Whether governments have the right **data governance** foundations to enable a better use of data from an operational perspective, including the quality of data, security and the level of data integration within government.

This analysis found that governments are increasingly aware of the data divide and aim to embody a data-driven approach, although these ambitions are not always translated into the necessary actions and resource commitments. All the countries in our sample are looking at how to improve data use in their public sector, though some (specifically the UK and France) are much more ambitious in their aims to put data at the very heart of government. The governments in our sample are also taking their first steps towards data innovation, with a focus on artificial intelligence over other emerging technologies.

Most countries have made good progress in the area of data quality, albeit with varying degrees of policy commitments and implementation of open and accessible data. Data sharing on the other hand has seen less success, with ambitious plans often difficult to implement as a result of inconsistencies in the data produced by different departments, and a lack of organisational capabilities and skills.

The following report will consider the Netherlands findings within this context and the implications for the Netherlands' data use for policymaking.

Snapshot on the Netherlands

Data-driven government		Data Innovation		Data Quality		Data Sharing	
National data strategy for policy making	✓	Agenda has an innovation focus	✓	Average in openness of data	–	Middling integration of data	–
Digitalisation and private sector focus	–	Private sector prioritised over public	–	Strong availability of data	✓	Strength in eIDs	✓
No single entity overviewing progress	–	No entity monitoring progress	–	Strong transparency of data	✓	Strong use of authentic sources	✓
Average performance in metrics	–	Positive performance on metrics	✓	Very strong security of data	✓	Sharing prioritised in strategies	✓
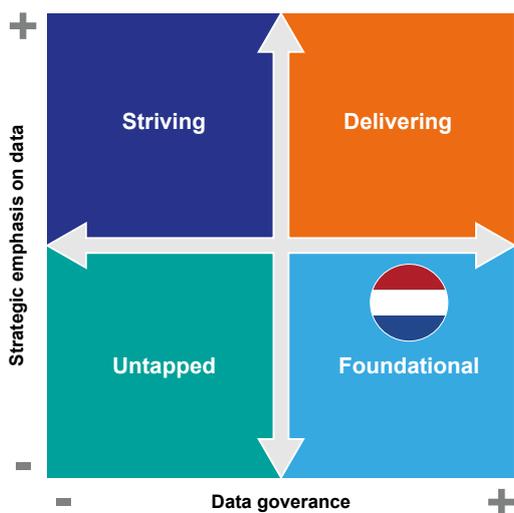
Our analysis of the Netherlands performance in the use of data for policymaking would indicate that it is a **Foundational Country – one that has strong data governance foundations and can use that as a base for building towards a data dividend**.

This is based on strong performance in data governance driven by strong metrics and a dedication to improve. However strategic emphasis on data is not quite strong enough to make it into the delivering category.[1]

Coping with Covid19 – How did the Netherlands leverage data to manage the Covid19 crisis?

The Dutch government deemed it essential to have a single point of information that provided daily insights into the evolution of the pandemic. The dashboard developed over time, with more in-depth indicators and more geographic disaggregation added to it as the target audience changed from policymakers to the general public. Research and communication were also undertaken to enhance public understanding of the dashboard. However, some key indicators could have added to its usefulness for policymaking, for example timely indicators of health system capacity, disaggregation options and enabling interoperability between social, health and economic data.

The Corona Dashboard introduced a new form of daily interaction and communication between the government and the public, enabling a more open, data-driven government but missed an opportunity for in-depth insight.

Results of benchmark analysis

Strategic emphasis on data

We assessed the benchmark countries on how much strategic emphasis they put on data use for policymaking, with a focus on the extent that the government is "data-driven" as well as on their level of data innovation. The Netherlands has strong ambitions to be a data-driven government, and are actively looking at data innovations, albeit leaning mostly on the private sector to do so.

Ambitions to be data-driven

The Netherlands has become increasingly aware of the need for a data strategy, in common with many other countries in our sample. Key developments include:

- In 2018 the Dutch Digitalisation Strategy was announced. This involved an ambitious, cabinet-wide agenda for continued digitisation within the public sector.[2]

- The NL DIGIbeter program was put in place with the aim of accelerating this digitisation.[3]

- In 2019, the Data Agenda Government was published.[4] This came from the NL DIGIbeter program and is the main document for data strategy in the Netherlands. It was updated in 2020. [5]

- In 2021, the Government also issued its I-Strategy 2021-2025, the joint priorities of the Government's Chief Information Officers. [6]

The Data Agenda aims to use data more effectively to improve policy making and resolve social issues. It has a particular focus on the protection of public values and fundamental rights. Whilst its aims are very much in line with the values of a data-driven government, much of the focus is on the delivery of public services rather than incorporating data into the heart of government.[7] However, there are explicit goals which show a desire to improve government data use for policymaking, including:

- To improve the government's data management and promote the re-use of government data

- To connect policy and data science

- To collect and share knowledge about data-driven approaches

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Case study – Economic prosperity

Context: The TNO Policy Lab, Municipality of Rotterdam and Ministry of the Interior joined forces to address challenges around at-risk youth

Action: Various data sources from different organisations are being linked and machine learning applied to identify key factors in socio-emotional development

Benefit: Mining this data has allowed early detection and prevention of psychological problems, reducing criminality and school drop-out rates

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The agenda is the joint responsibility of the Ministry of Economic Affairs and Climate Policy and municipalities.   The Ministry of the Interior and Kingdom Relations plays a coordinating role. The I-Strategy, led by Chief Information Officers across government, has as one of its central themes the smart use of data. The responsibilities for promoting and monitoring the integration of data across departments, the use of data in policymaking and the implementation of the agenda therefore fall to multiple entities.

The Netherlands has put two separate data strategies in place – the Data Agenda Government focuses on government data use, with a separate strategy for the private sector. Throughout both there is an emphasis on how the public and private sector jointly determine and lead data strategy, with a heavy use of public private partnerships to deliver strategy goals. For example, there are partnerships to:

- Help people participate in society (Digital Society Alliance),

- Employ technology to make things better (Blockchain and Dutch AI Coalitions) and,

- Encourage innovation (Innovation Budget, Startup in Residence and Small Business Innovation Research).

This is emblematic of the focus on collaboration with the private sector within the Dutch approach.

Unlike many other countries, the Netherlands has not appointed a National Chief Data Officer (CDO), and is hesitant to make creating the position compulsory across the public sector.[8] They have chosen to strengthen the Chief Information Officer (CIO) at the central level of government instead, leading to the I-Strategy 2021-2025, which focuses both on digitalisation and on how data use can be improved. This strategy does also highlight the importance of the CDO role, as the "right-hand man" of the CIO, and calls for more to join this position.

The Netherlands performs well in two out of three of the quantitative metrics we considered:

- Offering data literacy programs for its personnel (OECD OURdata Index) – significantly improved and one of the top scores, close to the top performer, France[9]

- Promotion of data reuse in government (OECD OURdata Index) – below OECD average and second last ahead of Germany

- Data-driven public sector (OECD Digital Government Index) – in line with OECD average

Leaning on private sector for data innovation in policymaking

The Data Agenda Government strategy aims to use smart applications of data and new technology to improve the quality of people's lives. The I-Strategy also specifically considers how AI can be used to gain new insights and innovate in policymaking. The Netherlands is actively engaging at the government level with artificial intelligence, blockchain and IoT technology. Government interests in these technologies are frequently formalised in public private partnerships, such as the Blockchain Coalition.

Case study – Health and wellbeing

Context: Healthcare data is fragmented, and learnings are often lost across different organisations. This became particularly challenging during the Covid 19 pandemic

Action: Health-R aims to bring together national health-data infrastructure. More than 70 organisations are participating in the sharing and optimising of data resources

Benefit: Facilitation and fostering of the optimal use of knowledge, tools, facilities, health data and samples to enable a learning healthcare system

The AiNed National Growth Fund Investment Program 2021-2027 was drawn up by the Netherlands AI Coalition.[10] A public-private partnership, it aims to strengthen the position of the Netherlands in the AI sector and make the most of the opportunities available within AI. Whilst much of this program is focused on private sector endeavours, investment is also available for government projects.

This public private partnership approach is said to help avoid the fragmentation, pillarisation and poor efficiency often found in traditional working methods, which do not fit well with AI's rapid development and changing requirements. It is highlighted that the development of innovative AI applications in government is too slow and will be accelerated. [11]

There is some reticence about the use of algorithms in the Netherlands after a scandal involving many thousands of families being wrongly identified as fraudulent over child benefits. This has resulted in a very strong emphasis on the ethics of AI use. The government is actively intervening to prevent unwanted biases in AI algorithms, and placing emphasis on fair, transparent and trustworthy AI systems.

The AiNed program is already focusing on the potential applications of AI, and the barriers and challenges to its integration, but they have not yet set up a monitoring system. However it is early days, and yearly reports may be forthcoming from the end of this year. The Blockchain coalition acts similarly for the use of blockchain. However neither of these focus specifically on government use of these technologies, so there is a gap in oversight for implementation.

The TNO Policy Lab is an independent research institution that collaborates closely with the Dutch government to explore strategies and research the impact of the digitisation of society on policy.[12] Multidisciplinary experts cooperate and use new technologies to produce policy, set up policy models and methodologies for producing policy. They aim to develop innovative methods, monitor developments and clarify their relevance for policymakers to subsequently prototype and assist with rapid implementation. However, this sits outside the heart of government, following the pattern of public private partnerships rather than government led initiatives across the data agenda.

The Netherlands performs well in the variables we considered to assess innovation within government:

- 5th in Oxford Insight's Government AI Readiness Index and 2nd in our benchmark[13]

- From the OECD OURdata Index, they are 2nd in our country set behind France in the "engagement with the private sector about data release" and in "data promotion initiatives" but last in the area of stakeholder engagement for data quality and completeness[14]

Data governance

The second element of our analysis focuses on whether the governments had the right data governance foundations to enable a better use of data from an operational perspective. We looked at the quality of data, including its security, as well as the level of data integration within the government.

Working to improve data quality

Given there is little measurement of government data use in policymaking, we have used some metrics which apply to overall government data, citizen data and government website security as proxies.

- **Openness** – in both variables considered (content of the open by default policy and implementation of the open by default policy in the OECD OURdata Index) the Netherlands is second to last in our benchmark.[15] Though still in line with the OECD average, there is some work still to be done to improve openness of government data.

- **Availability** – by contrast, the Netherlands performed strongly in the availability of data, as per the variables "content of the unrestricted access to data policy" and "implementation of the unrestricted access to data policy" of the OECD OURdata Index.

- **Transparency** – a very strong performance within our benchmark, scoring highest of all our countries in the "transparency of personal data" variable of the EC eGovernment benchmark[16]

- **Security** – The Netherlands by far outperformed the other countries in our sample, passing 70% of security tests performed on government websites in the EC eGovernment benchmark.

Overall, the Netherlands performs quite strongly in data quality. Even where there are weaknesses, such as openness, there are measures in place within the Data Agenda to improve.[17] One of the aims of the agenda is to improve the quality of government data and use it more efficiently (this is also an aim in the I-Strategy). It highlights how the government has been making more open data available, and the next steps will be improving the quality, usability and findability of the data. This is driven in part by the European directive for better re-use of government data, which the Netherlands is implementing.

Outside of the strategic aims, there are also concrete actions ongoing to improve data quality – the Ministry of the Interior and Kingdom Relations is proactively improving the quality and use of citizens' data. The Association of Netherlands Municipalities is also working to allow conversion of data from municipalities into nationwide data sets. There is also work ongoing to improve the quality, traceability, findability and usability of the national open data register as part of the Data Agenda.

Strength in data sharing

Similarly to data quality, there are no direct measures of government data sharing for policymaking, however there are some useful proxies which we have used to consider the Netherlands performance in this arena. These include metrics designed to capture:

- How integrated government data use is (digital by design, government as a platform from the OECD Digital Government Index)[18]

- How extensively eIDs are used for citizen's data (EC eGovernment benchmark for eIDs)[19]

- The extent to which personal data is pre-filled by online services (Authentic sources from the EC eGovernment benchmark)

The Netherlands scores quite strongly across these metrics. For **data integration**, they had the highest score in the "digital by design" variable, above the OECD average, and performed in line with Germany and France in the "government as a platform" variable, though all below the OECD average. In terms of **citizens data** they were by far the top performer, and above the EU average in the "use of eIDs" and the "authentic sources" variables.

Case study – Environmental

Context: Municipalities have a key role to play in transitioning to a low-carbon electricity system in the Netherlands, needing better data to inform their energy policies

Action: The VIVET data platform will aggregate existing datasets from different organisations and addresses data gaps through new sensor technologies

Benefit: The new platform will enable the design and monitoring of energy policies that can implement the energy transition

Even with this strong performance, they have still identified room for improvement within the Data Agenda. In addition to the target to improve the quality and use of open data there is also an aim to collect and share knowledge about a data-driven approach. They highlight this as a way to share the best practice discovered in some parts of the government with those less equipped to grasp the opportunities of a data-driven approach.[20]

Within the Data Agenda, potential blockers for data integration are highlighted, including the differing ways in which data is collected and used. Some areas of government are making extensive use of sensors, others are primarily collecting data from administrations and surveys. This has led to some areas of the public sector reinventing the wheel, as they are not seeing how other organisations within government are using data to solve similar problems. They hope to develop not just a library of good examples, but a living network of data and best practice sharing.

Conclusion and recommendations
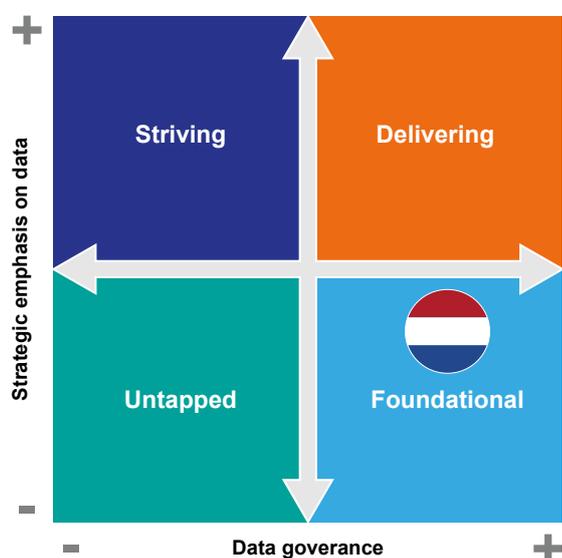
Our analysis of the Netherlands performance in the use of data for policymaking would indicate that it is a **Foundational Country – one that has strong data governance foundations and can use that as a base for building towards a data dividend**.

The Netherlands is one of the top performers in the **data governance** dimension. With strong performance in all the metrics apart from openness, and measures in place to continue to improve these elements, they have a solid foundation to build upon.

There is plenty of evidence that the Netherlands has the ambition to be a data-driven government, with a national strategy in place and a variety of organisations dedicated to innovation. However, there is a lot of fragmentation in the approach, and a focus on the private sector. Data innovation for policymaking is also largely driven through public private partnerships, and there is no facility to coordinate and direct the national government's activities in this area. Due to this fragmentation and private sector focus, the Netherlands doesn't quite have enough **strategic emphasis on data** to make it into the delivering country category.

Based on our assessment we suggest that the Dutch government would benefit from a stronger emphasis on central coordination of data strategy and innovation. Efforts to coordinate and guide innovation in data use within government would boost the existing willingness to share best practice and knowledge. More specifically, the findings of our benchmark assessment led us to the following recommendations for the Netherlands to improve its use of data in policymaking:

- **Launch a "Data innovation for policy making challenge"**. In mission-oriented innovation policies the central government identifies challenges that need cooperation from different sectors and organises competitions for innovators. The Netherlands government could launch a challenge calling for solutions to key issues the government is facing, such as the cost of energy crisis, climate change, health and wellbeing etc. based on innovative use of data, providing funding for the best proposals. In addition to the direct benefit from the selected innovations, this initiative would also emphasise the importance of data innovation in policy making and build capabilities within and collaboration links across departments.

- **Set up a coordinating body for data innovation** with the responsibility to monitor, encourage and share best practice in the use of data for policy making. Whilst the Netherlands has chosen not to have a national Chief Data Officer function, this body could provide some of the benefits of that function. There is some excellent innovation happening in Dutch government bodies such as the Rijkswaterstaat Datalab. Tracking and sharing those actions could help the Netherlands take the next steps to closing their data divide.

- **Continue to focus on the openness of data**. This is the only area of data governance which needed some work according to our quantitative analysis. However, this is already a significant focus of the Data Agenda Government, and we expect to see the metrics improving accordingly. A slight tweak in emphasis towards the sharing of public sector data, to complement the current emphasis on the private sector would allow the government to build further on their existing strong data governance foundations.

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