Australian Government

The Treasury

Enterprise
Data Strategy
2023–2025

Contents

Foreword

Treasury is reliant on high quality data every day. Under our corporate vision, we are responsible for *providing advice to the Government in implementing policies and programs to achieve strong and sustainable economic and fiscal outcomes for Australians*. This goal can only be achieved through drawing on a robust evidence base, built on high quality data that is trusted and fit-for-purpose.

Data is an integral aspect of our culture. Across the department, we already see many examples of staff drawing on data to inform our advice, and make it more influential and timely. But we can do better. We can manage data in ways that better maximise opportunities for learning from it, by sharing and reusing our data in a safe and secure way. We can build data literacy across the department to ensure everyone can access and use the data they need to do their jobs. And we can keep building and improving our analytical products and tools to ensure they deliver quality, timely advice for our ministers.

Treasury's *Enterprise Data Strategy 2023–2025* sets out an ambitious but achievable agenda for the next two years. It builds the foundations we need to both maximise our existing skills and build new ones. It sets out an action plan to move towards a consistent approach to managing our data assets, while prioritising the most important short-term gains we can and must make. However, this strategy is just a starting point for us. In the longer-term, we will position ourselves to model best practice data use across the APS.

I encourage all of you to familiarise yourself with this document and take the opportunity to contribute to its goals by embracing data in the work you do. This could be as simple as joining a community of practice, signing up for a new training course, or asking 'what does the data tell us?' when you see gaps.

We are all data users, and a strong evidence base, informed by data, will enable us to provide the Government with the best possible advice for improving economic and fiscal outcomes for all Australians.

Dr Steven Kennedy PSM
Secretary
December 2023

Strategy at a glance

Treasury's purpose: *we provide advice to the Government and implement policies and programs to achieve strong and sustainable economic and fiscal outcomes for Australians.*

Why we need a Data Strategy

- Data is a critical strategic asset for Treasury
- We need a road map to build our foundations for best practice data use
- We need more consistent data practices to ensure we continue to use data safely, securely and effectively.

Our current state

- We have a high baseline of data expertise
- However, we need more consistent and efficient processes in place to improve data access and discoverability
- We need to raise the general data literacy of the agency.

Key priorities and actions for 2023–2025

1. Data governance and leadership

- Establish key formal documentation for Treasury staff, including a data inventory and centralised data governance policies.

2. Data capability

- Establish mechanisms to share and promote best practice data use, including a Treasury data hub and data user guide
- Undertake a detailed stocktake of data training needs, and develop a plan to fill any gaps.

3. Data analytics and visualisation

- Undertake a stocktake of existing data visualisation products
- Develop operating principles for a code-sharing repository.

4. Data access and acquisition

- Determine potential efficiencies for data acquisition via a comprehensive stocktake of current practices
- Develop operating principles for a centralised data repository.

A message from the Chief Data Officer

Why do we need a Data Strategy?

Our data is a critical strategic asset. This Enterprise Data Strategy (EDS) provides Treasury with a clear mandate and opportunity to treat data as a standalone strategic asset. It draws on many of the fundamental goals of our Enterprise Information Strategy, with a specific focus on data initiatives. It has been carefully designed to align with key corporate priorities set out in Treasury's Corporate Plan, Enterprise Information Strategy and Workforce Plan, as well as our forthcoming Digital and Cyber Security Strategy.

We need an agency-wide roadmap. Treasury needs to embrace the fast-changing data environment across the APS and the wider community. Data strategies now sit firmly alongside corporate plans as a key planning tool in the APS. There are many potential paths to best practice data use in Treasury, but they all start with a strategy to build on our initial foundations with a set of priority actions. The EDS was developed in consultation with staff across Treasury, and considers data needs and expectations across policy, data, regulatory and corporate functions.

We need to remain relevant and consistent with the rest of government. Data is at the forefront of many cross-government issues, and the EDS will help our department remain connected and relevant to these wider conversations and initiatives, including:

- embracing safe and responsible data sharing opportunities under the *Data Availability and Transparency Act 2022*
- aligning our work with the core goals of the APS Data and Digital Strategy
- continued involvement with key cross-APS priorities, including the APS Data Professionals Stream and senior working groups.

Successful delivery of this first EDS will benefit everyone at Treasury. It will better equip us with the data, the tools and the skills to provide timely, informed and influential advice for the Government and the Australian people.

Nathan Deutscher
Chief Data Officer

December 2023

Data use at Treasury

What do we mean by 'data'?

- Data comes in many types and formats, ranging from a single number or a single response to a survey question, to large datasets of billions of such numbers or responses.

- The Australian Bureau of Statistics (ABS) defines data as measurements or observations that are collected as a source of information. Data is a subset of information, but not all information has the intentional structure and collection that is inherent to data and lends itself to systematic analysis.

What does data look like at Treasury?

- The most effective way to identify what 'data' is in a Treasury context is by considering examples of the information we hold, how it is structured and how we use it.

- It is also important to distinguish between the different types and sources of data we use so that we can manage them appropriately. For example:

  – data can be **quantitative** (expressed as a value—such as a percentage in a spreadsheet) or **qualitative** (expressed as a category—such as a free text response to a survey question)

  – data can also be collected in a variety of ways. Government data is commonly categorised as either **administrative** (data collected for the purposes of delivering a program or service) or **survey** (data collected with the specific goal of answering one or more research questions). Data can also increasingly be collected from less structured information, such as text analysis of written documents.

- A major foundational action under this first EDS will be to better understand and document the many sources of data Treasury holds and uses. Some common sources include:

  – publicly-available data from external sources (e.g. regular ABS economic releases)

  – data sourced externally, used for models, forecasts, projections and analytical insights

  – internal program data used to track and report outcomes of specific initiatives (e.g. the review of the foreign investment regulatory framework and payment times reporting schemes)

  – data collated from consultations to gain important information about key Treasury stakeholders (e.g. surveys conducted about small businesses across Australia)

  – corporate data used to manage internal finance, legislative and human resources functions.

Context for our first Enterprise Data Strategy

- Across Australia and internationally, the volume, breadth, and depth of data is increasing. The proliferation of data has expanded opportunities to have data inform our advice, while often increasing the complexity of doing so as data and tools expand in number and sophistication.

- The Australian Government has embraced the need for a strategic data agenda and is taking a range of practical measures to ensure the APS gets the most out of our data assets. This includes development of the Data and Digital Government Strategy, as well as the implementation of the *Data Availability and Transparency Act 2022* to promote wider data sharing.

Development of this strategy

Consultation process

- Treasury-wide consultation has informed the development of this strategy. This included:
  - a dedicated Executive level working group with representatives from all 6 Treasury groups
  - an all-staff survey seeking views on a range of data capability and use issues
  - input on various drafts from related working groups, including Senior Executives.

Key findings from consultation

- As was expected in the development of a foundational EDS, there were many and varied themes arising from consultation.
  - **Major strengths** included a high baseline of existing data skills (62% of Treasury staff assessed themselves as 'very' or 'extremely' confident in using data), as well as a strong culture around the importance of data (72% responded that data was 'very' or 'extremely' important in their role).
  - There were many **opportunities for improvement** identified, including high levels of demand for both informal and formal training; improved guidance on data use and sharing; and access to advice on data quality and consistent analytic tools and techniques. However, the standout theme from our consultation process was a need for improved data discoverability and access (38% reported this as their number one priority from a list of 6 possible themes). In other words, many Treasury staff simply don't currently know where to go to find the most relevant data they need to do their job.
  - Data access issues, lack of skills in the Branch, and lack of time were reported as the three major barriers to more effective data use (each by over 45% of survey respondents).

Agreed priorities for 2023–2025

- Given the relatively short timeframe to deliver this first EDS, Treasury has prioritised the long potential list of initiatives to ensure we can effectively implement an ambitious but achievable set of foundational goals.
- This first EDS will be followed by a set of longer-term initiatives, building on the first 2 years of action. While this will be subject to further consultation and inevitable changes in our strategic environment, we envisage our longer-term goals to include more comprehensive and detailed delivery of the key themes below.
- Our priorities for this first EDS are positioned under 4 key themes:

  1. **Data governance and leadership – building foundations for best practice data use**

  2. **Data capability – a data literate workforce**

  3. **Data analytics and visualisation – fit-for-purpose tools and processes**

  4. **Data access and acquisition – the right data to meet our needs.**

1. Data governance and leadership

Building foundations for best practice data use

Why is this important?

- Data governance is the exercise of authority and control over the management of data assets. Put simply, it enables us to plan, monitor and control how data is used at the agency level.

- Establishing clear enterprise-wide data governance practices will enable Treasury staff to better understand what data assets we hold, what they are used for, and how to access them. It will also help us better manage our risk around data use by formalising how we acquire, use and share data. This includes ensuring everyone knows what their relevant responsibilities are.

- Senior Executive leaders in Treasury are crucial to the success of this first EDS. Their support for and modelling of best practice data use will ensure Treasury establishes a culture of valuing data as a key asset in everything we do.

What does it currently look like?

- Treasury meets its core obligations in relation to responsible use of data. There is a good understanding of how to manage sensitive data, particularly where legal restrictions exist. We have key partnerships with other APS agencies in relation to data we access, use and share. We meet our due diligence — including legal obligations — when acquiring data from other agencies.

- However, governance of data at the enterprise level is inconsistent. In particular, the way data is acquired, stored (and in what format) and how it is accessed, varies dramatically across Treasury. There is room for a much more efficient approach to data use to reduce duplication of effort and implement better version control of data assets, including data models (for example, joined-up data sets used for budgeting and general economic forecasting). An enterprise-level approach will also ensure all Treasury staff have access to formal policies on data governance, ensure that they understand the risks, and know how to manage them appropriately. Much of this stems from a lack of understanding at agency level about the specific data we hold, where it originated from, and its quality. SES leaders value the evidence-based advice data can provide, although they would like to be able to access it in a more consistent, timely and direct manner.

- When using data, many Treasury staff, including SES leaders, are not aware of the wide range of data available across divisions to help them do their jobs. There is also a lack of general awareness around data use—most staff do not know where to go to get assistance with using data, and there is room for improvement on familiarity with various data governance issues, including managing potential data breaches. Treasury's recent accreditation as a Data User under the *Data Availability and Transparency Act 2022* means that staff also need to be able to access advice on what data can be shared, with whom, and in what format.

What will we do about it?

Action 1.1   Establish a data inventory—a central listing of Treasury's core data assets. This will include key information about how data is used and stored (but not the data itself).

Action 1.2   Establish central data governance policies, including responsibility for data use and data security, including sharing. This would take into account new and emerging roles as required.

Beyond 2025   Expand coverage to all Treasury data assets; produce data quality guidelines.

2. Data capability

A data literate workforce

Why is this important?

- A data literate workforce is a foundational step in using data more effectively. Treasury's ambition is for all our staff to possess data literacy relevant to their role. This means that all staff are aware of what data is available, how to access and analyse it, and how to critically interpret it.

- Not all Treasury staff need to have highly-developed skills with data, but all staff should at least be confident that they can use data when required in their role. This includes proactively identifying when new/different evidence would support a particular ministerial or departmental objective.

What does it currently look like?

- Data literacy, including confidence in using data, is mixed across Treasury. There are many areas that capably use data on a daily basis and consider themselves to have all the required skills. Ongoing recruitment, retention and further development of these specialised skills is a theme that arose during consultation, noting that it can be challenging to retain corporate knowledge.

- On the other hand, many areas would like to be more self-sufficient in directly accessing and analysing data, including creating data visualisations. Ideally all Treasury staff should have access to the same set of best tools, platforms and models to undertake their data work in a consistent manner. Apart from the risk of duplicating effort, these limitations also hamper the ability of Treasury staff to readily transfer their data skills when moving between teams.

- In our baseline survey, 31% of Treasury staff did not agree that their branch had the skills required to analyse and use data effectively. A similar proportion (29%) reported not knowing where to go within Treasury to get assistance with data-related issues. This indicates that there are large minorities across the department lacking fundamental skills and support for building data literacy. As above, there is also a need for all Treasury staff to clearly understand their data obligations.

- There is a clear demand for better access to information and resources about best practice data use. This includes availability of centralised, inclusive training, support and advice, with mechanisms to share best practice and ask questions. Treasury staff expressed the need for tailored support, advice and training to better emphasise the practical relevance of data to their needs. This should be coupled with a supportive leadership culture, allowing time for staff to engage with relevant development activities, including on-the-job application of new capabilities.

What will we do about it?

Action 2.1	Establish mechanisms to share and promote best practice data use, analysis and visualisation, including leveraging communities of practice and establishing a Treasury data user guide.
Action 2.2	Improve Treasury's data training offer via a stocktake of current training, gap analysis, and implementation of new formal training as required. Include focus on promotion of training for SES leaders (APS Academy course on data leadership), data managers, and Treasury graduates.
Action 2.3	Establish a Treasury data hub to provide central access to key information and resources about data use in Treasury.
Beyond 2025	Assess, improve and expand formal and informal data training offers across Treasury.

3. Data analytics and visualisation

Fit-for-purpose tools and processes

Why is this important?

- The department's ability to provide informed, influential analysis relies not just on our data capabilities, but also on having the appropriate systems available to analyse and visualise data effectively. We also need the right systems in place to ensure those tools can be accessed in a consistent and efficient way.

- Equally important is ensuring analysts have the proficiency to use those tools. This reduces over-reliance on legacy models or systems, key person risk, and additional investment required to maintain the status quo of analytical tools.

What does it currently look like?

- Treasury has access to a wide range of analytical and visualisation tools. In the majority of cases, our tools are fit-for-purpose and are seen by Treasury staff as getting the job done.

- In recent years, there has been some consolidation of the number and types of products we use. For example, programming in R and reporting using Power BI are now in wide use across the department. Key corporate tools (including Delphi and Aurion) have built-in dashboards which are widely used. However, there remains the need for a range of other products such as EViews, Excel, Stata, SAS and Matlab, to enable the maintenance of existing products. It is also important to maintain tools to enable simple and efficient sharing of data with other agencies.

- There remain a number of challenges that are holding us back from best practice. These include:

  - lack of resources within divisions to develop and maintain visualisation tools, including time for staff to learn how to use them

  - reliance on a key person with skills and experience in using a particular tool or reporting product. In some cases, this extends to maintaining legacy software with a shrinking user base

  - challenges in using particular tools in a consistent way. For example, a number of staff have reported challenges in using some R packages within Treasury systems, limiting their ability to run and share code with internal and external colleagues

  - duplication of effort, including the need for staff to learn how to maintain a product when a key person leaves their division. In a number of cases, staff have also reported knowing that a better way to undertake their analytical work exists, but not knowing where to start.

What will we do about it?

Action 3.1 Undertake a stocktake of existing analytical and visualisation products across Treasury and identify opportunities for efficiencies in deployment, use and interoperability.

Action 3.2 Develop operating principles to ensure central support exists for developing, editing and sharing code across the department, with a view to developing a central code repository providing versioning and controls (as set out in the department's Data Systems Roadmap).

Beyond 2025 Build on stocktake of products to move towards best practice in all analytics and visualisation work across Treasury; develop a plan to implement central code repository.

🔒 4. Data access and acquisition

The right data to meet our needs

Why is this important?

- Acquiring the right data for the department's needs has become an increasingly complex challenge as both the volume and sensitivity of data increases. The amount of data available to Treasury continues to increase, providing a growing volume of tools to answer emerging policy challenges with reliable data-driven advice.

- This environment brings with it a new set of challenges for our analysts — with greater volume comes more complexity, and it can take much more time and resources just to work out what data already exists on a particular topic. Assessing data quality also increases in complexity — including the relative advantages or limitations of various sources — as well as understanding our obligations in how we access and analyse specific data assets.

What does it currently look like?

- Treasury currently acquires a substantial volume of data on myriad topics across our policy remit. As per our general data governance practices, we are meeting our core obligations in relation to acquiring data in a safe and secure manner. Sensitive data assets, including those protected by legislation, are accessed and shared appropriately. Our most sensitive data assets have data sharing agreements in place which have been approved by appropriately senior staff.

- However, the majority of practices in accessing and acquiring data are largely carried out in an informal manner, without reference to any written policy. Most areas rely on historical corporate roles, with Directors of units generally responsible for the day-to-day protection of data assets, including decisions on data sharing. While these practices have been effective to date, there is an inherent and escalating risk of data misuse (including the risk of a data breach, such as inappropriate use of sensitive information) as the volume and complexity of our data holdings increases.

- Consultation in development of this strategy also revealed some potential efficiency gains. It is likely that multiple areas of Treasury are currently duplicating their efforts in accessing, storing and analysing the same (or very similar) data sources. Therefore, in a similar vein to our general data governance practices, there is also a strong case for greater centralisation and consolidation of the way we access and acquire data.

What will we do about it?

Action 4.1   Undertake a stocktake of data assets acquired from outside Treasury, including information on which divisions access them, and their cost (where applicable). It will also examine current major gaps in types of data required.

Action 4.2   Develop operating principles for the establishment of a central data repository, providing versioning and controls (as set out in the department's Data Systems Roadmap).

Beyond 2025   Implement efficiency/cost-saving measures from stocktake; assess and develop a plan to fill major gaps in data sources; develop a plan to implement central data repository.

Roadmap to success

Data governance and leadership	Responsibility
1.1 Establish a data inventory—a central listing of Treasury's core data assets.	Data Strategy and Governance Unit (DSGU) to lead, with input from data users across Treasury

Jan 2024 — Sept 2025

1.2 Establish central data governance policies, including responsibility for data use and data security, including sharing.	DSGU to lead

Jan — Nov 2024

Data capability	Responsibility
2.1 Establish mechanisms to share and promote best practice data use, analysis and visualisation, including leveraging communities of practice and establishing a Treasury data user guide.	DSGU to lead, with support from existing communities of practice

Jan 2024 — Dec 2025

2.2 Improve Treasury's data training offer via a stocktake of current training, gap analysis, and implementation of new formal training as required.	DSGU to lead, with support from Treasury Learning and Development

Jan 2024 — Dec 2025

2.3 Establish a Treasury data hub to provide central access to key information and resources about data use in Treasury.	DSGU to lead

Jul — Dec 2025

Data analytics and visualisation	Responsibility
3.1 Undertake a stocktake of existing analytical and visualisation products across Treasury and identify opportunities for efficiencies in deployment, use and interoperability.	DSGU to lead

Dec 2024 — Apr 2025

3.2. Develop operating principles to ensure central support exists for developing, editing and sharing code across the department, with a view to developing a central code repository providing versioning and controls (as set out in the department's Data Sytems Roadmap).	DSGU and Information Services Branch (ISB) to co-lead

Jan — Dec 2025

Data access and acquisition	Responsibility
4.1 Undertake a stocktake of data assets acquired from outside Treasury, including information on which divisions access them, and their cost (where applicable).	DSGU to lead

Aug 2024 — Feb 2025

4.2 Develop operating principles for the establishment of a central data repository, providing versioning and controls (as set out in the department's Data Sytems Roadmap).	DSGU and ISB to co-lead

Jan — Dec 2025

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

2024 | **2025**

Measuring our success

Data governance and leadership	Source	Current baseline	Target by end of 2025
Percentage of staff who know where to go to get assistance within Treasury for data-related issues	All staff survey	55% (2023)	70%
Percentage of data assets captured and up to date in data inventory	Data inventory, pulse survey to Analysis and Modelling Working Group members	N/A	75% of in scope assets
Data capability			
Treasury-wide data literacy: percentage of staff who are 'very' or 'completely' comfortable using data in their role	All staff survey	62% (2023)	75%
Treasury-wide support for data: percentage of staff who consider data to be 'very' or 'extremely' important in their role	All staff survey	73% (2023)	80%
Engagement in skill development: percentage of staff who have undertaken one or more development activities (relating to data) in the last 12 months	All staff survey	80% (2023)	90%
Formal data training activities: percentage of staff who have undertaken one or more formal training activities (relating to data) in the last 12 months	All staff survey	39% (2023)	50%
Data analytics and visualisation			
Access to tools and resources needed to perform well	APS Census	68% (2023)	75%
Agreed operating principles for code sharing	Intranet/ Data Hub	N/A	Completion by end 2025
Data access and acquisition			
Number of data assets identified where duplication and/or costs reduced relative to baseline	Data inventory	0	5
Agreed operating principles for data repository	Intranet/ Data Hub	N/A	Completion by end 2025