



[Home](#) › [About](#) › [Our organisation](#) › [The Australian Statistician](#) › [Speeches](#)  
› APS Graduate Data Network | 2022 Data Forum: Delving into Data

# APS Graduate Data Network | 2022 Data Forum: Delving into Data

Dr David Gruen AO

Australian Statistician

Tuesday 15 March 2022

APS Graduate Data Network | 2022 Data Forum: Delving into Data

## Introduction

Thank you to the Graduate Data Network for inviting me to speak at the Annual Data Forum this afternoon.

I would like to begin by acknowledging the Ngunnawal people, the Traditional Custodians of the land upon which we're meeting today. I would also like to pay my respects to their Elders past and present and extend that respect to members of the Aboriginal and Torres Strait Islander community watching this presentation today.

As the Australian Statistician and Head of the APS Data Profession, I'm here today to talk to you about lifting data capability across the APS and making better use of data. I'll give you an overview of the APS Data Profession; provide some examples of innovative APS data projects; and talk a bit about what this all might mean for you as graduates at the start of your APS career. I'm happy to take questions at the end.

## History and Context

In preparing this address, I reflected on my own career. I joined the public service 33 years ago, not as a graduate, but following an earlier career as a research scientist. Since then, I've undertaken many different roles spanning research, analysis, and policy development, including in the Reserve Bank of Australia, the Australian Treasury, the Department of the Prime Minister and Cabinet and now as the agency head of the Australian Bureau of Statistics.

All these roles involved data in some way – using it myself, managing staff who use it, or more recently leading projects aimed at making better use of public sector data. These included developing the Government response to the Productivity Commission inquiry into Data Availability and Use, which culminated in the Data Availability and Transparency Bill and the Data

Integration Partnership for Australia, a \$130 million initiative to build data infrastructure and capability across the APS. I know you've heard about the DATA Scheme (the second 'A' is for 'Act') from Gayle earlier today.

It's interesting to reflect on what accessing and using data was like for me and my peers in my earlier roles, compared with today. Here's a few examples from the not-too-distant past:

- ABS statistical releases were printed publications that were delivered to journalists and MPs at Parliament House; departments and agencies; and were available from ABS offices and public libraries.
- You could call a telephone number - a landline, not a mobile - to hear someone reading out the CPI or the unemployment rate.
- Good quality data was available, but it took a long time to process. It was not particularly timely, readily available, or cheap.
- Statistics and data were not available on websites or via Application Programming Interfaces (APIs). There weren't any.
- It was not integrated, machine readable, or stored in the cloud.
- Processing large volumes of data took hours, even days.
- We did not have a Data Profession, Data Champions, or a Grad Data Network!

We could not say we were swimming in data, like we are now.

Since the early 2000s, there has been rapid growth and diversification of the data ecosystem with the digital revolution creating a data deluge in its wake. People use digital platforms every day, generating huge volumes of data. Digital technology has changed the way we work, shop, travel, access services such as health care, and even the way we socialise. Last week the ABS and the Reserve Bank of Australia held a joint conference on the implications of the digital economy, highlighting just how profound these changes have been. I recommend you take a look at the conference papers, which are available on the [ABS website \(/about/economic-implications-digital-economy\)](#).

The increase in the types and amount of data from both public and private sector sources has led to changing demands for information from consumers. Being able to use data for policy development and efficient service delivery is critical to the operation of the public service. Data has also become a key focus of the Government's agenda. The Government has committed to ensuring the APS has the right capability, tools, and processes to securely use, share, and understand data and other sources of information for better policy advice, regulation, and services.

In this context, it's essential that we lift data capability across the APS. Delving into data used to be almost exclusively the domain of statisticians, accountants, economists, and researchers. These days, and increasingly, most roles in the public service require some level of data literacy. The Data Profession will play a major role here.

## **The APS Data Profession**

Before I talk about the Data Profession in detail, I want to outline how the Profession came about.

In 2018, the Australian Government commissioned an independent review, led by David Thodey, to assess whether the APS was fit-for-purpose for the coming decades. The Terms of Reference for the review noted the APS needed to be apolitical and professional, agile, innovative, and efficient — driving both policy and implementation through coherent, collaborative, and whole-of-government approaches. The APS must have the capability to meet core responsibilities and deliver functions, and to understand and deploy technology and data to drive improvement.

The review found the APS needed a service-wide transformation to achieve better outcomes. It needed short-term change and long-term reform to serve the Government, Parliament, and the Australian public more effectively. In particular, the review noted the APS should make better use of data and analytics to generate deeper insights, provide better advice to inform government decisions, and enable more effective service delivery and regulation to improve social and economic outcomes.

In response to the review recommendations, the APSC established three Professional streams that focus on critical disciplines and functional areas. The Human Resources Profession was launched first, with Jacqui Curtis from the Australian Taxation Office serving as inaugural Head of Profession. The Digital Profession was launched next, headed by Randall Brugeaud and the Digital Transformation Agency.

The third was the Data Profession, which was launched in September 2020. I was appointed Head of Profession, with the ABS as lead agency. At the centre of the work program is the Data Profession Strategy, which addresses the need to strengthen data capability overall as well as build niche expertise for sophisticated data users. It aims to lift the data capability of the APS workforce by defining data capabilities, increasing diversity and mobility of people in data roles, and creating career pathways and development opportunities. The Program aims to ensure the APS can attract, develop, and retain people with the data capabilities required to harness the unprecedented growth in the availability and value of data.

The 2020 Employee Census, run by the Australian Public Service Commission (APSC), asked staff to identify what skills or capabilities they thought were missing within their teams. Data skills were rated as the fourth highest capability gap across the service, from general data literacy to

professional skills. These results suggest there is a data capability gap, which the Data Profession seeks to narrow if not close. My role is to guide the Profession's progress against the initiatives, priorities and success factors outlined in our strategy.

The Data Profession is now in the second year of the two-year work program, which was co-designed with partner agencies through a Senior Working Group, and in close collaboration with the HR and Digital Professions. There are 26 agencies actively participating in co-design and governance at SES levels. The co-design approach is critical to ensuring the programs and resources created will be valuable across the APS and will ensure the Profession is embedded in a sustainable way.

So far, the Data Profession has made good progress uplifting data capability across the public service in a relatively short period of time. I'll quickly outline some of the initiatives.

We established a Data Professional Network, to guide and share professional data standards and best practice, which now has approximately 1,700 members. We've also set up a closed LinkedIn group for APS Data Professionals, which currently has 845 members.

Throughout 2021, the ABS led a streamlined data graduate recruitment round on behalf of the APS for the 2022 intake, recruiting Data Analysts, Data Scientists and Statistical Methodologists for 24 agencies. Over 2,400 people applied for these roles, with multi-agency selection panels conducting interviews. This resulted in 216 job offers to graduates and created a merit list. This major recruitment campaign secured many data professionals for the APS and was also a great example of cross-agency cooperation. Some of you here today may have been recruited through this process. If so, congratulations! Work is underway on 2023 data graduate recruitment.

We've supported a mobility program of Immersive Learning experiences, which aims to develop sophisticated and specialist data capability for APS employees through job swaps or secondments. So far, we have facilitated 13 short-term arrangements, where APS staff with data expertise have gone to work in another agency or department. When these staff return to their home agency, they have a better understanding of how data is used in another data-rich agency in the public service.

One of the most important pieces of work the Profession has undertaken is the development of an APS Data Capability Framework, which defines the data skills, knowledge and behaviours required to perform our roles in the APS. What is valuable about the Framework is that it elucidates and catalogues the many different types of data roles across the APS.

When talking about data skills, many people immediately think of data analysis, and of course data analysis is important. But the Framework lists many data capability areas including data management, data collection, data governance, data classification, and data communication and

visualisation. You can also use it to assess your level of proficiency and identify what you need to do to lift your data capability and further your career.

The Beta version of the Framework is available on the APSC website. We will refine it based on feedback from testers until the production version is released in the second half of the year. A community of practice is available on Govteams to support users of the Framework to share their implementation experiences, discuss ideas, and solve issues together.

Some other initiatives that are in early stages include:

- developing an assessment tool, based on the Framework, that will enable agencies and staff to link capability pathways to learning offerings or other opportunities such as job swaps or secondments;
- developing a suite of data roles that are scalable and adaptable across the APS. This work is being led by the Australian Taxation Office; and
- exploring how the tertiary sector can better meet the needs of the APS for data professional skills.

Over the coming year, we'll continue to work with partner agencies, the other Professions, the APSC, and the newly established APS Academy, to determine how we can embed these valuable initiatives across the APS at the end of the work program.

I've given you a high-level overview of the Data Profession. I hope you would like to know more! If so, I encourage you to visit the APSC website for more information and to access the excellent resources. While you're there, you can join the Data Professional Network and sign up for the newsletter. You can also contact the Data Profession team directly by emailing [data.profession@abs.gov.au \(mailto:data.profession@abs.gov.au\)](mailto:data.profession@abs.gov.au)

## **Innovative APS Data Projects**

I want to turn now to talk briefly about some innovative data projects being undertaken across the APS, because while we recognise the need to lift data capability, the APS already has highly skilled and experienced data professionals doing exciting and useful things with data. What we've been able to achieve in the last few years is impressive, after many years of building the necessary foundations, and now we're really scaling up.

Some of the other presenters here today may have discussed these projects so I hope I'm not repeating what they've already said. I could talk about these things for quite some time but given time constraints I'll limit myself to three examples.

My examples are about projects that involve the ABS, often in close collaboration with others. I choose these examples because I know them best, rather than because the ABS has a monopoly

on innovative data projects across the APS!

The first is the Australian Climate Service, or ACS for short. The ACS was established last year, and is a virtual partnership, bringing together expertise and data from the ABS, the Bureau of Meteorology, CSIRO, and Geoscience Australia. The role of the ACS is to help the government and the community better understand the threats posed by natural disasters, including those that have been intensified by climate change, and limit their impacts now and in the future. The ACS connects the Commonwealth's extensive climate and natural hazard information into a single authoritative and detailed source of truth.

The ACS delivers data, expertise, and advice to two customers: the newly formed National Recovery and Resilience Agency (NRRRA) and Emergency Management Australia (EMA). The ACS's current focus is helping these agencies understand and respond to the terrible floods in Queensland and NSW, which involves rapidly responding to data requests from our customers.

A recent example involved providing data to NRRRA within 24 hours to help them to estimate the population adversely affected by the floods. The request came in on Friday evening, eleven days ago, to feed into an urgent briefing that weekend. We mobilised quickly, established data sharing agreements, prepared the data, and set up a secure transfer mechanism to get the data to NRRRA by early Saturday afternoon.

The data was based on the ABS Population Grid, which combines the latest ABS regional population estimates with the enhanced 2020 Geocoded National Address File (or G-NAF) from Geoscape Australia to provide small-area estimates of population. Using this data, we provided modelled location estimates of population at a Statistical Area 1 (SA1) level that the NRRRA could use to flexibly match to flood extents as they moved and changed.<sup>1</sup>

The second example is work we've been doing using existing public and private sector data sources. We call it the Big Data, Timely Insights project.

The first output from this project was a new indicator of business turnover, based on Business Activity Statements submitted to the ATO. The first release of this new indicator was in October 2021, and it is being released monthly since then.

Last month, we began the release of a second monthly index, this time providing a measure of household consumption, based on aggregated, de-identified transactions data from Australia's major banks.

Household consumption accounts for about half of GDP, so there is considerable value in having an accurate measure of it. The existing monthly measure of household consumption is based on the Retail Trade Survey, which covers about 30% of household consumption.

The new measure, based on banks' transactions data, covers 68% of household consumption, so that is a substantial step up. Many items of household consumption are captured in the new transactions-based indicator but are missing from the retail trade index. To give a few examples: purchase of petrol, car servicing and maintenance, train and bus tickets, Uber rides, airline tickets, hotels, theme parks, haircuts, dentists and allied health costs. You get the idea!

Further, these new indicators use existing data that has been collected for other purposes. They do not rely on surveys that unavoidably place a burden on respondents to the survey.

The third example is the National Disability Data Asset (NDDA), which the Commonwealth, and state and territory governments are working together to develop. The NDDA will be created by linking data to better understand the life experiences of people living with disability, and research and analysis using the NDDA aims to improve inclusion and opportunity for people living with disability in Australia. Better information can improve supports and services because it shows what helps people achieve more favourable outcomes. The NDDA will also produce data sharing infrastructure to enable secure sharing of data across jurisdictions.

These are just a few examples of what the APS is currently doing with data to meet critical information needs. It is worth reflecting that not so long ago we couldn't do these things because: there was much less sharing of data between agencies; the supply of data was more limited because digital platforms had not reached a level of maturity that enabled the generation of large quantities of data; and we didn't have the required technology such as cloud storage.

We've come a long way, but we can do so much more if we continue to lift data capability across the APS. The passage of the Data Availability and Transparency Bill is also an important element of the journey.

## **Conclusion**

I've talked about the Data Profession and given you some examples of innovative data projects. You've also heard earlier today about other data projects and initiatives in both the public and private sectors. To conclude, I'd like to leave you with a few thoughts on what this all means for you – graduates at the start of your APS career.

As the data landscape around us continues to evolve and grow, there may never have been a more exciting time to have the privilege of working with data. There is a great breadth of data available to explore in the APS, and you can do really interesting and important work with it. And remember, there are many different data roles you can try.

I encourage you to keep up to date with, and get involved in, data happenings across the APS, but also within your own agencies and departments. Check out your organisation's data strategy,

and if there isn't one, perhaps ask your senior leaders if they would like your help to develop one!

An important aspect of all these data initiatives is collaboration, not just across the APS, but also with States and Territories, universities, and the private sector. No single agency could make such good progress on its own. So my advice is to start building relationships with your peers today. Get to know the people in the room (or on the screen!), people in your agencies and departments, people across the public sector and other sectors, and listen and learn from them. It's those relationships that will make data projects successful, ensuring the APS can provide relevant, timely, and impartial information to inform Australia's important decisions.

Thank you.

1. The data needs to provide detailed local information without compromising the privacy of individuals or households. Providing information at an SA1 level achieves these aims. There are between 200 and 800 people in each SA1, and about 62,000 SA1s across Australia.