APS DATA PROFESSIONAL STREAM STRATEGY
Strengthening data capability across the APS to generate deeper insights, inform evidence-based decisions and enable more effective service delivery

CONTENTS

CONTEXT

Data are the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time; designing, monitoring and evaluating effective policies becomes almost impossible.[1]

Australian Government data holdings are a strategic national resource vital to developing evidence-based decision making and increasing productivity. Unlocking data enables program evaluation, informed policy, risk-based regulatory processess and effective services for all Australians, and is critical in informing timely government responses during crises. Data-driven innovation has been estimated to add up to $64 billion per annum to the Australian economy[2].

The Government's reform agenda for the Australian Public Service (APS) recognises the importance of using data to better understand and respond to the needs of Australians. 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[3].

Data governance and capability is increasingly recognised as a driver of public trust in government. Research has found six key drivers of trust in governments' use of data: use, protection, transparency, respect, benefits and accountability[4]. As custodians, stewards and users of public data, the APS has a responsibility to build and maintain public trust; achieving this in an increasingly complex data environment will require improving capability in these areas.

The APS Data Professional Stream will be designed to do just that: uplift data capability across the APS through formal, focused professionalisation of the APS data workforce, along with opportunities for data producers and users to improve their proficiency throughout the course of their careers. The APS Data Professional Stream Strategy outlines the means by which the APS can attract, retain and mobilise high-quality employees in data-related roles. It will guide the creation of career pathways to ensure the right balance of breadth and depth of experience, and define the means by which members of the APS data workforce can enhance their understanding of data and appropriate data practices. The Stream will build a professional data workforce for the APS by establishing professional networks and communities, supporting data career development, and collaboration with national and international entities.

1 United Nations Secretary-General's Independent Expert Advisory Group on a Data Revolution for Sustainable Development, A World that Counts: Mobilising the Data Revolution for Sustainable Development, 2014.

2 Commonwealth of Australia, Department of the Prime Minister and Cabinet, The Australian government's response to the productivity commission data availability and use inquiry, 2018.

3 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Delivering for Australians, 2019.

4 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Trust in Government Data Use – Guide and Toolkit, 2019

Critical role of data in a crisis

Early on in the COVID-19 pandemic response, the Department of the Prime Minister and Cabinet established a dedicated data analytics team (including experts seconded from across the APS) who compiled and analysed COVID-19 data from Commonwealth, State and Territory sources, as well as from the private sector and overseas.

The data team's up-to-date information, statistics, trend analysis and modelling of behaviours and impacts during COVID-19 have been essential in guiding Government decision-making and tracking of the effects of measures taken. The team brought together collective APS information, advice and skills to provide a consolidated product to the Prime Minister and the National Cabinet, rather than a series of separate reports from different pockets of expertise across Government.

They worked with an initial product and constantly iterated as the crisis evolved. They experimented with new approaches to provide a 'real-time' picture, instead of simply relying on traditional Government data sources.

This dynamic use of data to measure success and track progress will continue to be critical as the COVID-19 response continues. It will help to ensure implementation of the Government's agenda is on track, and support timely adjustments to programs as the crisis evolves.

DATA LANDSCAPE

> **"2020 has tested us all - as a people, as a Government and as a public service. It started with bushfires and we are now dealing with a global pandemic. However, even before the pandemic the world was changing rapidly. We were all working off a playbook which recognised that IT, digital and data were going to be the key to how we delivered services and how we sought and measured outcomes. This current crisis has dramatically accelerated these trends."** Mr Peter Woolcott AO, Australian Public Service Commissioner[5]

There has been an unprecedented growth in the value and use of data internationally. The APS is no different. Data has become a heavily sought-after commodity, with agencies striving to ensure policies are evidence-based, service delivery is citizen-centric and programs are innovative. In the past five years, instrumental work has laid the foundation for professionalisation of the data workforce, including:

- The release of the Public Data Policy Statement[6], which provided a clear mandate for Australian Government entities to optimise the use and reuse of public data, release non-sensitive data as open by default, and collaborate with the private and research sectors to extend the value of public data for the benefit of the Australian public.

- The Public Sector Data Management Project[7], which established a roadmap to make better use of public data. Implementation was achieved through collaboration across all Australian Government entities and under the leadership of the Secretaries Data Group, Deputy Secretaries Data Group and Data Champions Network, with significant work undertaken to progress cross-agency data projects.

- The public inquiry into ways to improve the availability and use of public and private sector data[8] and the Government's response[9].

- The appointment of an interim National Data Commissioner in August 2018, to drive change and support best practice data management and use across the Australian Public Service.

- Published guidance on data sharing[10], use of big data[11], and data asset management[12].

- New legislation to support better sharing of government held data[13].

- Published guidance on foundational organisational data practices[14].

- The 2016 APS Data Skills and Capability Framework[15] aimed at improving overall data skills and capability across the APS.

- The establishment of data analytics teams to deliver improved, evidence-based programs and policy[16], maximising use of the Government's data assets, allowing cost effective and timely insights into data that is already available.

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5 Woolcott, P., Speech at the Australian Public Service Innovation Show: Strategy and Innovation Stream, 10 June 2020.

6 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Australian Government Public Data Policy Statement, 2015.

7 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Public Sector Data Management Report, 2015; Commonwealth of Australia, Department of the Prime Minister and Cabinet, Public Sector Data Management Implementation Plan, 2016.

8 Commonwealth of Australia, Productivity Commission, Data availability and use, Inquiry report No. 82, 2017.

9 Commonwealth of Australia, Department of the Prime Minister and Cabinet, The Australian government's response to the productivity commission data availability and use inquiry, 2018.

10 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Guidance on data sharing for Australian government entities, 2016; Commonwealth of Australia, Department of the Prime Minister and Cabinet, Best Practice Guide to Applying Data Sharing Principles, 2019.

11 Commonwealth of Australia, Office of the Australian Information Commissioner, Guide to data analytics and the Australian privacy principles, 2018.

12 Commonwealth of Australia, National Archives of Australia, Digital continuity policy, 2020.

13 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Data Sharing and Release Legislative Reforms Discussion Paper, 2019.

14 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Foundational Four, 2020.

15 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Data Skills and Capability in the Australian Public Services, 2016.

16 A Taylor (Assistant Minister for Cities and Digital Transformation), Data analytics teams to deliver better targeted services, media release, Parliament House, Canberra, 25 May 2017.

The Strategy will build on these existing frameworks and policies, and leverage current activities to progress initiatives to ensure a data enabled, capable and trusted public service that can deliver effectively now and into the future.

Building data integration and integrated data analysis capability

The Data Integration Partnership for Australia (DIPA) was a three-year $130.8 million initiative of the Public Service Modernisation Fund to maximise the use and value of the Government's data assets by creating new insights into important and complex policy questions through data integration and analysis.

Commencing in July 2017, DIPA was designed to demonstrate how integrated data analysis could drive policy, program and service productivity improvements; ambitious aims within a three-year timeframe. Through the DIPA program:

- technical data assets were established and significantly enhanced, including the Business Longitudinal Analysis Data Environment (BLADE), Multi-Agency Data Integration Project (MADIP), Data Exchange (DEX) and the National Education Evidence Base (NEEB);

- secure data access and analysis infrastructure and data integration capabilities were expanded and improved;

- collaborative multi-agency, cross-sector analytical units of focus and excellence were established;

- communication and engagement between and within government were improved; and

- APS data capability, particularly with respect to integrated data production and use, was uplifted.

Data was integrated and unlocked by data expertise within the APS. DIPA analytical projects enhanced capability within agencies to use data for evidence-based policy and service delivery. Over 80 projects were funded across 20 Commonwealth agencies over three years. These included supporting the Government's response to natural disasters:

- National bushfire response by working with Commonwealth agencies to map the impact of bushfires and provide a data-driven analytical base to inform National Bushfire Recovery Agency discussions with states, local governments and bushfire-affected communities on Local Economic Recovery Plans.

- Drought through the development of the National Drought Map – an interactive online tool to help analysis, decision making and planning around drought in Australia.

The benefits achieved through DIPA included building data capability in the APS with approximately 75 people engaged in data integration and almost 400 people analysing integrated data in agencies in 2019-20. DIPA contributed to building a robust, secure and scalable whole-of-government data integration and policy analysis capability. Funding for DIPA finished on 30 June 2020, but the uplift in APS data capability enabled by DIPA will continue to deliver benefits to Government and the Australian community.

73%

of APS agencies identified employee skills and capability as a barrier to the use of data.*

Data analysts and scientists were identified as among the

TOP 10

emerging job roles for Australia.†

9 in 10

Australian companies are investing in and adopting big data analytics.†

Australian job postings for data science roles rose

58%

in 2018 and are more than

5x

higher than they were in 2014.◊

23%

of Australians think that the Australian Government can be trusted to use data responsibly.#

1 in 3

Australians think that the Australian Government could respond effectively to a data breach.#

Of the APS agencies that identified critical skills shortages

70%

identified skill shortages in data.*

* 2019 Agency survey
† World Economic Forum, The Future of Jobs Report 2018
◊ Indeed Hiring Lab
   https://www.hiringlab.org/au/blog/2019/04/30/data-scientists-au/
Australian National University, Public attitudes towards data governance in Australia, 2019
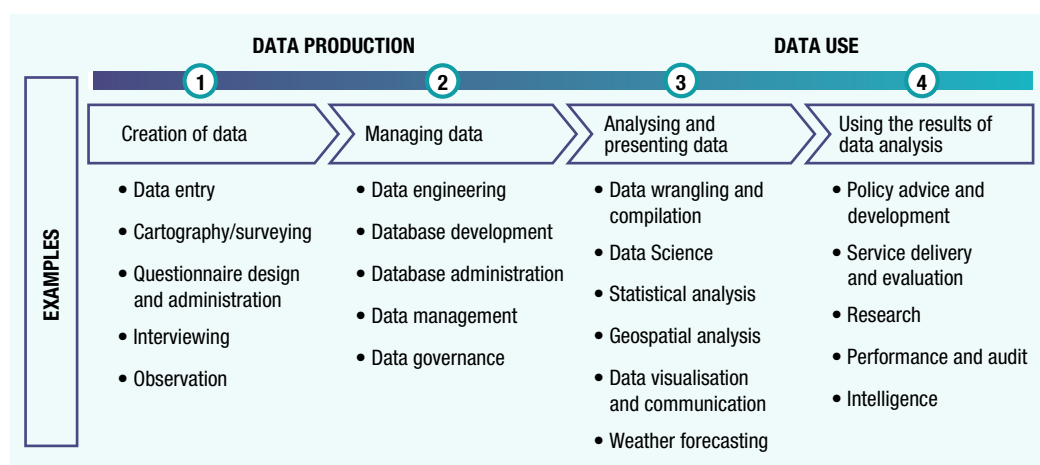
WHO ARE DATA PROFESSIONALS?

> **"Data skills are essential for all APS employees to support evidence-based, informed decision making, whether in policy development, programme management or service delivery. …However while foundational data skills are important for all APS employees, there are some roles across the APS that have a requirement for more specific data skills."** [17]

The Data Professional Stream will have wide applicability across the breadth of agencies in the APS. The Data Professional Stream will provide career development and capability building opportunities for APS staff working with data about people, businesses, the environment and locations.

AGENCY TYPES	Specialist data agencies	Central agencies	Policy agencies	Service delivery agencies	Regulatory agencies	Finance and audit agencies	Justice and intelligence agencies
DATA ABOUT	People		Business		Environment		Locations

The data workforce encompasses a variety of people in a range of data-related roles, including both producers and users of data. The Data Professional Stream will guide responsible, informed, safe and ethical treatment of data across the data use value chain; from collection, generation and management of data, through to compiling and curating data, as well as the analysis, interpretation and application of data to inform decisions.

	DATA PRODUCTION		DATA USE	
	1 Creation of data	**2** Managing data	**3** Analysing and presenting data	**4** Using the results of data analysis
EXAMPLES	• Data entry • Cartography/surveying • Questionnaire design and administration • Interviewing • Observation	• Data engineering • Database development • Database administration • Data management • Data governance	• Data wrangling and compilation • Data Science • Statistical analysis • Geospatial analysis • Data visualisation and communication • Weather forecasting	• Policy advice and development • Service delivery and evaluation • Research • Performance and audit • Intelligence

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17 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Data Skills and Capability in the Australian Public Services, 2016.

The Data Professional Stream will focus on uplifting and deepening sophisticated and specialist data capabilities by providing development opportunities for data producers and users who require more advanced skills to perform their roles.

The Data Professional Stream recognises that all APS staff require appropriate foundational data literacy skills. The Data Professional Stream will champion the uplift of baseline data capability across the APS, including through the Australian Public Service Commission's (APSC) data literacy learning modules. The Data Professional Stream will provide advice and expertise to ensure there are clear pathways to more advanced skills for employees who want to become data professionals.

PRIMARY FOCUS OF THE DATA PROFESSION

CAPABILITY LEVELS	Foundational data literacy	Sophisticated data capabilities	Specialist data capabilities
	All APS employees require a foundational level of data literacy to perform their role. This includes using numeracy and basic statistics such as frequency and averages, visualising data effectively and producing evidence for decision making. Foundational data literacy ensures that all APS staff are able to effectively consume and communicate data or data outputs, and ensure the appropriate use of data.	Sophisticated data capabilities are required by employees who use or produce data on a routine basis. Intermediate to adept data capabilities are required across a variety of settings to inform policy or regulation development, to design more effective services, or to lead a unit or organisation that handles data.	Specialist data capabilities are required by employees who spend the majority of their time performing complex tasks with data. Data specialists include data acquisition officers, data analysts, data brokers, data scientists, or data infrastructure, management or methodology specialists.

APPROACH

As part of APS reform, an overarching APS Professions Framework has been established by the APSC to ensure consistency in the structure and key functions of all Streams.

The Human Resources Professional Stream commenced in October 2019, with the Digital Professional Stream subsequently launched in April 2020. The Data Professional Stream will complement and leverage the work that is continuing in these Streams. Recognising the close connections between data and digital in particular, the Data Professional Stream will ensure alignment with relevant Digital Professional Stream initiatives, creating synergies where possible and providing cross-Stream development opportunities for APS employees.

The Head of Data Profession will sponsor the collaborative development of a program of work and report on progress regularly. The aim is to ensure that the work remains contemporary and forward looking, fit for purpose across wide variety of APS agencies and supports continued success of the overarching APS Professions Strategy.

APS Data Professional Stream Approach

Source, Grow and Mobilise Capability

Recruit specialist data graduates, develop existing data capabilities and enable mobility across data roles

Share Knowledge, Expertise and Better Practice

Establish a Data Professional Network to share knowledge, expertise and better practice in the collection, analysis and reporting of data

Senior Leadership Oversight

Oversight and championing by APS Senior Leaders

Collaboration

Collaborate across government, with private institutions and with academia

The Data Professional Stream aims to **source**, **grow and mobilise** data expertise.

A **collaborative approach**, across the APS, and with public and private institutions and academia, underlies the Strategy and Forward Work Plan and will be a critical success factor. Many agencies have a shared interest in building data capability and have already expressed support for the Data Professional Stream. Support will be sought from APS agencies to co-lead initiatives and assist the Head of Profession.

The data workforce will be supported by a Data Professional Network that **exchanges information**, **shares resources and builds best practice**.

Oversight and championing of the Stream from senior data leaders across the APS will also be key to its success. Implementation of the Strategy and its initiatives will be guided by the Senior Reference Group.

THE STRATEGY

The APS Data Professional Stream Strategy (the Strategy) has four central themes:

1. Establishing the Data Professional Stream

2. Getting it right from the start

3. Developing sophisticated and specialist data capabilities

4. Embedding a professional data workforce

Each theme comprises a number of practical initiatives to ensure an effective professional network is established across the APS.

Initiatives to define professional standards and build data capability will be aligned to the overarching APS Professions Framework, the APS workforce strategy, the APS learning and development strategy, refreshed APS Job Family Model and APS workforce diversity strategies.

Initiatives will continue to be identified, developed and implemented through a Data Professional Stream Forward Work Plan. To support commencement of the Data Professional Stream, six initial signature initiatives have been identified. These will focus on establishing a data professional network, recruiting talent, improving diversity and mobility across the data workforce, and capability development through both knowledge acquisition and role immersion opportunities to enable agencies build the right expertise in data roles.

APS Data Professional Stream Strategy

Strengthening data capability across the APS to generate deeper insights, inform evidence-based decisions and enable more effective service delivery

Establishing the professional stream	Getting it right from the start	Developing sophisticated and specialist capabilities	Embedding a professional workforce
Set up the professional stream	**Attract the right skills to APS roles**	**Enhance capabilities**	**Retain and grow workforce for the whole APS**
Establish a Senior Reference Group	Streamline recruitment across the APS	Design job role profiles	Define and promote career pathways
Identify the Head of Profession	Develop an APS profile	Identify and develop capabilities	Support professional communities
Develop a Professional Stream Strategy	Build inclusion into the professional stream	Identify and promote structured learning opportunities	Identify professional standards
Collaborate and network	**Ensure appropriate entry level qualifications**	Encourage learning by immersion	
Establish professional network	Collaborate with the education sector to uplift entry level qualifications		

THEME 1: ESTABLISHING THE DATA PROFESSIONAL STREAM

Objective 1: Set up the professional stream

1. Establish a Senior Reference Group

The APS Data Professional Stream Senior Reference Group will include members from within the Deputy Secretaries Data Group, the Chief Operating Officer Committee and select agencies. The Group will be co-sponsored by the APSC and ABS.

Members will represent a variety of agencies which operate across the data value chain, from capture and creation, to analysis and reporting, as well as the policy and end-users, to ensure cross-agency influence.

The Senior Reference Group will be supported by a Senior Working Group, with representatives from senior data and analytics roles, as well as those responsible for APS-wide data policy and legislation. Members of this Working Group will be drawn from the Data Champions Executive and other select agencies.

2. Identify the Head of Profession

Secretaries Board will select the inaugural Head of Data Profession.

The Head of Data Profession will champion the APS Data Professional Stream, and work with agencies across the APS to realise the capability uplift objectives of the Strategy.

3. Develop a Professional Stream Strategy

The Strategy aims to support the strengthening of data capability within the APS workforce to generate deeper insights to inform government decisions, effective service delivery and to safeguard data and engender public trust.

A program of strategic initiatives will be developed, guided by the Head of Data Profession, the Senior Reference Group and the Senior Working Group. Engagement and participation across the APS will ensure implementation is a success.

Objective 2: Collaborate and network

4. Establish professional network

A Data Professional Network (the Network) will build professional capability through shared experience and knowledge.

This Network will complement existing data-focused groups across the APS, such as the Data Champions Network, APS Data Network and Graduate Data Network.

The Network will be open to all APS employees in data roles, with the aims of promulgating knowledge, learnings, experiences and professional behaviours across the APS data workforce.

THEME 2: GETTING IT RIGHT FROM THE START

Objective 3: Attract the right skills to APS data roles

5. Streamline recruitment across the APS

Partnerships across the APS support innovative approaches to attract and recruit graduates. By taking a collaborative approach, the APS is able to provide graduate job seekers opportunities to explore a range of graduate roles within participating agencies.

Having a single process for data graduate recruitment is a sensible and cost-efficient approach for recruiting data graduates for all agencies who opt in.

In 2020 the APSC established an APS Professions Framework to build career paths for core professions. A lead agency is managing the recruitment process for each professional stream, including the ABS for the Data Stream.

The recruitment and development of data professionals should be top of mind for leaders who see data skills as valuable assets for the APS. Specialists in relevant disciplines will be included as members on agency selection panels for key leadership roles in the data stream.

6. Develop an APS profile

A view of the APS data workforce, including levels, skills and development needs will be developed.

Information from the APS Employment Database based on the APS Job Family Model will initially be used to develop a baseline profile of the APS data workforce. This will assist in workforce planning, recruitment, development and talent management for data-related roles.

7. Build inclusion into the professional stream

Compared to the broader APS, there are more male employees working in data roles, and under-representation of those with ongoing disability or who identify as Aboriginal and/or Torres Strait Islander.

Increasing the diversity profile of data roles will ensure the data workforce better reflects the communities which we serve, and those to whom the data relates. There will be a focus on building inclusion into the Data Professional Stream from the outset, and on improving diversity at various points across the career lifecycle, starting with identifying and addressing barriers to attracting and recruiting a diverse data workforce to the APS.

Objective 4: Ensure appropriate entry level qualifications

8. Collaborate with the education sector to uplift entry level capabilities

Collaboration with the education sector will ensure people commencing in data-related roles in the APS have appropriate entry-level skills.

Strong connections will be established with academia to ensure course offerings meet the evolving data capability needs of the APS.

Partnerships between agencies and academia which support student learning and career pathways into the APS will be explored. Examples of programs may include project-based student placements, vacation work and cadetship programs, as well as sponsored projects for students to undertake within their university studies.

THEME 3: DEVELOPING SOPHISTICATED AND SPECIALIST DATA CAPABILITIES

Objective 5: Enhance capabilities

9. Design job role profiles

The skills, knowledge and attributes required for data users and producers across the APS will be determined and incorporated into a suite of high-level data job role profiles.

Data job role profiles will provide the building blocks for identifying data capability requirements and career pathways for the data profession.

10. Identify and develop capabilities

The capabilities and expertise required for sophisticated and specialised data roles across the APS will be identified and defined, building on the data job role profiles. Capability building opportunities and learning pathways will be explored in alignment with the APS Learning and Development Strategy.

Existing senior leadership groups, such as the Deputy Secretaries Data Group and the Data Champions Executive, will be engaged to provide a view of senior leadership data capability across the APS, and to develop and champion data leader attributes.

11. Identify and promote structured learning opportunities

Current and emerging capability offerings will be reviewed to identify structured learning and development opportunities for APS staff to grow their data capabilities.

This will be informed by engagement across the APS, as well as any insights drawn from the Data Champions project on Data Literacy and Communication.

The Data Professional Stream will collaborate with academia to promote learning pathways which build sophisticated and expert capabilities for data users and producers.

12. Encourage learning by immersion

A range of options to increase short-term and longer-term mobility for data professionals across the APS will be explored and trialled. Opportunities will be identified to build and solidify sophisticated and specialised data capabilities through immersion in data roles across APS agencies. This will encourage sharing of expertise and context, and will help to grow data capability across agencies.

The APS data fellowship program will be continued and promoted to develop advanced data skills for high-performing data specialists.

Developing data capability in the Australian Taxation Office (ATO)

The ATO's Capability Framework provides staff with information on the capabilities required for their jobs and is a common building block for Human Resources activities. It includes skills, knowledge and traits/attributes. Proficiency is based on a five-point scale (from awareness to expert). As part of uplifting the broader capability of ATO staff, a set of core skills — the essential skills all staff are required to demonstrate — were developed, including data literacy.

In 2018, ATO Learning and Development launched a learning program focussed on building foundation data literacy capability across the entire organisation. The program linked directly to the six elements of the APS data literacy program. A targeted 6-month communication and marketing campaign raised awareness of the program and encouraged staff to undertake the courses and build their data literacy capability.

In addition to improving data capability for the whole of the ATO, learning pathways were created for the Smarter Data Program. Three roles were identified as critical for initial development work — Business Analyst, Data Analyst and Data Manager. The targeted Business Analyst pathway was launched in 2019 and features new job specific skills (developed as part of the consultation process) and knowledge items as well as proficiency levels. Staff are encouraged to use the pathway and provide feedback on the learning products as part of an agile, iterative approach to continuously improve the pathway based on user experience.

Work has commenced on the Data Analyst pathway and is well underway on the Data Manager pathway.

Collaborating on geospatial capability management

The Commonwealth Statistical Geospatial Forum identified a need to address the shortage of staff with suitable levels of skill in the use of geospatial data and technologies in order to deliver quality geospatial information and insights. The Forum observed that management of staff capability development was ad hoc and predominantly siloed within agencies. It was agreed that there was value in working together across agencies to coordinate geospatial recruitment, placement, rotation and development.

A small, inter-agency working group was established in 2019 to develop and trial arrangements. Its objective is to facilitate collaboration on geospatial staffing and development, and establish career pathways for geospatial specialists in the APS. The group has prioritised:

- facilitating temporary movement and development of current staff for career development and new experiences; and

- filling vacant positions as well as creating a recruitment pool to maintain overall capability and flexibility.

The working group has diagnosed blockers or barriers relating to staff movement, mechanisms for joint recruitment, and availability of resources to dedicate to this initiative. The group continues to explore opportunities for professional development and capability building.

THEME 4: EMBEDDING A PROFESSIONAL DATA WORKFORCE

Objective 6: Retain and grow a workforce for the whole APS

13. Define and promote career pathways

Career pathways will be defined and promoted across the breadth of data job roles. Consideration will also be given to career mobility for people working across data and other professional streams.

This will be an evolving and iterative process, with development options needing to adapt to the maturing data professional workforce and keep pace with best practice.

14. Support professional communities

The data landscape is broad, with producers and users of many different types of data in many different roles. Communities of Practice will enable data professionals to exchange ideas and develop capabilities specific to their niche area of expertise (for example, policy evaluation, security, geospatial, crisis management.

15. Identify professional standards

Standards for a professional data workforce in the APS will be established.

Engagement with professional bodies and academia will inform consideration of certification options for people in the data profession. The value proposition of certification options for APS employees will be assessed to ensure that offerings will be cost efficient and flexible to individual and agency needs.

The development of data professional standards will be aligned with other APS initiatives, such as those being considered by the Office of the National Data Commissioner.

INITIAL SIGNATURE INITIATIVES

The ABS has commenced work to identify and progress six initial signature initiatives and is engaging across the APS to further develop and refine these to ensure applicability across the APS.

Establish a Data Professional Network

A Data Professional Network will be established to build professional capability through sharing experience and knowledge. Analysis of the APS Job Family data suggests there are approximately 5,500 APS employees in the APS data workforce spread across 24 agencies.

The Network will be open to all APS staff in data roles and will provide shared access to resources, promote learning opportunities, establish best practice and engage regularly.

Events such as data hackathons may be sponsored by agencies to tackle problems where sophisticated and innovative data use may hold the key.

Regular newsletters will be produced to share knowledge and build connections. These will include updates on progress against the Data Professional Stream Strategy initiatives, access to resources on a shared platform, webinars with guest speakers of note and cross-agency working groups.

Many data networks already exist across the APS (e.g. Data Champions Network, APS Data Network, Graduate Data Network, Commonwealth Statistical Geospatial Forum). The Data Professional Network communications and events will provide new opportunities for these established networks to share and promote their work, and that of their members, across the wider data profession. The Data Professional Network will collaborate and partner with these existing networks to achieve common goals.

Streamline Data Graduate recruitment for the APS

The Data Professional Stream will include an entry-level pathway for people with data credentials or analytical capability. Once staff have been recruited, the APS provides the opportunity to further develop, enhance and retain people with core professional data skills and experiences.

A single process to recruit Data Graduates provides an efficient way for agencies to build this expertise. The ABS has taken the lead with this initiative for the 2021 intake of Data Graduates on behalf of 11 participating APS agencies, which will include a trial of rotating Data Graduates across selected agencies. Agencies have been encouraged to participate in the selection processes (e.g. provide a panel member) where resources allow.

For the 2021 intake, candidates were able to submit one application and undertake one recruitment process for multiple agencies. Suitable candidates will be asked their two top preferences for agencies they want to work in, and preferred location, with the aim of matching as many preferences as possible.

For the 2022 Data Graduate intake this initiative will grow, with more agencies participating in the streamlined Data Graduate selection. Data Graduates are expected to be offered a rotational placement across a mix of central, policy and service delivery agencies and undertake an ABS-led Data Development module during their first year of employment.

Under this model, individual agencies opting into the centralised process fund their Graduate placements across the APS. For the 2022 intake a cost model to fund recruitment and development module costs will be introduced.

Ensure data expertise in recruitment

There are key data roles where attracting data professionals with relevant credentials is highly desirable.

When recruiting talent for key data leadership roles, agencies will be encouraged to include a data expert on their panel who can provide professional advice. This will ensure the right data capabilities are sought and appropriate credentials are maintained.

Unlike the Digital and HR professions, there are very few identified Senior Executive Data roles. As such, the initial focus will be providing data experts for EL1 and EL2 selection processes.

The role of the data experts will be clearly defined and communicated. To test this initiative, a trial will be undertaken in 2021, identifying up to 10 data experts (EL2 to SES2) from selected agencies to form a panel that any agency can access.

An APS agency will run a trial, including providing access to data expert profiles through an online platform. The initial identification of data experts will be undertaken through a mix of self-nomination and invitation. The Data Professional Stream will promote the availability of data experts across the APS and encourage agency panels to self-select from the profiles.

The data expert profiles will include information such as roles undertaken in last 5 years, panel experience, diversity, niche data expertise and availability considerations (e.g. part-time).

Data experts will be able to choose whether they will participate on a panel when invited. When they do participate they will be required to provide key data and feedback to the agency leading this initiative on the process to capture demand, key metrics and learnings.

In 2022, learnings will be applied and the number of data experts within the panel will be expanded.

Build inclusion into the professional stream

Compared to the broader APS, there are more male employees working in data roles, and under-representation of those with ongoing disability or who identify as Aboriginal and/or Torres Strait Islander. Increasing the diversity profile of data roles will ensure the data workforce better reflects the communities which we serve, and those to whom the data relates.

The initiative seeks a commitment from all agencies to build diversity across the data workforce, and to improve diversity over the employee lifecycle.

The Data Professional Stream will build inclusion into its set-up and program from the outset. Creation of an inclusive culture in the Data Professional Stream builds the foundation for improved workforce diversity in data roles. Data Professional Stream foundation documents will include clearly articulated expectations of behavior of all members and agencies, and commit to accessibility of all Data Professional Stream events and communications.

Embedding diversity into activities at all stages of the employee lifecycle will gradually build increased diversity in APS data roles. Activities will reflect the APS Aboriginal and Torres Strait Islander, Disability and Gender Equality workforce diversity strategies being updated and released in 2020.

Initial efforts will focus on the attraction, recruitment and onboarding lifecycle stages. This includes ensuring that there are no barriers to attracting and recruiting a diverse data workforce to the APS. Subsequent efforts will focus on the personal development and retention stages of the employee lifecycle.

Develop sophisticated data users

The 2019 APS employee census indicated that although use of data is a common element of job roles across the APS, employees often feel that there are skills shortages in relation to data.

The primary focus of this initiative is to establish opportunities to develop sophisticated data users. To achieve this, existing capability building resources, courses and learning immersion opportunities will be shared and promoted. Possible examples include online training packages, a cross-agency key speaker series, data fellowships and university offerings. Ensuring that APS data users are aware of and have access to these opportunities will be critical to the success of this initiative.

Micro-credential opportunities, along with establishing a Recognition of Prior Learning/ credit process will be explored in partnership with universities. Defining tertiary pathways that enable micro-credentials and credit to link into existing formal qualifications will also be considered within this initiative.

A capability framework will be developed to bring these learning and development offerings together in a structured manner that enables data users to easily identify capability building opportunities.

Enhance mobility in data roles

Mobility is a mechanism to build data capability and encourage cross-pollination of context, experience, knowledge, skills and expertise. High-performing data professionals should be encouraged to be more mobile across APS agencies, State and Territory jurisdictions, private sector and academia to share their expertise and grow APS data capability.

To strengthen the development of professional data capability, a trial mobility program will be developed to create short-term (up to 6 month) secondments or 'swap' opportunities for high-performing data experts between interested agencies. For example, swapping an expert from a data user agency with one in a data producer agency with similar subject matter expertise. These short-term opportunities will allow for exchanges of knowledge and growth of skills for individuals, while also building data capability and sharing expertise across the APS.

This initiative could be matured in the future to include opportunities for cross-agency project work for data teams or individual data professionals with particular expertise. It could also be expanded to include mobility opportunities to State and Territory jurisdictions, private sector or academia.

The Data Professional Stream will align with the APS Mobility Framework and will work with the HR and Digital Professional Streams to determine whether there are opportunities to collaborate and include data professionals in other mobility initiatives that are also in development.

WHAT WILL SUCCESS LOOK LIKE?

To strengthen the connection of the APS with all Australians, we will… use data better — 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.[18]

The APS Professions Framework has been established to increase the capability of APS employees working in critical disciplines in the APS, and the Data Professional Stream aspires to do just that. The successful establishment and embedding of a professional APS data workforce will uplift and deepen APS data capability and instil a culture of data excellence across the APS, resulting in:

- more efficient and better policy advice and service delivery for Australians;
- improved, data-driven agency decision making;
- increased professional collaboration between agencies and with academia; and
- increased public trust in the Government to collect, share and use data appropriately.

A successful Data Professional Stream will offer individual staff clearer pathways and greater mobility over their careers as data professionals. By creating a common understanding of the skills, behaviours and experience needed to thrive in data professional roles, and providing access to data capability development opportunities, professional networks and Communities of Practice, the Data Professional Stream will attract, develop and retain a highly-talented APS workforce.

The Data Professional Stream will deliver benefits for Australian citizens, the APS, Government agencies and APS staff, and outcome measures will be identified and monitored regularly at each of these levels.

BENEFICIARIES	OUTCOMES
AUSTRALIAN CITIZENS	• Citizens have access to simple, reliable, tailored and timely programs and services • Citizens trust Government to collect and use their data appropriately
APS	• The APS uses and understands data effectively to inform policy advice, regulation and services • The APS uses data safely, securely and ethically
GOVERNMENT AGENCIES	• Agencies attract, develop and retain staff with sophisticated and specialist data capabilities • Agencies build a more diverse data workforce • Agencies foster a culture of data excellence • Agency decisions are informed by fit-for-purpose data and sound analysis
APS STAFF	• Data Professional staff have appropriate entry-level data skills • Data Professional staff become more confident and capable data producers and users throughout their careers • Staff access professional networks and communities of practice • Data professionals are more mobile and have access to data career pathways • Staff have a clear understanding of the competencies and behaviours expected of APS data professionals

18 Commonwealth of Australia, Department of the Prime Minister and Cabinet, Delivering for Australians. A World-class Australian Public Service: The Government's APS reform agenda, 2019.