

Submission to the Productivity Commission inquiry on data availability and use

Department of Immigration and Border Protection

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Introduction

The Department of Immigration and Border Protection (the Department) welcomes the opportunity to contribute to the Productivity Commission's public inquiry into data availability and use.

The vast, complex and valuable data managed by the Department reflects its broad role in supporting the Australian Government to achieve strong national security, a strong economy and a prosperous and cohesive society. Its datasets have the potential to support innovation in many spheres of Australian life.

The Department is committed to continuous improvement in its collection, maintenance, use and release of data. It is leveraging new and sophisticated tools and analytic techniques to maximise the value of big data, in collaboration with academic, industry and government partners. The Department's work to advance the availability of data across trade, travellers and migration aims to improve:

- accountability and transparency
- · the development of evidence-based policy and operations
- the delivery of client-centred government services
- analysis and research to inform public debate
- innovation and productivity.

This submission will outline the institutional context in which the Department currently collects, uses and releases data, before describing its high-value datasets, along with the opportunities and challenges in improving data availability.

Institutional environment

The Department operates in a complex and rapidly evolving environment. Its information holdings are extensive, complex and valuable.

On 1 July 2015 the Australian Customs and Border Protection Service (the Service) was integrated with the Department of Immigration and Border Protection, and the Australian Border Force (ABF) was established.

Established in 1945, the former Department of Immigration played a crucial role in building Australia through managed migration. The former Service served the critical role of protecting the safety, security and commercial interests of Australia since its establishment in 1901.

Today the Department, and its operational arm, the ABF, manages Australia's trusted gateway to the world. Its remit spans before, at and after the physical border across both land and maritime domains. Within these domains, the Department is responsible for research and strategy, policy development, service delivery, corporate services, reporting and evaluation of programmes, and compliance with, and enforcement of, its legislation.

These functions include:

- Australia's migration, temporary entrants, humanitarian and citizenship programmes
- border management, including processing travellers, mail and cargo
- compliance with, and enforcement of, immigration and border protection laws, including detection of illegal imports, combatting people trafficking and locating illegal workers
- revenue collection
- offshore maritime security.

The Department manages highly **complex**, **varied and high volume** administrative and survey data as part of its responsibilities. Its data holdings are relevant to nearly every public policy domain. In particular, migration has been a key driver of Australia's population growth over the past decade, and population growth directly affects many public policy settings at both the national and sub-national level (such as public planning, infrastructure, health, and education). The composition of this population growth shapes the fabric of Australian society and the economy.

Departmental data management and use occur in a **highly regulated environment**. The Department administers more than 20 primary pieces of legislation (see Attachment A for a full list) and more than 7000 items of subordinate legislation. In addition, it must comply with numerous Commonwealth laws, regulations and guidelines that relate to portfolio activities and the management of public funds, and more than a dozen acts specific to information management such as the *Privacy Act 1988* (the Privacy Act), the *Archives Act 1983* and the *Freedom of Information Act 1982* (the FOI Act).

The spectrum of information managed by the Department is unique at the federal government level. The importance of this information is exemplified by the **Department's partnerships** with other government agencies, the private sector and international partners. For example, the Department works closely with law enforcement agencies to secure our maritime and territorial borders and ensure the safety of the Australian community (see also Box 1: Border Intelligence Fusion Centre, p6). Alongside agencies such as the Australian Criminal Intelligence Commission and Australian Federal Police, the Department disrupts organised crime activities that range from illicit tobacco importation to human trafficking, ensures compliance by traders so that duties and taxes are correctly paid, conducts workplace visits to deter and identify the exploitation of foreign workers, and resolves the status of unlawful non-citizens.

The Treasury draws on migration, trade and customs data to inform government fiscal settings, while population data (compiled by the Australian Bureau of Statistics [ABS]) is used to develop social and economic projections in its intergenerational reports. The Department works closely with the Department of Social Services (DSS) in its delivery of settlement services and the Department of Education on issues related to international students. It provides critical information to the ABS to compile trade statistics, Australia's national accounts and demographic projections.

The Department works closely with private industry to deliver, and maintain the integrity of, its programmes. For example, it collaborates with education providers, Australian employers and migration agents in delivering visa programmes; and importers, exporters, mail gateways, airports, seaports, airlines, ships and freight companies to process travellers and goods.

The Department maintains close international partnerships to strengthen regional and global border protection. Through sharing information, expertise and resources with immigration and customs agencies and international bodies such as the United Nations High Commissioner for Refugees and World Customs Organization, the Department contributes to streamlined trade, the integrity of supply chains, prevention of people smuggling and facilitation of genuine travellers.

While the span of the Department's functions gives an indication of the complexity of information it holds, growth in the overall **volume of data** collected has also accelerated. As a broad indicator of the size of its information holdings, in Canberra, the Department uses more than 1.2 petabytes of data storage (that is, more than 1.2 million gigabytes).

In 2014–15 the Department and former Customs Service:

- processed about eight million lodgements for visa and citizenship applications, with more than 7.6 million visas granted across about 100 visa subclasses
- processed 36.8 million people crossing Australia's borders
- conferred or approved applications for Australian citizenship for more than 300,000 people
- located 16,567 unlawful non-citizens and removed or assisted the departure of 11,705 people
- detected and seized more than 32,000 drug consignments, 1775 illicit firearms and
 91 illicit tobacco imports with an estimated revenue evasion worth \$103 million
- cleared on average almost 100,000 cargo consignments and inspected 1.067 million mail items
- collected \$15.7 billion in revenue, including \$11 billion in customs duty and \$3.5 billion in GST.

By 2018–19, the number of arriving and departing passengers is anticipated to increase by 23 per cent, with the number of air cargo consignments to increase by 26 per cent and sea cargo reports by 14 per cent.

Box 1: Border Intelligence Fusion Centre

The Border Intelligence Fusion Centre is an example of the use of departmental datasets concerned with Australia's borders and the safety and security of the Australian community. Opened in July 2014, the 24/7 centre brings together a number of Commonwealth agencies and collaborates with similar targeting centres in the United States, Canada, Britain and New Zealand to share real-time intelligence on transnational threats.

The centre draws on the information and collective expertise of the Department and the:

- Australian Federal Police
- Australian Security Intelligence Organisation
- Australian Criminal Intelligence Commission
- Australian Transaction Reports and Analysis Centre (AUSTRAC)
- Department of Foreign Affairs and Trade
- Department of Agriculture
- Department of Infrastructure and Regional Development.

Through sophisticated analysis of departmental pre-departure data and information held by other agencies and partners, the centre identifies passengers and cargo that present a threat to the Australian community in real-time. This capability supports holistic, intelligence-led intervention ahead of the border by collectively identifying national security threats, immigration risks and international criminal syndicate activities.

This highly targeted capability has the added benefit of facilitating a seamless travel experience for the majority of genuine travellers and streamlined processing of low risk goods, which is critical in the context of exponential increases in passenger and trade volumes.

Data management and release

In line with the Government's Public Data Policy Statement,² the Department seeks to continuously improve the availability and management of its data to support research and innovation, while maintaining the highest standards of security and privacy for individuals.

Data protection

The Department's data is governed by a range of legislative and regulatory provisions, policies and guidelines that protect personal and sensitive information.

The Department holds large volumes of **personal information and sensitive operational data**, ranging from visa information (see also Box 2: Movement records, p7), cross-border smuggling of goods, and countering violent extremism and fraud. The protection of these data holdings from unauthorised access, modification or disclosure is vital.

In an environment of considerable external scrutiny over the last decade, the Department has implemented several initiatives to improve data governance and protection. For example, to ensure consistency across publications, the Department checks all statistics through a central point before release, and to ensure individuals cannot be re-identified in public data, information is suppressed where necessary.

A range of **legislative provisions** and Departmental policies specifically govern the protection of data held by the Department. This includes:

- · departmental policies on data and records management
- portfolio legislative and regulatory provisions such as the Australian Border Force
 Act 2015 (ABF Act), Customs Act 1901, Migration Act 1958 (Migration Act) and Australian
 Citizenship Act 2007 (Citizenship Act)
- Commonwealth legislation, such as the *Archives Act 1983*, the *Freedom of Information Act 1982* and the *Privacy Act 1988*
- whole-of-government policies such as the Protective Security Policy Framework, the Information Security Manual and Australian Privacy Principles
- public sector principles and best practice such as the Principles for Open Public Sector Information and Guidelines on Data Matching in Australian Government Administration.

Legislative protection is underpinned by implementation measures, including a professional integrity framework to combat corruption, system access controls, monitoring and assurance programmes, training and cyber security measures.

Box 2: Movement records

The Department collects information about every traveller entering or departing Australia—including name, date of birth, country of citizenship and passport details—in the Movements Reconstruction database. This data is used to screen international travellers prior to boarding and rapidly process them on arrival. Movement records are essential to ensure passengers have an authority to enter Australia (for example, a visa or Australian citizenship) and to detect people who may pose a serious threat to the Australian community.

In addition to this personal information being protected under privacy laws, the Migration Act restricts who can access and disclose these records and for what purpose. Section 488(1) of the Migration Act makes it an offence to read, examine, reproduce, use or disclose any part of the movement records unless there is authority to do so. Section 488(4) makes this offence punishable by two years imprisonment or 10 years imprisonment if records are deleted, altered or added to.

Only people authorised under a ministerial instrument of authorisation can access movement records, given the detailed nature of information collected. Individuals may obtain access to their own movement records and other agencies may obtain access through information sharing agreements.

Data collection

The digital age has heralded expansions in data collection methods and types of information, along with rising expectations for data access and real-time analytics.

The Department collects large volumes of administrative data from many different sources, often entered within limited timeframes to meet processing service standards, via a range of platforms and in different formats.

As the Department has adapted to changing policy, legislative, operational, economic and social needs, its information management systems have also evolved. It has embraced the digital age in **data collection** methods—for example, electronic visa applications and automated passenger clearance gates—while also collecting **new types of information**, such as biometrics.

The growth in the **number of systems** that collect, store, transmit and use this data has created a complex web of interacting platforms. This trend has accelerated recently as the systems have been brought together into an integrated Department. The Department currently manages more than 300 system applications, with up to 50 different systems used for visa and citizenship decision-making alone.

Sources of information have diversified with clients entering information directly into systems, as well as data provision through third-party service providers, private industry and new open source avenues:

- Information collected through forms submitted directly by clients includes personal, demographic information and any necessary information to meet visa or citizenship criteria.
- Information collected from third parties associated with visa applications, such as sponsoring employers, is used to verify employment and enrolment details.
- Certain companies (such as airlines, shipping companies, importers and exporters) are required to provide information to assist in processing passengers and goods.
- The Department commissions surveys, such as the Continuous Survey of Australia's Migrants (CSAM), for research purposes.
- Information is also obtained through open source channels, such as media reporting or web publications.

Numerous **legislative**, **policy and operational changes** over the decades have meant that what data is collected, and how, has fluctuated over time. In 2015 the Government made 15 legislative and 22 regulation amendments to the Department's extensive and complex portfolio of more than twenty acts, as well as introducing a new act—the *Australian Border Force Act 2015*. At the same time, the Department has extended the range and improved the timeliness of its identity data and associated analytics in order to support its responses to national security imperatives alongside partner security agencies.

Data use

Departmental data holdings are used widely to inform operational decision-making, policy development and in meeting public accountabilities.

The Department's data holdings are used internally for the delivery of visa, citizenship, trade and border services, compliance, investigation and enforcement activities, operational reporting and programme management, risk management and intelligence development. They also support evidence-based policy development, evaluation and strategic planning.

The Department's data holdings are widely used by other government agencies, in accordance with relevant legislation (see also Box 3: State of Australian Cities 2013, p9) in relation to:

- trade and foreign affairs
- the economy, tax and other revenue collection
- health, welfare, education and settlement services
- · national security and law enforcement
- population and infrastructure planning.

For example, the Department of Foreign Affairs and Trade may request evidence of Australian citizenship from the Department to support issuing an Australian passport, and the Department of Social Services (DSS) uses data on newly arrived permanent residents to plan settlement services. A range of data is also provided to the ABS as an accredited data integrating authority. This means that:

- ABS staff sign legally binding undertakings of secrecy and fidelity
- a number of controls are used to ensure privacy, such as de-identifying data and manipulating data to ensure records with uncommon combinations cannot lead to reidentification.

Data-sharing with the ABS has enabled linking of immigration data with tax and other data to create far richer data sets for research.

Departmental statistics are also added to international migration databases. For example, every year Australia provides the Organisation for Economic Cooperation and Development (OECD) with statistics for its database on demographic and labour market characteristics of migrants in OECD countries.

Researchers draw on departmental statistics via published reports and in direct consultation with the Department. This builds understanding across a number of policy fields in the national interest.

Box 3: State of Australian Cities 2013

In its annual report into the *State of Australian Cities*, the Department of Infrastructure and Transport compiles research into how Australia's major cities are evolving in order to support policy and investment decisions.³

One of the key factors identified in city development is the growth rate and agglomeration patterns of its population. Given that around half of Australia's population growth is driven by net overseas migration, the Department's data on patterns of international migration and migrants' human capital is critical to supporting analysis of the productivity and liveability of Australian cities.

The Department's contribution to the *State of Australian Cities 2013* drew on analyses of departmental visa data, traveller data and Census data, including geospatial mapping of migrant flows. The analyses examined the different ways in which migration—and people movement more broadly—is fundamental to Australia's global cities, focusing on two types of migrant settlement patterns:

- The first is characterised by large temporary and visitor populations concentrated in city centres, which link Australian cities into networks of global knowledge-based industries such as finance, accounting and management services.
- The second is characterised by the distribution of temporary resident populations and citizen migrants, often on the outskirts of cities, who are not necessarily part of the emerging knowledge economies but are also increasingly living more transnational lives.

Each type of settlement pattern poses its own challenges in terms of stress on accommodation, transport and social cohesion, but also opportunities for global connectivity leading to innovation, economy growth and social change.

Data release

Anonymised departmental data is published online, shared with trusted agencies and researchers, and disclosed to individuals under freedom of information provisions—in accordance with legislative, privacy and security obligations.

The Department currently publishes a range of anonymised migrant, traveller and goods data and aggregated statistics on its website (www.border.gov.au) and the Australian Government online repository for data (www.data.gov.au). Anonymised unit record data is also released to approved entities through a secure Australian Government platform (www.govdex.gov.au) on a cost recovery basis. Some departmental data shared with other agencies is published on their websites and interactive platforms, such as the ABS' TableBuilder platform or DSS' Settlement Reporting Facility. Attachment B provides a list of statistical reports currently published by the Department.

The release of public sector data supports public accountability and transparency, and supports evidence-based research and policy (see also Box 4: Migration and Productivity, p11).

The Department shares data with other agencies to create linked data sets that provide richer information for the public and policy makers. For example, the Australian Census and Migrants Integrated Dataset (ACMID) integrates permanent migrant records from the Settlement Database with Census 2011 records, and the Personal Income Tax and Migrants Integrated Dataset (PITMID) brings together taxation and visa data. The collaborative arrangement between the Department, the ABS and DSS has facilitated innovative linkage projects such as the ACMID. All projects have rigorous controls applied to ensure privacy and protect the data. Under these arrangements, the three agencies fund and set work priorities for the ABS National Migrants Statistics Unit. The Department is also collaborating with the ABS to link temporary migrant data with Census data, to provide insights into the economic and social outcomes of Australia's temporary residents.

Apart from what is publicly released online, the Department also provides data to academics and other researchers under formal agreements and in response to one-off requests as part of its research programme. Anonymised data is also provided to the media if requested and in line with relevant legislation.

The Department also releases information to individuals and other entities that make requests under freedom of information (FOI) laws. It consistently receives the most FOI requests of any Commonwealth agency, with more than 21,500 requests in 2014–15 or 53 per cent of all such requests. This was up by 31.1 per cent compared with the previous financial year and it is expected that more than 20,000 requests will be received in 2015–16.

ⁱ The vast majority of requests are from individuals seeking access to their own records. Given that the FOI Act does not require publication of personal or business information in FOI Disclosure Logs, most of the Department's FOI requests are not published.

Box 4: Migration and productivity

As part of the Department's research programme it provides data and information to academics and research partners to support independent research into social and economic issues associated with migration. Recently the Department worked with the Australian National University on its research into *Migration and Productivity in Australia*.⁴

Productivity growth is central to national prosperity and improvements in living standards. In the context of the influence that migration to Australia has had on the economy and society, the research evaluates conceptual and empirical productivity-migration linkages, including:

- comparisons of the productivity of migrants and non-migrants, and of different types of migrants, by using earnings as a measure of individual productivity
- the contribution of migrants to productivity growth by relating skills to productivity
- the relationship between 'connectedness' and productivity by looking at two underlying determinants of productivity—social capital and trade.

The research drew on several data sources, such as the 2011 Census and the Household, Income and Labour Dynamics in Australia (HILDA), as well as data provided by the Department:

- the Continuous Survey of Australia's Migrants (CSAM), which measures the labour market integration of recently arrived migrants in the Skill and Family streams
- the 2012 survey of subclass 457 employers and some 15,000 employees
- the 2008 survey of more than 20,000 Australian Working Holiday Makers.

Much of the data collected, created and used by the Department, including intelligence, commercial and personal information, contains information that must be protected and kept confidential. Information obtained by 'entrusted persons', which includes immigration and border protection workers in their official capacity, is **protected information** under the ABF Act, of which personal (including sensitive) and confidential, operational information is a subset. Part 6 of the ABF Act protects this information and controls its disclosure—that is, the exchange of information between departmental workers, and with other entities.ⁱⁱ

The disclosure of protected information must be in accordance not only with disclosure provisions in the ABF Act, but also the Privacy Act and other portfolio legislation if applicable. For example, there are additional obligations for **identifying information** (such as fingerprints, photographs or other measurements obtained by the Department for certain purposes) under Part 4A of the Migration Act and Division 5 of Part 2 of the Citizenship Act.

The release of information is also restricted if it is **security classified** under the Australian Government Protective Security Policy Framework.⁵ The framework is designed to ensure the safe and secure conduct of government business, including the safety of Commonwealth employees, clients, information and resources. This is essential to maintaining the confidence of the Australian public and international partners in government. The handling of information may also be subject to additional requirements, such as commercial agreements and international treaties.

In summary, departmental data may be protected under the umbrella of 'protected information' as defined by the ABF Act, limited in its use by the laws under which it was collected, kept confidential under privacy provisions, and have access restricted due to its security classification and/or international treaties.

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ⁱⁱ More information about the disclosure of information under the ABF Act can be found on the Australian Government Federal Register of Legislation (www.legislation.gov.au).

High-value datasets

The Department's trade, traveller and migrant datasets are highly-valued for social and economic analyses.

While efforts to improve quality and availability extend across its data holdings, the Department is aware that high-value data sets deserve particular attention. In the Department's view, high-value datasets are those that can be used to maximum effect for the benefit of Australia and its people. This has two main components: its potential application and its accessibility.

Trade, traveller and migrant datasets are the three core, high-value datasets that the Department manages. These datasets are of value to Government, the research sector and academia, the business sector, and the broader community. This includes but is not limited to supporting policy settings and operations relating to:

- the permanent, temporary and humanitarian migrant intakes
- border management, including law enforcement and national security matters
- international merchandise trade
- settlement, health, education, welfare and infrastructure services.

This data is used in conjunction with other indicators to provide insights into Australia's economic state (such as its labour force structure and international trade trends), cultural diversity and social cohesion, and Government revenue and expenditure.

The Department continues to enhance the value and **utility** of these datasets through several projects. For example, it is currently building a consolidated migrant database that, for the first time, will provide a combined view of migrant demographic, movement and visa application data. This will provide a resource for analysis of migrant visa pathways and post-migration movements as well as the basis for data linkage with external datasets.

It has also enhanced the **discoverability** of its data by publishing data in pivot tables on whole-of-government platforms wherever possible. Pivot tables are an easy-to-use data analysis tool that enables the user to reorganise, filter, group and summarise data by dragging and dropping variables into and out of a table. This interactive approach to data presentation helps users gain insights into Australia's demographic and economic trends. The Department also provides time series information (that is, providing information for several years in one pivot table).

1. International merchandise trade records

Customs data has been the primary source of Australian international merchandise trade statistics for over 100 years. Information is submitted to the Department by importers, exporters, shipping companies, airlines, freight forwarders or their agents, so that goods can be cleared for entry to, or export from, Australia. This includes assessing and collecting duty and other revenue payable on imported goods. The data includes information about:

- commodity classification, export goods type and description
- · port of loading and port of discharge
- country of origin and final destination
- intended date of export / date of arrival
- mode of transport and vessel or flight number
- quantity, weight, total value of goods and duty payment values.⁶

These records are compiled to derive merchandise trade statistics. Important in their own right as measures of the quantity and value of trade between Australia and the rest of the world, this data is also critical to compiling Australia's national accounts, such as Australia's Gross Domestic Product (GDP).⁷ Trade in goods data is also used to formulate international trade price indices and to validate other ABS statistical publications.

As one of the most widely used measures to gauge the health of the economy, it is difficult to overestimate the value of this data to Government, business and the broader community.

2. Traveller records

Australia is one of the very few countries that collect information on traveller departures from Australia as well as arrivals. The accurate capture of traveller flows is critical for generating accurate estimates of Australia's population and all the policy ramifications that flow from this.

Currently, overseas arrival and departure (OAD) data is derived by matching records generated by departmental systems to information provided by passengers at air and sea ports. Information from passengers is currently captured via paper-based cards; however to further automate border clearances, the Department is retiring these cards. Instead, information will be sourced through alternative means, such as re-using existing data, data matching and digital collection solutions.

The combined dataset has information on travellers':

- · name, date of birth, country of birth, citizenship and gender
- movement date, port and flight/vessel number
- passport and visa details
- reason for travel
- intended duration of stay and place of residence in Australia
- category of visit (for example, short-term visitor or long-term resident).

It is anonymised and published in partnership with the ABS, and used as the basis for calculating net overseas migration (NOM) estimates.

3. Visitor, migrant and citizenship records

The Department has detailed records of Australia's visitors, temporary residents, permanent migrants and people who acquired citizenship by application.

Visa and citizenship information contains demographic and biographic information relevant to the criteria they must meet to enter and stay in Australia. For example, those wishing to come to Australia to study (see also Box 5: Student visa processing, p14) are generally required to demonstrate enrolment in an Australian educational institution, sufficient funds for the period of stay and English language proficiency. Similarly, those wishing to work in Australia must show that they meet occupation, skill and English language requirements to fulfil Australian labour force needs.

This data complements traveller data, providing information on compositional changes to Australia's labour force. When migrant data is also combined with survey data or data held by other areas of government, it is a truly powerful resource. Datasets such as the Australian Census and Migrant Integrated Dataset (ACMID) can be used to investigate how different categories of migrants fare over time by analysing key measures of labour market integration, such as English proficiency, education and employment.

Similarly, in terms of social outcomes, this data can be used to map the geographic distribution of migrants in order to look for patterns of concentration and dispersal. This can be useful for examining the benefits of migration to urban and rural areas.

It can also support monitoring potential social and geographical polarisation through analyses of socio-economic measures, country of origin, period of stay in Australia, age, family composition or strength of transnational connections. These geographic and social patterns can shape a locale through demand for amenities and services, influencing the level of engagement with the broader community and civic society, and strengthen or undermine public understanding of other cultures and support for diversity.

Box 5: Student visa processing

Departmental data is critical to supporting and enhancing delivery of its services. Underpinned by its high-value datasets, the Department's digital transformation programme aims to make it easier for the public to access its services by removing inefficient paper and manual processes, simplifying regulation and providing digital contact channels.

The student visa assessment framework is one example of improving service delivery through innovative use of data. Risk assessments based on historical visa outcomes allow low risk students to be processed quickly and high risk students to be more thoroughly scrutinised.

Essentially, this involves assessing immigration risk as indicated by rates of visa refusals, cancellations and non-compliance with visa conditions. The exact formula and who it is applied to has changed over time in consultation with the education sector and other stakeholders. As of 1 July 2016, a new risk framework, based on the risk associated with the student's country of citizenship and immigration outcomes of an education provider's international students, will guide what evidence international students are required to provide in their visa application.

Since March 2012, this approach has supported sustainable growth of the international education sector by:

- increasing the competitiveness of Australia's student visa programme by reducing red tape
- facilitating efficient and timely processing of visa applications
- increasing the integrity of the student visa programme
- employing a simplified approach to visa processing, easily understood by international students, education providers, agents and departmental officers.

Opportunities and challenges

The report by the Department of the Prime Minister and Cabinet into public sector data management identifies barriers to data openness as restrictive legislative provisions, limited data analytic capabilities, poor data quality, variable data policies and a culture that does not support the widespread release of data.⁸

The Department's current focus is on enhancing data quality and data analytic capabilities. Enhancements in these two areas would provide significant opportunities to use the Department's data collections more efficiently and effectively, as well as to make high-value datasets more available.

Data quality

The Department is committed to continuous improvement of its data holdings and meeting the challenges of expanding data volumes and new sources and types of data.

According to the ABS Data Quality Framework, the measure of the quality of data is the degree to which it is 'fit for purpose'. This may involve some trade-offs, for example maintaining confidentiality at the expense of accessibility or reduced accuracy in favour of timeliness. In the Department's context, all efforts are made to ensure its data supports robust decision-making. The trade-off is that this transactional data is not wholly optimised for re-use for reporting, programme administration, research and policy evaluation. As a result, significant resources are dedicated to sourcing and verifying the data needed for such purposes.

More easily available information would benefit policy design and evaluation, help make more data publicly available and support risk management related to enterprise performance, perpetration of fraud and non-compliance with immigration and border protection laws. Data quality issues also limit the interoperability of data, in terms of linking both internal and external datasets. With this in mind, new systems across the public sector should be designed to not only meet operational needs but also facilitate policy analysis and strategic research.

Work to improve the quality of the Department's data is under way. In recent years the Department has implemented measures to improve the accuracy and completeness of data provided by frontline staff, clients and external parties through (see also Box 6: Import and export declarations, p16):

- regulatory provisions that require applications to be complete in order to be valid
- electronic forms designed to prevent lodgement if incomplete or containing invalid details
- acquiring personal and biometric data directly from source documents, such as passports
- infringements and sanctions for misleading, incorrect, fraudulent, incomplete data
- implementation of a real time, global, pre-decision quality control tool for records.

A number of data enhancement projects are also under way to:

- improve data standardisation through the development of data dictionaries, data entry
 protocols and training, simplification and automation of departmental processes, and
 replacing legacy systems with new integrated solutions
- consolidate a range of immigration and trade data
- improve enterprise search capabilities
- improve the consistent creation, storage, search, retrieval and destruction of records
- expand information validation functionality in online systems
- replace paper-based forms, such as passenger cards collected at air and sea ports, by sourcing information from automated passenger clearance systems (that is, SmartGate) and via data matching.

These initiatives will improve the quality of new and existing data holdings, but it is important to note that existing data holdings will continue to need resources for data cleansing for use in retrospective and time series studies.

Box 6: Import and export declarations

The system used by the Department to collect and process export and import information is known as the Integrated Cargo System (ICS). More than 99 per cent of all import and export declarations are submitted electronically to the Department. When a declaration is entered electronically into the ICS checks are applied to ensure that only valid codes are used (such as for the commodity, country and port) and that all mandatory information has been entered. Warning messages are sent to alert exporters, importers or agents of possible errors.

In an environment of self-regulation, these data checks help declarants be compliant with legislation. This allows most declarations to be processed without intervention, while ensuring compliance through monitoring and interception of cargo, and auditing of company records and practices on a risk assessment basis. Where evidence of non-compliance with legislation is identified, compliance can be enforced by imposing sanctions or fines, or by prosecution.

Improved data quality reduces barriers, and creates opportunities, to:

- publish more non-sensitive anonymised data
- publish data in a range of formats
- expand data sharing and linkage across agencies
- produce microdata to allow cross-sectional, longitudinal and joined up analyses
- reduce the impost on clients to provide information and re-establish identity and other details.

The Department is working on making **more data available in more formats**, optimised for discoverability. This includes a programme of work that would provide more interactive data (such as pivot tables), as well as providing **more longitudinal and joined-up data**. This would be supported by further streamlined approaches to meeting legislative requirements.

Possibilities include publishing datasets that join sponsoring business and migrant data, and linking business/migrant datasets with other employer datasets. For example, data on business performance, innovation and skill shortages could be supplemented with administrative data on skills of temporary and permanent migrant workers. This type of data linkage may enable unique analyses that explore the contribution of migrants to innovation and productivity in Australia, and inform visa policy settings.

Another possibility is to combine longitudinal data on all types of visa and citizenship lodgements and grants. This could include modules on visa pathways, international movements and immigration compliance outcomes. While maintaining anonymity, these visa and movement datasets could be joined to external datasets on economic outcomes and social indicators, in order to support analyses and policy development in the fields of migration and settlement planning.

The Department is also pursuing more **inter-agency data integration**, particularly between migration, health and education services data. The Department currently supports several inter-agency data linkage projects that join migrant data to taxation data (PITMID) and Census data (ACMID), including longitudinal projects such as the Australian Census Longitudinal Dataset (ACLD). Work is under way to link temporary resident data and movement datasets, and new projects are being considered as part of the Multi-Agency Data Integration Project. Led by the ABS in partnership with several agencies, this project aims to make more data publicly available through cost effective means, maximising the value of transactional data through data linkage and modelling techniques. ¹⁰

The Department is assessing the feasibility of providing an interactive and secure environment to give trusted non-government users access to unit record data and confidential microdata that can be used to create customised tables across data sets. Where possible, this initiative would draw on whole-of-government resources and expertise.

Increased data matching, data linkage and biometric holdings provide the opportunity **to reduce the impost on clients** of re-establishing identity and submitting other details more than once. Under a 'collect once, use many times' approach, data is anchored by a biometric and re-used rather than being collected on a transactional basis (that is, each time a client has an interaction with the Department).

Data analysis capabilities

New and evolving technologies, techniques and expertise present both challenges and opportunities for maximising the value of departmental data holdings. Improved diffusion of technology is the key to unlocking the benefits of these datasets.

The Department is continuously enhancing its **data analysis capabilities** to make the most of its expanding data holdings. In recent years the Department has adopted several capabilities as they emerged including:

- geospatial capabilities to assist in identifying risk patterns and trends
- social network capabilities to identify mala fide networks and behaviours by entities of concern
- visualisation capabilities to identify networks and linkages
- online analysis capabilities to identify web-enabled border threats
- risk profiling capabilities for identifying high risk travellers and visa and citizenship applicants.

The Department has several projects to improve and integrate capabilities in **data processing** power, storage capacity and analytic capabilities (see also Box 7: Inter-agency data analytics, p18). In 2014–15, \$10.3 million was invested in the Teradata Infrastructure Refresh project to provide a new, larger data warehousing environment with 60 per cent more storage capacity and faster processing. In May this year, a further \$99.2 million was allocated by the Government to consolidate a range of internal data and enhance automated risk profiling and threat identification capabilities.

New capabilities in tools, techniques and platforms will continue to be necessary in order to leverage the value of high volume and diverse types of data, particularly unstructured data. For example, while the Department has collected and used biometrics for many years to verify identity, it continues to explore capabilities to re-use biometric data to streamline and automate services.

Enhanced capabilities are needed to leverage new data sources. Data collection via mobile applications such as MyVEVO, which provides self-service options for clients 24/7, has expanded the number of times and range of data items sent and received. Data generated by the Internet of Things has the potential to become a high-value dataset for the Department in the context of data generated by 'smart' products in global value chains. ¹¹ Meanwhile, the Department is currently exploring the potential of expanded open source data analysis, such as the use of 'virtual data interpreters' that can collect, analyse and report on information from online sources.

New and evolving technologies provide opportunities to improve existing data, use data in new ways and expand access to data. For example, they can be employed to help improve the quality of new data, and to cleanse and transform it, including as it is extracted and used. There are opportunities to share departmental and whole-of-government techniques and technologies relating to data collection, data cleansing, statistical reporting, analytics, research and intelligence.

As technology improves, the ways in which it can be applied also expand. Real-time analytics, interactive data visualisation and modelling techniques can be put to greater use to optimise operations and predict outcomes. ¹² Machine-learning techniques may yield insight from new forms of data, such as multi-model datasets or automated mining of photos and videos. For example, the University of Queensland's Airports of the Future project has developed intelligent surveillance systems that use CCTV to automatically predict passenger delays and detect anomalous actions. ¹³

Technology can also make data accessible to a greater range of users, without compromising security or confidentiality. For example, virtual data laboratories allow trusted users to view and analyse microdata (but not download), with privacy-preserving analytics filtering results in real-time to protect privacy. ¹⁴ The implementation of these solutions requires the capability to rapidly experiment, prototype and integrate without compromising system security or stability.

The **scarcity of appropriate expertise** is a challenge to fully realising any benefits from new capabilities. This includes technical experts not only to mine and produce data, but also to analyse and draw policy implications. While the Department continues to recruit and train experts as needed, it also intends to leverage whole-of-government expertise, including through: the Whole-of-Government Data Analytics Centre of Excellence, which aims to build public sector analytics capabilities by sharing technical knowledge, skills and tools; ¹⁵ working in cross-agency teams to skill-share on projects as well as partnering with the private and academic sectors; and engaging with the newly established Data61 enterprise within the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to enhance public sector data publishing infrastructure.

Box 7: Inter-agency data analytics

Robust and reliable estimates of illegal activity are necessary to measure the integrity of public sector programmes and target compliance activities. However, developing accurate estimates can be problematic given the covert nature of these activities. The Department is using data analytics on composite databases to tackle the problem of estimating illegal activity in two areas: illegal tobacco imports and temporary migrants working in breach of their visa conditions.

To estimate the quantity of illicit tobacco in Australia, analysts from the Department, the Australian Taxation Office (ATO) and AUSTRAC are working together to match disparate datasets and undertake quantitative analysis. The Department is also working with the ATO to use data and capabilities in both agencies to manage the risk of illegal employment.

This was made possible by an amendment to the *Taxation Administration Act 1953* in 2015, which allows the Department to access taxation data in a broader range of circumstances than previously allowed. Specifically, the amendment enables the Department to access taxation data for the purpose of performing its legislated functions, such as detecting migrants working in Australia illegally.

Conclusion

The Department has a broad range of responsibilities and operates in a complex and rapidly changing environment. It manages extensive, varied and high-volume data sets, governed by numerous legislative provisions to protect personal and sensitive information. These data sets are protected through legislation, cyber security measures and a professional integrity framework, given it is a significant target for criminal groups who seek to infiltrate and corrupt departmental systems and people.

These data holdings are a valuable asset for economic and social analyses. Statistical reports and anonymised data are published online, shared with trusted agencies and researchers, and disclosed to individuals under freedom of information provisions.

The digital age has heralded expansions in data collection methods, types of information and expectations for data and real-time analytics. The Department is committed to improving its data analytic capabilities and the availability of its data for use by the public, industry and government agencies. Wherever possible, the Department will seek cost-effective ways to do so.

The challenges outlined in this submission are not unique to the Department and many of the opportunities highlighted rely on inter-agency collaboration. The Department is committed to contributing to the development of whole-of-government data resources for improved data use and release.

¹ Department of Immigration and Border Protection, Commonwealth of Australia (2014), *The Immigration and Border Protection portfolio deregulation annual report 2014*, available at: https://www.border.gov.au/ReportsandPublications/Documents/annual-reports/deregulation-annual-report-2014.pdf (accessed June 2016).

² Australian Government (2015), *Australian Government Public Data Statement*, available at: https://www.dpmc.gov.au/sites/default/files/publications/aust_govt_public_data_policy_statement_1.pdf (accessed May 2016).

³ Department of Infrastructure and Transport, Commonwealth of Australia (2013), *State of Australian Cities 2013*, available at: https://infrastructure.gov.au/infrastructure/pab/ (accessed June 2016).

June 2016).

⁴ Parham, D., To, H., Ratna, N., Regan, S., Grafton, Q., Australian National University (2015), *Migration and Productivity in Australia*, available at:

https://crawford.anu.edu.au/files/uploads/crawford01 cap anu edu au/2015-12/dibp_final_report.pdf (accessed June 2016).

⁵ Attorney-General's Department, Commonwealth of Australia (May 2016), *The Protective Security Policy Framework (PSPF)*, available at:

https://www.protectivesecurity.gov.au/Pages/default.aspx (accessed June 2016).

⁶ Australian Bureau of Statistics, Commonwealth of Australia (November 2015), *5489.0* – *International Merchandise Trade, Australia: Concepts, Sources and Methods, 2015*, available at: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/5489.0~2015~Main%20Features~DIBP%20Data~10017 (accessed May 2016).

Australian Bureau of Statistics, Commonwealth of Australia (March 2016), 5206.0 – Australian National Accounts: National income, expenditure and product, Dec 2015, available at: http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/5206.0Explanatory%20Notes1Dec%202015 ?OpenDocument (accessed May 2016).

⁸ Department of the Prime Minister and Cabinet, Commonwealth Government (2015), *Public Sector Data Management*, available at:

https://www.dpmc.gov.au/sites/default/files/publications/public_sector_data_mgt_project.pdf (accessed April 2016).

⁹ Australian Bureau of Statistics, Commonwealth of Australia (November 2015), *5489.0* – *International Merchandise Trade, Australia: Concepts, Sources and Methods, 2015*, available at: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/5489.0~2015~Main%20Features~DIBP%20Data~10017 (accessed May 2016).

¹¹ Heppelmann, J. McKinsey & Company (December 2014), *How the Internet of Things could transform the value chain*, available at: http://www.mckinsey.com/industries/high-tech/our-insights/how-the-internet-of-things-could-transform-the-value-chain (accessed May 2016).

¹² See, for example, Data61, Commonwealth Scientific and Industrial Research Organisation (2016), *Optimising supply chains: advanced transport analytics*, available at: http://www.csiro.au/en/Research/D61/Areas/Data-for-decisions/Supply-chains/Timely-tools-for-transport (accessed June 2016).

¹³ Airports of the Future project, Queensland University of Technology (2013), *Intelligent surveillance*, available at: http://www.airportsofthefuture.qut.edu.au/overview/intelligents.jsp (accessed June 2016).

¹⁴ Data61, Commonwealth Scientific and Industrial Research Organisation (2016), *Big data and analytics: introducing privacy-preserving analytics*, available at: http://www.csiro.au/en/Research/D61/Areas/Big-data-and-analytics/Privacy-Confidential-data (accessed June 2016).

¹⁵ Department of Finance, Commonwealth of Australia (2008), *Big Data*, available at: http://www.finance.gov.au/archive/big-data/ (accessed May 2016).

¹⁰ Australian Bureau of Statistics, Commonwealth of Australia (February 2016), 1015.0 – Information paper: Transforming Statistics for the Future, available at: http://www.abs.gov.au/ausstats/abs@.nsf/be4aa82cd8cf7f07ca2570d60018da27/5eaa695de4bc6 1d1ca257f4c00170b7f!OpenDocument (accessed May 2016).



Attachment A –Legislation

- Aliens Act Repeal Act 1984
- Australian Border Force Act 2015
- Australian Citizenship Act 2007
- Australian Citizenship Act (Transitionals and Consequentials) Act 2007
- Commerce (Trade Descriptions) Act 1905
- Customs Act 1901, other than Part XVB and Part XVC
- Customs Licensing Charges Act 1997
- Customs Securities (Penalties) Act 1981
- Customs Tariff Act 1995
- Customs (Tariff Concession System Validations) Act 1999
- Customs Undertakings (Penalties) Act 1981
- Immigration (Guardianship of Children) Act 1946
- Import Processing Charges Act 2001
- Import Processing Charges (Amendment and Repeal) Act 2002
- Maritime Powers Act 2013
- Migration Act 1958
- Migration Agents Registration Application Charge Act 1997
- Migration (Health Services) Charge Act 1991
- Migration (Sponsorship Fees) Act 2007
- Migration (Visa Application) Charge Act 1997
- Passenger Movement Charge Act 1978
- Passenger Movement Charge Collection Act 1978



Attachment B – Published data and statistical reports

Dataset	Description	
Data.gov.au		
Overseas Arrivals and Departures	Overseas Arrivals and Departures (OAD) data refers to the arrival and departure of Australian residents or overseas visitors, through Australian airports and sea ports, which have been recorded on incoming or outgoing passenger cards.	
The Longitudinal Survey of Immigrants to Australia (LSIA) – labour force subset	The aim of LSIA was to provide government and other agencies with reliable data to monitor and improve immigration and settlement policies, programs and services. Survey respondents were selected from the administrative Settlement Database and followed over time. Responses were analysed to assist research on a range of topics including migration experience, use of support services, education and qualifications, language, employment, health, housing, income and finances, perceptions and demographics.	
Continuous Survey of Australia's Migrants, 2009 to 2011	The surveys collect data on newly-arrived Family and Skill migrants, and their experiences in the Australian labour market, issues regarding housing satisfaction and affordability, and their access to and use of community and government services.	
Temporary Work (Skilled) visa (subclass 457) Programme	Statistical data is available on the subclass 457 visa programme, with information on visa grants and the number of visa holders in Australia.	
Border.gov.au		
Statistical reports		
Visitor visa report	The Visitor visa report is a quarterly publication that provides data on Visitor visa lodgements, grants, processing times, arrivals and visa holders in Australia.	

Modified Non-Return Rate report	The Modified Non-Return Rate (MNRR) report is a quarterly publication which is used as an indicator of Visitor visa compliance.
Working Holiday and Work and Holiday Visa report	The Working Holiday Maker report is a bi-annual report that provides data on the Working Holiday and Work and Holiday visa streams.
Student visa and Temporary Graduate visa programme reports	These reports include quarterly and annual trends reports on student and temporary graduate visas, as well as Student visa application pivot tables.
Subclass 457 quarterly and annual reports	These reports provide statistics on the subclass 457 visa programme, including visa grants, the number of visa holders in Australia, location of the nominated position, nominated occupation, nominated salary and country of citizenship.
Significant Investor visa statistics	Key statistics on Expressions of Interest (EOIs), applications and grants for the Significant Investor visa.
Report on Migration Programme	Reports on the permanent Migration Programme outcomes against planning levels since programme year 2009–10.
Australia's Migration Trends reports	This annual report contains comparative statistics on migration outcomes and characteristics of migrants over recent years, including for permanent, temporary and humanitarian programmes. It also reports on visa non-compliance, net overseas migration, labour market outcomes of migrants and settlement issues.
Humanitarian programme statistics	Reports on Australia's Humanitarian Programme including the onshore and offshore humanitarian programmes, asylum trends and ministerial interventions.
Net Overseas Migration statistics	Net Overseas Migration (NOM) statistical publications including NOM forecasts, regional NOM estimates and historical estimates.
State and territory migration summary report	This publication commenced reporting on a quarterly basis from December 2013. The report provides year-to-date data on permanent and temporary migration by state/territory and statistical division where available.
Migration to Australia's states and territories	This annual publication is a statistical summary of permanent and temporary migration activity to each of the state and territories. It also includes information on population growth, relevant data from the Census and maps detailing the distribution of recent migrants.
Stock of temporary entrants and New Zealand citizens reports	This is a quarterly report on the number and composition of temporary entrants and New Zealand citizens present in Australia.

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Migration agent activity reports and statistics	Migration agent activity reports and statistics on the migration advice industry in Australia, including the number of agents registered, complaints and sanction decisions, appeals to the Administrative Appeals Tribunal, litigation and investigations by the Department.
Australian citizenship test statistics	The Australian Citizenship Test Snapshot is an annual publication that provides data on citizenship tests. It includes the number of applicants who have sat the citizenship test, pass rates and country of birth analysis.
Australian citizenship statistics	This report has statistics on the number of people who have become Australian citizens and their country of origin.
Immigration detention statistics	This report provides statistics on the number of detainees in immigration detention.
Illegal maritime arrivals on bridging E visa	This report has statistics on illegal maritime arrivals living in the community on Bridging E visas (BVEs). This includes number of BVE grants, subsequent substantive visa grants, number of departures and locations of BVE holders.
Cancellation statistics	Information is provided on visa cancellations and refusals for key cohorts since 2010–11.
Historical migration statistics	The Historical Migration Statistics report brings together migration statistics from 1945 through to the present day. Material from the Australian Bureau of Statistics on population statistics is also included.
Country Profiles	Country profiles bring together a whole of country perspective on permanent and temporary migrant inflows and outflows and provide relevant information, including key statistical data, on the different types of visa categories. The country profiles also include key findings relating to emigration from Australia as well as migrants' occupation and other demographic characteristics. Collectively, the country profiles provide information for 14 migrant source countries.
Assumed identities authorisations and use	This report has statistics on the use of assumed identities by the former Australian Customs and Border Protection Service, as required under <i>Crimes Act 1914</i> .
Baggage examinations	This report has statistics on the total number of baggage examinations conducted at Australian international airports, and the number of examinations resulting in a detection.
Passenger experience	This publication reports on survey results about international travellers' experiences at major Australian airports.

Enhanced trade solutions (ETS) program	This report provides an evaluation of the ETS proposal to date.		
Time Release Study	The Department has undertaken an annual Time Release Study (TRS) since 2007. TRS is a method endorsed by the World Customs Organization (WCO) for assessing a country's trade facilitation performance. It does so by measuring the average time from arrival of goods at the border until permission is given for entry.		
Operational Sovereign Borders (OSB) operational updates	These operational updates are about how the Department is combatting people smuggling and protecting Australia's borders.		
Character cancellations and refusals	This publication provides a graphical representation of visa cancellations for key cohorts.		
FOI Disclosure Logs	The disclosure logs are provided as required by the <i>Freedom of Information Act 1982</i> , which requires agencies to publish information in a disclosure log within 10 working days after the freedom of information applicant was 'given access' to a document.		
Research papers	Research papers		
Obtaining a better understanding of the Student and Skilled Graduate visa programs (2010)	This research report provides an analysis of the student visa program with particular emphasis on the client perspective, obtained through a survey of about 6000 students, graduates and partners.		
Filling the gaps – Findings from the 2012 survey of subclass 457 employers and employees	The main aims of the survey, conducted in 2012, were to examine the effectiveness of the subclass 457 visa programme in meeting employers' skilled labour market needs and to examine the broader Australian experiences of subclass 457 visa holders and their specific experiences with the programme.		
A sociological investigation of illegal work in Australia (2013)	This research, conducted by Hall & Partners—Open Mind, is a sociological investigation of people working in breach of their visa conditions and their employers, which identifies the psychological, situational and behavioural drivers that facilitate illegal work.		
Skilled Migration Selection Policies: Recent Australian Reforms (2012)	This article, published in Migration Policy Practice (Vol. 1, No. 1, 2011), gives a brief overview of skilled migration in Australia, recent reforms to skilled migration selection and presents evidence on the impact of these reforms to the labour market.		
How much do migrants account for the unexpected rise in the labour force participation rate in Australia over the past decade?	This paper decomposes the change in the labour force participation rate between 2000 and 2010 to examine the separate contributions of age, gender and birthplace.		

Competing for Skills: Migration Policies and Trends in New Zealand and Australia	The aim of this study was to compare skilled migration policies in New Zealand and Australia from 2004–05 to 2008–09.
Immigration, Labour Supply and Per Capita Gross Domestic Product: Australia 2010-2050 (2010)	This report examines whether some (approximate) level of immigration stands out as having a superior balance of outcomes for the productivity of Australia's workforce.
Irregular migration and border research	This includes a series of occasional papers that seek to identify and address knowledge gaps in complex irregular migration and border management issues.
Continuous Survey of Australia's Migrants	This provides survey information and results that track and document the outcomes of newly-arrived family and skilled migrants from 2009 to 2011.
Population Distribution Effects of Migration in Australia (March 2011)	This report provides a detailed statistical analysis of the internal migration patterns of Australia-born and overseas-born Australians with particular focus on the 2001–2006 period.
Citizenship in Australia (2011)	The paper provides characteristics of those who have acquired Australian citizenship, discusses the take-up rate of citizenship among different migrant groups and explores the relationship between the acquisition of citizenship and labour market integration.
Reports	
Corporate Plans	The Corporate Plan outlines the Department's priorities to deliver on strategic objectives, how it will be organised, how it will support and develop its people, how it will manage risks and plan for its required capabilities.
Annual reports and budgets	Annual reports give details of annual programme operations and finances. The portfolio budgets give details of budget finances for each year.
Corporate reports	These include reports to parliament on managed deliveries, regulatory reform and grants awarded by the Department.
Ombudsman assessments	A list of responses to Ombudsman's assessments made under Section 486O of the <i>Migration Act 1958</i> .
Senate orders	An indexed list of file titles, produced every six months, for tabling before parliament. The production of the list is intended to make the operations of government more transparent to the Australian public.