

# The Australian Public Service Big Data Strategy

Improved understanding through enhanced data-analytics capability

AIIA response

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## About AIIA

The Australian Information Industry Association (AIIA) is the peak national body representing Australia's information technology and communications (ICT) industry. Since establishing 35 years ago, the AIIA has pursued activities aimed to stimulate and grow the ICT industry, to create a favourable business environment for our members and to contribute to the economic imperatives of our nation. *Our goal is to "create a world class information, communications and technology industry delivering productivity, innovation and leadership for Australia".*

We represent over 400 member organisations nationally including hardware, software, telecommunications, ICT service and professional services companies. Our membership includes global brands such as Apple, EMC, Google, HP, IBM, Intel, Microsoft, PWC, Deloitte, EY, and Oracle; international companies including Telstra; national companies including Data#3, SMS Management and Technology, Technology One and Oakton Limited; and a large number of ICT SME's.

We are pleased to provide this response to the Australian Public Service Big Data Strategy.

## Overview comments

The AIIA strongly supports the intent of the Big Data Strategy in particular that government needs to leverage the opportunity of unlocking the significant economic value of the data it collects.

Analysis by the McKinsey Global Institute estimates that open data has the potential to enable more than \$3 trillion in additional value annually across seven key domains: education, transportation, consumer products, electricity, oil and gas, health care and consumer finance.<sup>1</sup>

By replacing traditional and intuitive approaches with data driven processes, open data can drive productivity; improve the efficiency and effectiveness of processes; inform the development of new and innovative products and services (that can equally be delivered by the non-government sectors); and create 'new' value for individual consumers and citizens.

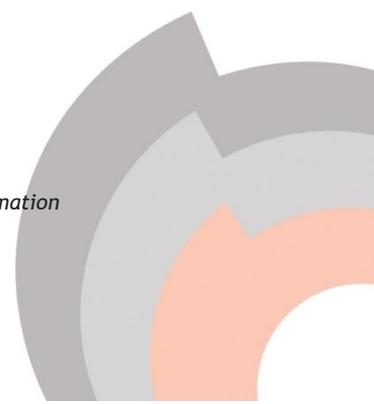
In the market, open data can foster competitiveness, enable collaboration among business, government and individuals and drive innovation. Government has a key role in setting the tone for open data both by making its own data available and shaping the policy environment.

Data driven analytics enables government to develop rich, evidence based insights to inform future policy, compliance models and service delivery options. Policies that are implemented in combination with a view to solid data analytics means policies can be evaluated sooner rather than when it is too late to make a material difference. As circumstances change, programs can be adjusted in real time, maximizing the effectiveness of feedback loops and program effectiveness. This saves time and costs.

In the area of service delivery, data analytics enables targeting of specific services to specific customer segments and ultimately, to specific individuals. We are moving away from 'citizen-centric services' designed around cohorts of individuals, e.g. low income families, people with a disability etc. to individualisation of services. Using sophisticated technology platforms and tools government services can cost-effectively become highly tailored to meet particular citizen needs.

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<sup>1</sup> McKinsey Global Institute (2013) *Open Data: Unlocking innovation and performance with liquid information*



These overview points were borne out in AIIA's recent Navigating Analytics Summit in which four key areas of focus emerged:

1. *Convergence of trends which present significant opportunity* - data is a critical resource in the modern and increasingly digitised society. The convergence of cloud computing, low cost sensors, mobility and big data and enterprise analytic capability provide the opportunity to leverage and make sense of large and previously unmanageable volumes of data - including from divergent sources.
2. *Benefits from data analytics* - the potential benefits from data analytics are significant and wide ranging, and only limited by our 'imagination' to ask the right questions and openness to apply data in new and innovative ways. Incremental business changes driven by informed, evidenced based decisions can deliver efficiencies that reap very substantial cost savings.
3. *Adoption and application of data analytics* - integrating data analytic capability effectively into business operations and decision making, recognising that this may be disruptive and require the business to operate differently. 'Acting' on the insights provided by data analytics is critical.
4. *Challenges to application and adoption of data analytics* - most critical of which are appropriate skills development and buy-in by decision makers both in terms of return on investment and implications for business operations and culture.

The Summit identified that big data and analytics is not a technology consideration; it is about using technology tools to access and manipulate data to address real world and business questions. The estimate that only some 5% of data available is used to make informed decisions highlights the richness of the potential opportunity to use the data we have more effectively.

## Specific comments

### Vision

The current vision limits the use of big data by Government to '*drive efficiency, collaboration and innovation in the public sector*'. While this Strategy is specific to the public service, it also explicitly recognises that the data it holds is a national asset and it commits to an open data policy. With this in mind AIIA believes the vision needs to be both broader and more ambitious. The vision needs to drive outcomes both across the public sector as well as the economy generally. This is consistent with the narrative earlier in the Strategy that identifies the potential economic value of big data.

The paragraphs under '*the vision supports the following capabilities*' could be strengthened by framing positively in terms of 'what success looks like' - short, sharp outcome targets will amplify the vision.

### Big Data Principles

AIIA's view is that the Principles need to be clear and decisive. They must provide a positive and enabling framework that supports Agencies develop and execute an open data and data analytics agenda. The following themes need to be captured:

- The role of big data and analytics in driving agency and economy wide value and innovation; this includes the role of government in making data available and usable/readable and ensuring its curation to maintain ongoing data integrity;



- Appropriate use of data, customer/client value in return for the use of their data, privacy and transparency;
- The value of cross agency and cross sector and industry collaboration; the opportunities presented by converging divergent sets of data; and that government can be a producer and facilitator of innovative data driven outcomes;
- Building the right skills sets, leveraging appropriate tools and avoiding duplication, i.e government does not need to do everything itself;
- Ensuring the outcomes of big data and analytics are reflected back into the operations and services provided by Agencies in the normal course of their business, i.e the shift to evidence based planning, decision making, service development and execution; and
- Measurement of outcomes relative to investment.

The following specific comments are made.

#### Principle 1: Data is a national asset

- It is unclear how sharing data '*in accordance with the Declaration of Open government, and other legislative requirements*' will enhance the culture of the engagement.
- This principle could be better demonstrated by linking to the productivity, efficiency, competitiveness and growth benefits that can be derived from the use of big data and data analytics.
- The application and sharing of big data and analytics to achieve these (and other) public policy and national objectives is critical to recognising the value of the data held by government. This should be articulated in the context of this principle.

#### Principle 2: Privacy by Design

- AllA supports this principle

#### Principle 3: Data integrity and the transparency of processes

- This principle needs to include a focus on ensuring open data sets are maintained and curated, i.e. refreshed and managed on an ongoing basis. This requirement needs to be built into the open data programs of agencies. The current language implies that making the data available is itself sufficient.
- The principle should also include the need for agencies to make data available in forms that are 'readable' and ready for use.

#### Principle 4: Skills, resources and capabilities will be shared

- This principle should commit to the development of appropriate skill capability in the areas of big data, open data and data analytics within the public sector. The Strategy broadly identifies the need for new and specific types of skills to support better extraction, use and analysis of big data. The Government will need to ensure that it contributes to the development of these specialist skill sets.
- Recognition of options to draw in remote specialist skills is necessary given the nature of our highly mobile workforce and current skill shortages in this area.

#### Principle 5: Collaboration with industry and academia

- Notwithstanding Principle 6, this principle (5) is too narrow. The definition of collaboration with industry and academia should include making data available broadly so that, for example, industry and academia can use the data to solve specific issues or problems posed by government and/or to create products and services of broader citizen or business value.
- While the principle refers to collaborating with third party organisations '*on big data analytics*' this could be strengthened by drawing the links



between collaboration, innovation and the scope of benefits to be derived beyond what could be achieved by Government alone.

Principle 6:

- Principle 6 should be reworked to focus on open data 'by default'.

## Actions

The Actions as proposed do not adequately contextualise the use and value of big data and data analytics and as a result, do not build a compelling case for agencies to adopt the agenda.

In AIIA's view a specific Action that focuses on driving awareness of the value of big data and analytics to the business of government, productivity and the economy more broadly is required. The opportunity (and challenge) to do business differently and from an evidence base needs to be emphasised with a focus on the tools and techniques that are available now to make informed policy, service, compliance, budget, strategic etc. decisions.

The value of making data available to the market also needs to be emphasised, particularly the opportunity to drive innovation by third parties developing new products and services to benefit citizens, business and government. The market can bring new and different insights and capability and this needs to be exploited.

Agencies need to be prepared for the cultural change that the use of data and analytics will drive. They need to be prepared for and supported to shift from a reactive break-fix mentality to evidenced based decision making, policy and service development. Traditional reactive approaches need to be replaced by predictive-preventive modes of operation.

As identified at the AIIA Navigating Analytics Summit adoption of data analytics needs to focus on three key elements:

- *Imagine it* - build a culture that infuses analytics everywhere
- *Realise it* - invest in a big data and analytics platform
- *Trust it* - be proactive about privacy, security and governance

Agencies need to understand the different types of analytics techniques (e.g. diagnostic, predictive, prescriptive etc.), how these are applied to get the best results and in what circumstances. They need to understand how they mature their use of data analytics within their organisations and the implications in terms of the development of and transition to, new business models. Visualisation techniques as a means to improve the accessibility and understanding of data analytics and to make it 'meaningful' to the organisation must be considered.

Development of case studies, including from the private sector are critical to demonstrating impact and benefits and to share learnings and experiences. Examples of quantifiable benefits are critical, including advice regarding the need for measurement frameworks that enable outcomes and benefits to be measured, monitored and assessed relative to investment.

The availability of tools and expertise in the market and the opportunity for agencies to leverage these rather than build their own needs to be emphasised to prevent duplication of effort and unnecessary redevelopment of existing capability.

The development or improvement of products and services derived from data analytics must deliver value to the customers/clients whose data is being used (albeit in aggregate and anonymously). Agencies need to be respectful and accountable for how they use data, what they use it for and what they ultimately



deliver. This is necessary to build and maintain a trusted environment in which the data of individuals can be used.

Leadership across Government is imperative. The current Strategy refers to 'pilot projects'. AIIA's view is that this is an unnecessarily slow and cautious approach. We are concerned that this will delay agencies transitioning to the effective use of data to drive their business. This risks agencies being out of step with their peers overseas and in the private sector.

AIIA encourages the Government to support the development of low cost, agile prototype data analytic capabilities as a way to encourage agencies to start leveraging the capability immediately. Agencies should be encouraged and supported to address critical business challenges where greatest impact can be achieved.

To drive innovation and encourage agencies to use their big data, AIIA believes Government could use the approach adopted in some state jurisdictions and private organisations and invite people/ organisations to participate in competitions, 'hackathons' and 'scrums' to develop innovative new products and services from the data available, including in combination with other publically available data.

Measurement of outcomes, impact and benefits derived from big data and data analytics must be included in the Strategy. Agencies need to incorporate this capability from the outset and not as an afterthought.

In addition to the above comments, AIIA would make the following comments related to the Actions outlined in the Strategy.

#### Action 1: Develop big data better practice guidance

- The guidance proposed needs to emphasis the value and benefits to be derived from big data and data analytics and include a focus on productivity improvements, economic growth and improved efficiency.
- It needs to provide guidance to ensure the 'right questions' are asked to optimise the use of big data analytics and to ensure efforts are appropriately focussed.
- Case studies from the private sector will provide valuable insights and learnings. This should include identification of challenges, risks, opportunities and lessons learned. Reference to quantifiable benefits could be used to demonstrate the scope and scale of impact and benefits.
- The guidance needs to support agencies understand the data they have, what is available more broadly and how it can be used. Agencies need to be encouraged to use data to drive innovation.

#### Action 2: Identify and report on barriers to big data analytics

- This action should also include specific reference to risk and issue mitigation strategies based on learnings from the private sector. This is important to ensure a risk averse approach is avoided and to give agencies confidence that risk can be mitigated and issues resolved.

#### Actions 3: Enhance skills and experience in big data analysis

- It is unclear why a 'pilot' approach is being adopted. This delays agencies moving forward as they watch and wait the outcome of a limited project. It is also unclear how such a pilot approach relates to skill development. This action should focus on ensuring the development, recruitment or procurement of the skills needed to move the big data agenda forward. Public sector adoption of big data needs to be more proactive. It should commit to investing in developing and/or securing the skills required.



#### Action 4: Develop a guide to responsible data analytics

- It needs to be clear that the use of big data and analytics is *not* the same as the traditional use of data sets for statistical purposes. Big data analytics is by definition dynamic. AllIA is concerned that simply referring agencies to existing 'guides' and services (such as the National Statistical Service and the Cross Portfolio Data Integration Oversight Board) will stifle the opportunities presented by data analytics and limit its ability to be optimised by agencies. AllIA recommends that an initial Action must include a review of these current frameworks to assess their relevance and suitability to application in a big data analytics context.

#### Action 5: Develop information asset registers

- This Action needs to include development of a standardised approach/format for Asset Registers including:
  - clarity regarding the scope of data that should be included, including the expectation that there should be limited exclusions to data being included in the register;
  - descriptions of the key characteristics of data sets to assist third parties understand the scope and nature of the data available
  - the currency of the data
  - potential defects or deficiencies in the data.

#### Action 6: Actively monitor technical advances in big data analytics

- While AllIA thinks it is important to stay current with technical advances, it is important that big data analytics is not perceived as a technology issue. As indicated above and in the point below, there is a range of higher priority actions that need to be incorporated into the Strategy. Our view is that this particular Action is implicit in the adoption of a big data and analytics agenda.

In addition to the above AllIA strongly recommends that the Strategy include:

- an implementation timeframe;
- key milestones;
- a measurement framework;
- Key Performance Indicators that drive the effective use and application of big data analytics.

## Conclusion

AllIA applauds the Government's initiative to develop a Big Data Strategy. To be effective agencies will require clear guidance and support to optimise the big data and analytics capability available and apply it to their data and business.

Big data and analytics is not about adopting a technology solution. It is about leveraging tools that enable organisations to operate more effectively through making informed decisions and where needed, in real time. It requires cultural acceptance of the change that use of analytics drives across organisations and of the need to be agile and proactive rather than retrospective and reactive. This requires a fundamental shift in the mind set of organisations. This insight is critical to the success of the Government's big data and analytics agenda articulated in the Strategy.

