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Submission

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Executive Summary

This discussion paper has been developed by Azcende as a direct response to the Australian Government's Productivity Commission public inquiry regarding data availability and use.

We will cover:

- The value in government data
- Industry 4.0 and repurposing assets to maximise value
- Data driven decision-making and innovation

We propose:

- The systemisation and classification of assets
- Centres of excellence on local data and citizen data science capabilities at all levels of government
- That government look at 'hothousing' intra-departmental data initiatives to reduce uncertainty, increase transparency and reward innovation.

About Azcende

Azcende is a venture capital firm that seeks to change the world through the impact of its investments. By identifying alternative markets to invest in and then supplying funding, Azcende can put poorly monetised assets and services to better use, delivering higher returns for investors and the public. In fostering urban innovation to increase revenue and improve the efficiency of asset utilisation, Azcende helps government and industry solve tomorrow's social, environmental and economic challenges.

Urban innovation is the process of redeploying existing assets and services to better meet market demands, unlocking greater value for the public, industry and government. Our fund provides the opportunity to invest in an actively managed portfolio of urban-innovation assets that deliver a highly positive economic, social and environmental impact.

Purpose of the document

Data generation and usability has seen extraordinary growth due to the digitisation of data collection, storage and use. The community at large has benefited significantly from these advances; however, the asset that is data is not being maximised.

This paper will outline the ways that data can create value, Industry 4.0 considerations for the Australian government, how data driven decision-making can assist the government with sharing and releasing data – allowing opportunities to create value for individuals, businesses and in turn the government – and a call to action to accelerate innovation.

The value in government data

Organisations across the public and private sectors have begun to release and share vast amounts of information (structured and unstructured) in recent years, and the trend is only accelerating. Yet while some information is easily accessible, many data sources are not available as they are held in paper or microfiche format, or simply because organisations haven't made them available.

Some of this data may be free or come at a cost. However, business and industry are making more information public; we assert that government has a critical role in unlocking the economic potential of data.

A recent McKinsey report, **Open data: Unlocking innovation and performance with liquid information**¹, identified more than \$3 trillion in economic value globally that could be generated each year in seven domains through increasingly “liquid” information that is machine readable, accessible to a broad audience at little or no cost, and capable of being shared and distributed. These sources of value include new or increased revenue, savings, and economic surplus that flow from the insights provided by data as diverse as census demographics, traffic data, crop yield, procurement information, contracts, and information on product recalls.

Sitting at the nexus of key stakeholders—citizens, businesses, and nongovernmental organizations (NGOs)—government is ideally positioned to extract value from data and to help others do the same.

Government needs to consider how to improve the availability and use of public and private sector data in the framework of productivity, skills growth and asset optimisation.

Our particular interest is in the systemisation and classification of physical and digital assets (Assets) especially:

- Improvement in the usage of Assets
- Identification of alternative use of Assets
- Augmentation of Assets

¹ <http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/open-data-unlocking-innovation-and-performance-with-liquid-information>



Amplifying value from government Assets is highly desirable and attractive. Australia could reimagine intractable issues like housing affordability, urban sprawl, resource allocation and job growth.

We are operating in a new industrial age

Industry 4.0 presents the fourth step in the industrial and technological revolution. The term refers to cyber systems monitoring physical processes and making decentralised decisions, which stems from the rapid pace of digitisation in industry today. It was initially developed by the German government to create a coherent policy framework to maintain Germany's industrial competitiveness.

In order for a system to act as Industry 4.0 it must include²:

- Interoperability: technology and individuals that communicate and connect with each other.
- Information transparency: systems create a second virtual copy of the physical world through sensor data in order to contextualise information.
- Technical assistance: both the ability of the systems to support humans in making decisions and solving problems, and the ability to assist humans with tasks considered too difficult or unsafe.
- Decentralised decision making: ability of cyber-physical systems to make simple decisions and become as autonomous as possible. (Forbes)

For Australia to grow, the government's data strategy should address interoperability, transparency, technical systems ability and decentralised decision making in partnership with industry.

Prime Minister Turnbull announced a special taskforce to connect Australian industry to German and US industrial leaders³ in Hanover in early 2015. The AFR has reported that "for countries whose commitment to manufacturing has not been as strong as Germany's, such as Britain, Industry 4.0 could require governments to step in – an idea out of favour in Australia."⁴

Azcende supports the government's view of not stepping in where industry is capable of developing and driving a solution. We believe that the Australian government can benefit from the Industry 4.0 framework as it develops policy for this phase of the industrial evolution which encompasses Internet of Things, Internet of Services, Industrial Internet, Advanced Manufacturing and Smart Factory.

Combining the power of Australia's success in globalisation with Industry 4.0 is another such opportunity and benefit. The race between platform players in technology and efficiency in infrastructure means that SMEs and export businesses can compete in a global market and deliver new or existing services and products to new markets. This in turns enables the Australian workforce to develop competitive skill sets.

Given the pace of change in data, machine learning and artificial intelligence, it can be difficult to develop essentially 'short term' policy to harness economic value. Policy can focus on developing a vision and focus on where capital needs to be deployed

² Forbes – Industry 4.0: <http://www.forbes.com/sites/bernardmarr/2016/06/20/what-everyone-must-know-about-industry-4-0/#5276e94a4e3b>

³ <https://www.aigroup.com.au/policy-and-research/mediacentre/releases/Odb37b24-ab1c-e611-80ce-0050568007a5/>

⁴ <http://www.afr.com/technology/siemens-and-germanys-industry-40-revolution-20150415-1mlfgs#ixzz4S270ZCSz>



Economic policy rests on a clear idea of what the state and business should do or leave to others. A degree of openness and collaboration with industry and investors are essential for successful policy in the area of data, technology and innovation. We recognize that getting the regulatory framework right and adapting it to the needs of different interests will present its own sets of challenges and opportunities.

Data driven decision making

The recent PwC report, Big Decisions, states that “61% of Australian organisations admitted that their decision making process is only ‘somewhat’ guided by data; 39% of Australian organisations use analytics tools to ‘look back’ and discover what went wrong versus only 5% use data and analytics to understand what actions should be taken in the future.”⁵

The benefits of making government data available in electronic formats is that it helps public, private and non-profit sectors to understand true local market conditions, and therefore to make smart local choices not based on global benchmarking which may be inappropriate and formulate policy at the right levels with deeper understanding of issues.

Private organisations can use public data to augment their modelling and develop predictive capabilities that could impact supply chains in unforeseen ways. All levels of government, including local councils, could create Centres of Excellence on local data to foster citizen data science capabilities in new ways and improve their local decision making.

There is a wide range of quantitative estimates of the value of open government data in Australia and internationally, with the Open Data McKinsey study estimating the economic value that can be enabled through open data (including government and private sources) to be up to \$4 trillion per annum globally⁶. In Australia, the economy-wide value of government data is estimated to be between \$500 million and \$25 billion per year⁷.

Develop and reward government departments and markets for data-driven innovation

Projects and initiatives that reward good ideas and innovation driven by government data should be used to stimulate awareness of its availability and its productive use. Government agencies could partner with private companies and other institutions to fund and manage reward programs, to stimulate markets for data-driven products and services that contribute to the Australian economy and society.

In order to increase the speed of adopting new technologies and techniques, Azcende suggests achieving this by taking the model of start-up accelerators and focusing on solving tomorrow’s problems, advancing humanity and amplifying value from current Assets.

Government ‘hothousing’ across departments can help to overcome the key issues of departments not having sufficient time to explore nor trained resources, and to exploit the promise of new

⁵ <http://www.pwc.com.au/publications/assets/big-decisions-unlock-data-possibilities-sep16.pdf>

⁶ <http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/open-data-unlocking-innovation-and-performance-with-liquid-information>

⁷ <https://www.communications.gov.au/file/14711/download?token=qNoZT4Gw>



technology innovations.

Azcende leverages various methodologies to better define problems, assess possibilities and then facilitate projects' definitions. We recommend government consider the following:

- Hothousing intra-departmental data initiatives
- Defining key government priorities and issues around data that the government would like solved
- Showcasing government solutions (for government) to demonstrate possibilities with open data
- Providing a laboratory in which new software applications are demonstrable in a community setting
- Nurturing increased interest and exposure to cutting edge applications of data.

Summary

We believe that thoughtful mining of public data can deliver insights and opportunities that have not been yet imagined, as it drives repurposing of physical and digital assets to maximise value and solve tomorrow's problems, today.

The Australian government has made forays into Industry 4.0 with Germany and is well placed to instigate policy that facilitates Industry 4.0. Given this, there is opportunity to invest in data-driven decision making by 'hothousing' intradepartmental initiatives and innovate, rewarding collaboration and creating opportunities for public partnerships.

