Regional Development Australia SYDNEY

Submission to the Australian Government's Digital Economy Discussion Paper

November 2017

To promote collaborative decision making for the sustainable and just economic development of Sydney, with a focus on employment growth.

Background on RDA Sydney Position

Regional Development Australia Sydney (RDA Sydney) welcomes the opportunity to comment on the Digital Economy Discussion Paper issued by the Australian Government.

RDA Sydney is a COAG initiated partnership between the Australian and NSW Governments created to strengthen communities. It is part of a national network of 55 RDA committees made up of local leaders who work with all levels of government, business and community groups to support their communities to create jobs, attract investment and grow their economies.

RDA Sydney works with all levels of government, industry groups, business, research and education institutions and community representatives to:

- To identify economic opportunities which can leverage private and public sector investment to the region;
- Facilitate connection of businesses, councils and industry sectors with international trade partners, financial markets and potential investors;
- Engage with entrepreneurs and emerging business leaders to explore new opportunities to grow local jobs in the region;
- Provide evidence-based advice to the Australian Government on critical regional development issues;
- Provide information on our region's activities and competitive advantages to all levels of government, business and community sectors

We progress agendas through the establishment of or participation in interest groups, round table discussions and leadership networks.

Our work in conjunction with a wide range of stakeholders has allowed us to develop a knowledge of the economic profile of Greater Sydney through an annual economic baseline assessment, the advanced manufacturing sector, agribusiness, the aerospace and defence industry, transport and logistics (including freight strategies), employment land use policy, planning for an Aerotropolis and industry growth opportunities for the WS Airport, 3D modelling in planning, development of health and education precincts, affordable housing, smart work centres and co-working, innovation ecosystems, strategic procurement and metropolitan rural areas policy.

Our response to the *Discussion Paper* is underpinned by RDA Sydney's primary focus in job creation, investment attraction and growing the Greater Sydney economy.

The following is our submission in which we have addressed selected questions from the *Discussion Paper* where we think we can provide comment based on our activities and projects.

RDA Sydney Submission

How are the advances in digital technology changing the way you work, your industry and your community?

a) Smart Work Centres

In 2013 RDA Sydney, the Western Sydney Regional Organisation of Councils and Penrith Business Alliance co-funded a study led by the University of Technology Sydney into the feasibility of smart work centres in Western Sydney[i]. The study states 'With the recent exponential growth in communications technologies such as mobile devices, wireless and cloud computing, there are fewer limitations on how and where work is carried out. For workers in the knowledge sector, professional, managerial and clerical occupations, the future of work is increasingly being defined in terms of performance, not by location. An age of 'anywhere working' is upon us.'

The report goes onto to say 'For many years a small but significant proportion of the workforce has been regularly working from home. Increasing connectivity has enabled casual and informal use of third spaces such as libraries, cafes and in transit.'

What has transpired since this original study in 2013 has been that the uptake of telework from smart work centres by commuters has been minimal within the city limits and that the main clients of smart work centres have been co-workers and small businesses. Over the past several years there has been a dramatic increase in the number of co-working centres and shared work spaces, mainly in the inner ring of the Sydney CBD stretching to North Sydney, Manly and Bondi, with less significant growth outside this area. These spaces are fuelling startups and small business, and should be seen as an opportunity to foster entrepreneurship and innovation. RDA Sydney's role has been and will continue to be in facilitating connection to industry experts, industry and research networks and the mapping of the growth of co-working centres and shared work spaces across greater Sydney.

b) 3D Planning Tools

Digital advances have allowed RDA Sydney to release 'Virtual Sydney'[ii] which is a 3D planning tool which can be of particular interest to the public and private sector in evaluating strategic infrastructure, transport, and spatial land-use; current (and what-if scenario) long term planning and economic development; property business and investment location; and also by government as a tool for communicating with the public and potential investors. This platform allows the overlaying of datasets belonging to individual organisations/agencies to create a 'whole of metropolitan

c) Transport and Logistics Insights

RDA Sydney, in partnership with the Hargraves Institute, facilitated a Transport and Logistics workshop at which industry representatives were given an opportunity to provide input to the *Inquiry into the National Freight and Supply Chain Priorities*[iii]. What we learnt from this workshop in relation to this question is that as the population grows with increasing density there is an ever growing number of parcel deliveries to individuals due to online shopping opportunities and a confidence in the parcel tracking, truck operational delivery and payment options being used. However, the challenge and opportunity is that digital technologies can provide better access to a common platform to share freight tracking information especially in relation to the last mile.

In the same workshop participants highlighted the need for an integrated port management system to promote more efficient freight movements. Through increased visibility of the freight task there is the opportunity for increased efficiencies by decreasing duplication and improving capacity. Such a port management system is used in Marseille (by the company MGI)[iv].

d) Collaboration and Sharing Ideas

The downside of Digital media technology is that it allows you to pre-set filters and options and therefore you are only receiving inputs and news that is confirming your bias. The best innovation and ideas often come from cross fertilisation or serendipity. Digital tools allow businesses and people to form and confirm narrow points of view that may stifle innovation and not encourage new connections. This is supported by Renee DiResta, a researcher on proliferation of disinformation who writes 'once people join a single conspiracy-minded [Facebook] group, they are algorithmically routed to a plethora of others'[v].

The combination of this with the less need for travel because of digital presence can mean less need for face to face interactions and which may reduce the opportunity for exploration.

e) Trade

Australia is a long way from major traditional markets such as the US and EU, but closer to the growing key markets in the Asia-Pacific e.g. 9 hours flying to Shanghai. Digital technology is removing many of the geographical constraints particularly for digital goods and services. In fact our different time zone is in many cases a bonus. E.g. allowing overnight continuum between US and EV in design supply chains. Trading across time zones and geography is opening up many more opportunities for Australian business in real time as long as they are ready and enabled for the trade. Effective collaboration across international borders is known to be a driver of

innovation and to participate in the global supply chains we need to have a more interdependent view of our capabilities and where we fit in the global supply chain.

What is your vision for an Australia that thrives in a digital economy? Where would you like to see Australia in five, 19 and 20 years' time?

A people and economy that uses the opportunity of critical innovation excellence punching above its weight in the global supply chains it chooses to participate in. We need to target new markets in North Asia where new found consumer wealth will increase demand from around 2034 in areas we excel. We have a large amount of competitive advantages in Quantum Computing, Artificial Intelligence, Bio Pharmaceuticals, Technology, IoT, Agricultural Technology, Mining Technology and Cyber Security.

What is the role of government in achieving that vision?

Government's role is as an enabler, to help create and support ecosystems by reducing blockages and red tape. Government should take on responsible early market risk and support new industry, via incentive and tax, purchase Australian first where competitive, provide an effective platform for collaboration and strong national incentives for global companies to set up here. They should participate heavily in the development of the global standards of the digital economy.

Government should lead the role and be exemplar for industry in new market opportunities, be prepared to try and buy new technological products and services and understand the risks and the need to learn from failure so that Australian suppliers can grow and learn at scale.

What key disruptive technologies or business models do you see? What do you predict is on the horizon in five, 10, 20 years' time?

a) Ledger Technology

Blockchain, Ethereum and distributed ledger technology will enable a range of new services that will assist real-time autonomous decision making and challenge financial services, trade, land and IP registration and management.

b) Electric and Autonomous Vehicles

Electric vehicles and autonomous driving vehicles (both semi- and fully-autonomous) are beginning to have a dramatic impact on many industry sectors now but will have varying take-up depending on geography and industry opportunity. RethinkX released in May 2017 a Report entitled *The Disruption of Transportation and the*

Collapse of the Internal-Combustion Vehicle and Oil Industries[vi]. In this *Report* authors James Arbib and Tony Seba analyse the potential impact electric and autonomous vehicles will have by the year 2030.They predict 'By 2030, within 10 years of regulatory approval of autonomous vehicles (AVs), 95% of U.S. passenger miles travelled will be served by on-demand autonomous electric vehicles owned by fleets, not individuals, in a new business model they call "transport-as-a-service" (TaaS).

c) Transport Planning

The NSW government recently released its *Draft Future Transport Strategy 2056*[vii] in which it describes the customer experience as 'The future of mobility is customer-focused, data-enabled and dynamic. Personal mobility packages will bundle traditional 'modes' with technology platforms and new service offerings like car share, rideshare and smart parking'. The document refers to Mobility as a Service (MaaS) Provider, not the network or service provider, as the central point for packaging travel options. In its companion document the *Draft Greater Sydney Services and Infrastructure Plan*[viii] it sets as one of the key tasks 'Collaborating with industry to effectively integrate Connected and Autonomous Vehicles (CAVs) into the transport network through a number of specific initiatives. The key principle will be to harness the safety and efficiency benefits of CAVs while ensuring pedestrians and more sustainable transport is prioritised in centres'.

d) Construction Sector

According to Startup AUS[ix] the development of new construction equipment is opening the door to a completely different industry paradigm. Advances in physical equipment work hand-in-hand with digital BIM technologies to create powerful new methods of operation. Advancement in design technology create great opportunities in prefabrication processes and may in the future reduce the cost of housing. Internationally, 3D printing in the construction sector has evolved to printing complete houses and offices. Also the use of robotics in such tasks as brick laying has a high impact on the cost of construction as well as addressing labour shortages.

e) Space Industry

In 2015 the Department of Industry, Innovation and Science contracted Asia Pacific Aerospace Consultants Pty Ltd to conduct a selective review of Australian space capabilities in relation to growth opportunities in global supply chains and space enabled services. The final report[x] states 'The need for greater efficiency and productivity coupled with the explosive proliferation of GPS enabled devices is driving significant growth in the utilisation of earth observation data and satellite position navigation and timing data. Industries like mining, construction, agriculture

and intelligent transportation systems are making ever greater use of 'Space Enabled Services' while at the same time new markets are emerging in areas like ports, emergency services, Border Protection, Defense, Public Safety Agencies, Utilities, and Education. Even new consumer markets like pet tracking are emerging as ubiquitous access to GPS enabled devices transforms the landscape.'

f) Internet of Things

IoT will have a major impact in the next 10 years, preventative diagnostics such as smart buildings, the remote control of energy, proactive and prescriptive analytics that optimise inputs to farms, houses, traffic, rail etc. will change the cost base of many industries and provide large productivity gains.

What communications services, and underlying data, platforms and protocols, does Australia need to maximise the opportunities of the digital economy?

a) 5G

The efficient rollout of 5G is critical in maximising the opportunities of the digital economy. Its low latency and ultra-reliable networks is a key safety feature in the development of autonomous vehicles. 5G will be able to support a combination of technologies such as IoT and artificial intelligence allowing such sectors as manufacturing to become globally competitive through Industry 4.0 processes.

5G with its increased network capacity is essential if we are to have Smart Cities with densely connected devices.

b) Platforms

The Deloitte/ACS 2017 Report *Australia's Digital Pulse*[xi] refers to the rise of technological platforms that facilitate knowledge sharing and partnership building across different geographies which means that virtual digital ecosystems can exist, and foster similar benefits as if businesses were physically located.

RDA Sydney has been facilitating a project called the Manufacturing Lighthouse with key stakeholders and industry. A Business Case[xii] has been developed and the model includes the development of the following three components:

- **A Portal**: a key integrated central point, one-stop shop for manufacturers to access information (on innovation and R&D, digital technologies, supply chains, grants, IR, HR, training and skills, finance, etc.) and connect with the right service, program or research organization, through a digital web based platform that aggregates existing, fragmented and disparate information into one single site, where information is organized, accessible, up to date, coherent and agile. It will

be based on a lean model, a conceptual framework, a roadmap, easy to navigate so that SMEs can file a search and find quick response to a simple enquiry.

- **An Advanced Manufacturing Platform** to assist companies to transition to Industry 4.0– a shared, open, cloud-based architecture and software infrastructure that integrates components required to assemble customised advanced manufacturing systems on a standard-based deployment infrastructure. As shown in the US, this platform will significantly lower the barriers of cost and complexity of applying core data analytics, modelling and simulation resources to manufacturing operations. This platform is based on an existing model implemented by the US based Smart Manufacturing Leadership Coalition (SMLC) https://smartmanufacturingcoalition.org/ which has been successful in lowering the barriers of cost and complexity in applying advanced technologies and addressing the challenges manufacturers face integrating technology into their workplace.

- **A platform for sharing, modelling and innovation** a single entry point for researchers and companies to connect, interact, where companies can post their industrial problems and find experts (consultants, researchers) to solve them - A cyber laboratory where academics and manufacturers can work on solutions together, and where they can discuss, develop and publish specifications of emerging industrial problems, including highly complex problems that require across disciplinary research across institutional and national boundaries.

c) Blockchain

The financial sector in Sydney is currently abuzz with startups and researchers developing blockchain technology to the product stage, particularly in the financial services field. The role of government is to facilitate this research and development through grants to both the startup and research sectors. Data61/CSIRO is a key player here. Australia is recognised as a leader in the development of blockchain and its adoption by industry and has the opportunity to continue its leadership role particularly due to our "strong" banking sector that has been resilient compared to those of many other countries.

What opportunities do we have to accelerate the development of technologies that will underpin Australia's digital economy?

a) *Connect- San Diego*[xiii] has helped to create and scale great innovation companies over a 30 year period. This approach can be applied to existing businesses or start-ups. The key elements in their formula for acceleration of innovation are:

- **Business Creation** Accelerating the success of innovators at all stages of growth;
- **Venture Capital** Connecting innovators to the financial resources necessary for success;
- **Educational Curriculum** Accelerating the learning curve of innovators;
- **Innovation Policy** Representing innovation companies to policy decision makers on the barriers to commercialising discoveries;
- **Recognition & Competition** Promoting ground breaking discoveries and breakthrough innovators;
- **Convergence Clusters** Accelerating innovation with shared information and collaboration.

b) Continue support of the start- up sector - Governments at both State and Federal levels have realised the potential contribution of startups to the economy, particularly for those startups that have the potential to scale rapidly. State Governments in Queensland, NSW, South Australia and Victoria have targeted programs to grow the startup sector. NSW, primarily through Jobs for NSW, is investing heavily in the startup sector, particularly looking for that sector of the startup market with an export focus and which have the potential to scale rapidly. The City of Sydney has a specific strategy to grow the startup sector focusing on "creating an ecosystem that enables knowledge-based, innovation-driven businesses to flourish." They aim to achieve this through fostering the community of entrepreneurs. Why is the City Of Sydney supporting the startup ecosystem? The answer is that "Encouraging tech startups will create more jobs, boost Sydney's economy, strengthen global connections and make the city a more desirable place to live, work and visit."

According to the 2016 Crossroads Report[xiv] by Startup AUS, 44% of Australia's startups are located in Sydney. Many startups in Sydney are based in co-working centres, incubators or accelerators where they have already passed an initial scrutiny of their concept/product and its potential, and where they have access to the human and other resources that will help to drive the startup to a higher level.

What is happening in the CBD is more-or-less akin to a cluster. A cluster of start-ups. More than agglomeration in that the entities actively interact with each other, sometimes join forces, share ideas and basically feed off each other.

Fintech is a key area of strength in the Sydney startup ecosystem. Stone and Chalk, Tyro and H2 Ventures are just 3 of the accelerators focusing on the fintech sector. Interestingly, most of the major banks also have their own internal innovation labs where they foster the development of new financial tools in order to try to keep ahead of competition. Interesting in a recent report[xv] by

PwC, many financial institutions collaborate with startups around new developments in areas such as blockchain.

Universities pay important roles in the startup sector. Amongst their roles are:

- They actually run startups e.g. The Hatchery at UTS and Incubate at University of Sydney.
- They host startups e.g. Piivot at UTS
- They run courses and programs related to entrepreneurship e.g. UNSW – Diploma in Innovation Management (The program aims to encourage an entrepreneurial mind-set and provide students with the knowledge and skills needed for developing business opportunities and commercial innovation).
- They have broader innovation agendas that support and overlap with the startup sector.

NSW universities and CSIRO are participating in a NSW Industry initiative known as the Boosting Business Innovation Program[xvi]. Commencing in 2016, this two-year $12 million program aims to accelerate innovation in NSW by supporting greater collaboration between research organisations and their business communities. Examples of this initiative are:

- CSIRO's Lindfield Collaboration Hub is an innovation incubator. A dedicated space for start-ups and SMEs to develop unique, high-tech products and devices. For early stage and established companies.
- UNSW's TechConnect gives start-up entrepreneurs, regional and metropolitan SMEs an ecosystem to innovate the future of technology. Activities co-developed with the Michael Crouch Innovation Centre and UNSW Innovations to develop start-ups or businesses. Programs include: Design Thinking, Collaboration Design, Rapid Prototyping, Digital Fabrication, Pitching etc.

c) Clusters of excellence around key industry sectors are critical given Australian geography, proximity, density and economic complexity (Goran Roos) are significant in fostering innovation;

d) Australia needs to improve its banking settlement and trading terms to be more in line with other like economies. It is good to see the introduction of the New Payment Platform (NPP) being introduced by the Banks after Australia Day 2018. NPP will deliver real time payments between customers of different banks. According to a recent article in the SMH by Clancy Yeates[xvii] similar projects have

gradually been introduced in the United Kingdom and Singapore. NPP allows customers to use payment IDs such as mobile phone numbers instead of account numbers.

What is holding Australian businesses back in terms of benefiting from digital technologies?

The constraints identified by SMEs in a research project conducted by the UNSW for the South West Sydney Manufacturing Taskforce[xviii] (jointly facilitated by RDA Sydney & MSA) in which 81 SMEs were surveyed and during a series of roundtable discussions with 46 manufacturing SMEs around Sydney, include:

- **Uncertainty and confusion about the adoption of digital technologies** (Industry 4.0) and lack of a digital transformation strategy or a data strategy.

- **Fragmented, confusing and disparate information spread out in different websites across different government levels.** SMEs find it challenging to find the right information at the right time or keep up-to-date with the latest developments, as regular commitments fill most of their working days. SMEs tend to focus on the internal running of the business rather than on the external (innovation, growth, or marketing), so it is challenging for them to identify opportunities for change and have the processes in place to benefit from such opportunities.

  Because of the Internet, the volume of data of potential relevance to manufacturers has never been greater, yet the task of evaluating this data and converting it to useful information to the user has never been more imposing. SMEs typically do not have the internal management specialisation to identify information sources and process their implications for the multitude of firm activities that determine competitiveness, such as technology adoption, potential product and service innovations, marketing, workforce training, finance, HR, and broader economic trends.

- **Limited communication between SMEs and between SMEs and research organisations** to identify opportunities and solve problems. SMEs struggle to find the right researcher to help them identify, discuss and address the problems, and are not aware of what research organisations offer. SMEs are less likely to have collaborative arrangements in place with research institutions.

- **Government procurement methods that disadvantage SMEs**, the lack of a local content strategy, weak offset requirements and scaled back budgets is making it difficult for local suppliers, as a result the lion's share of contracts is going offshore to supply chain companies sourced through the foreign owned primes.

- **Poor participation in and design of government support.** Difficulty in navigating the fragmented system of assistance programs and grants available and the complex requirements to submit applications. Assistance programs are often misaligned with industry needs and eligibility is found to be too rigid. Many SMEs are unaware of assistance available for innovation.

- **Impact of skills shortages on future growth and workforce development** continues to be a problem for SMEs that find systems and educational institutions unresponsive to industry needs and information is found to be too dispersed and generic.

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