



# SEIZING THE **INTERNET OF THINGS** OPPORTUNITY FOR AUSTRALIA

## **ABSTRACT**

For the Australian economy and society the rapid emergence of IoT represents both a significant opportunity and a very real threat, depending on whether and how the nation adapts to and harnesses one of the biggest global disruptors of our generation.

**IOT ALLIANCE AUSTRALIA**

AUGUST 2016

# THE IOT OPPORTUNITY AND NEED TO RESPOND

## THE OPPORTUNITY

The Internet of Things (IoT) promises major technology development that will transform 'vertical' industry productivity, innovation and business opportunities. IoT offers Australia significant and transformational economic benefit through smarter use of infrastructure, efficiency gains and new, more sustainable business growth.

Multiple studies by industry and research organisations put the potential global annual GDP benefit of IoT at up to US\$11 trillion. This translates into an opportunity for the Australian economy of up to AUD\$120 billion by 2025<sup>1</sup> – however this is contingent upon Australia increasing its current competitiveness.

IDC's *Worldwide Internet of Things Market Forecast Update, 2015-2019*<sup>2</sup> predicts that the worldwide IoT market spend will grow from US\$591.7 billion in 2014 to US\$1.3 trillion in 2019 with a compound annual growth rate (CAGR) of 17%. The installed base of IoT endpoints will grow from 9.7 billion in 2014 to more than 25.6 billion in 2019, hitting 30 billion in 2020. The spend opportunity is evident in all regions globally; however, Asia Pacific will maintain the lion's share, representing 38.4% of spend in 2019.

The OECD describes IoT as having "a profound impact on multiple sectors of the economy, including industry automation, energy provision and transportation". It says "To maximise the potential of the digital economy for productivity, innovation, inclusive growth and jobs, Governments need to work in multiple policy areas. They must, for example, engage in further and renewed efforts to protect competition, lower entry barriers in communications and content markets, strengthen regulatory coherence, improve skills, assign spectrum in an efficient manner and establish trust at the infrastructure and applications layers."<sup>3</sup>

The European Union has made IoT an essential part of its *Digital Agenda for Europe 2020*, which focuses on applications, research and innovation, and a supportive policy environment. The European Union has been particularly active in promoting research and innovation.

There are similar advanced industry and Government IoT programs in place in South Korea, the US, Singapore, Germany, Japan and the UK. In March 2016, a bi-partisan committee, heavily supported by industry, introduced the *Developing Innovation and Growing the Internet of Things (DIGIT) Act* into the US Senate.

In October 2014, the Singaporean Government has created the *Infocomm Development Authority (IDA)* who is "setting the stage for Singapore to be the World's First Smart Nation that functions beyond the capabilities of a Smart City."<sup>4</sup> The *IDA Smart Nation Platform (SNP)* is a key IoT network infrastructure initiative to support IoT enabled innovation that will leverage their *Block 71* start-up community program.

Similarly, in March 2014 the UK Government announced a significant increase in Government funding for IoT projects, citing their potential to underpin a new 'industrial revolution'. In addition, the Government continues to fund the targeted development of IoT technologies and pilot studies through InnovateUK. As a specific example, the UK Government also earmarked £73 million for IoT projects in 2015. Initiatives include *Hypercat*, a streamlined IoT interoperability profile driven by the *UK Technology Strategy Board* to better open and share data across portfolios.

<sup>1</sup> *Enabling the Internet of Things for Australia*, Communications Alliance, October 2015

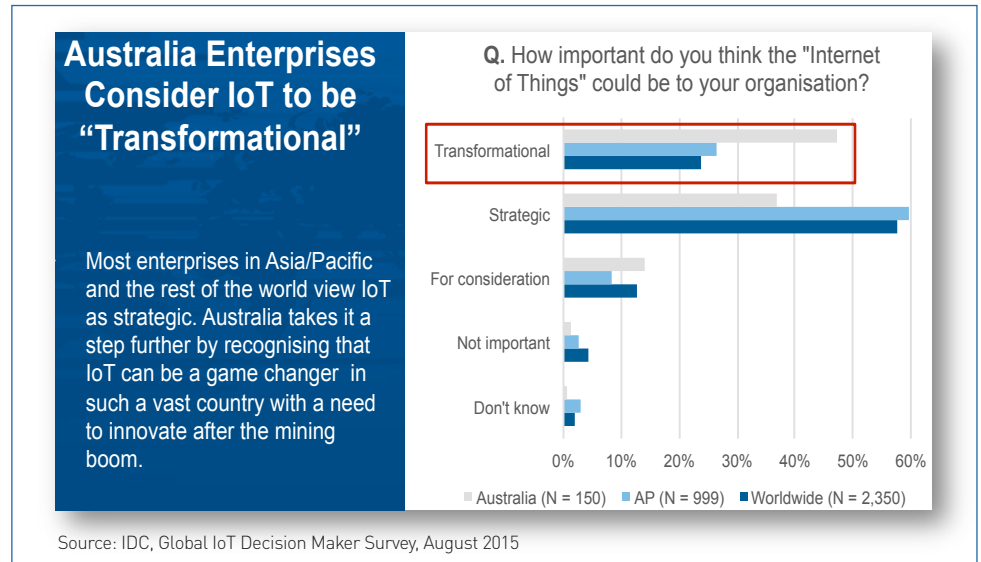
<sup>2</sup> Document # US40983216, Feb 2016

<sup>3</sup> *OECD Digital Economy Outlook 2015*

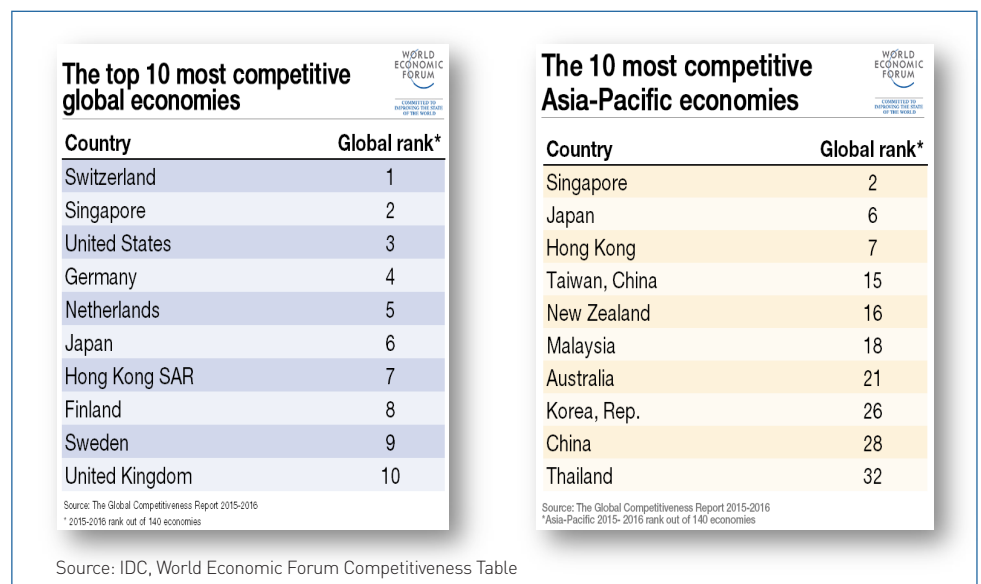
<sup>4</sup> <https://www.ida.gov.sg/about-us/>

<sup>5</sup> <http://reports.weforum.org/global-competitiveness-report-2015-2016/competitiveness-rankings>

In Australia specifically IDC's 2015 research showed that organisations view IoT as being 'transformational' and are far more aware of the inherent strategic benefits than peers across Asia Pacific.



Yet today Australia ranks 21st on the *World Economic Forum Global Competitiveness Index*<sup>5</sup> whereas usual peers like the US and UK rank 3rd and 10th respectively. Neighbour New Zealand has risen to position 16 and Singapore sits at 2nd position.



We see it as imperative for Australia to leverage IoT technology as a key lever to innovate and increase competitiveness on the world stage.

These initiatives are designed to improve the competitive advantage for countries. By ensuring their infrastructures are smarter, efficiencies and productivity can be translated into both lower cost of operations as well as job creation and export competitiveness.

Without concerted industry and Government action Australia risks being out-smarted by competitor nations with better IoT collaboration, investment and industry/Government alignment.



# AUSTRALIAN INDUSTRY RESPONSE - IOT ALLIANCE AUSTRALIA

In May 2015, Communications Alliance formed the IoT Think Tank, since incorporated in July 2016 as IoT Alliance Australia (IoTAA) to provide a focal point for industry action and in response to growing evidence of similar strong IoT collaborative efforts overseas, e.g. in Europe, the US, the UK, South Korea etc.

## IoTAA is the peak Australian IoT body

- VISION:** To empower industry to grow Australia's competitive advantage through IoT.
- PURPOSE:** To accelerate IoT innovation and adoption by:
- > Activating and supporting collaboration across industry, government, research and communities;
  - > Promoting enabling, evidence-based policy and regulation; and
  - > Identifying strategic opportunities for economic growth and social benefit.

IoTAA represents industry, Government observers, academia, start-ups and consumers. The current members of the IoTAA Executive Council are:

- > Australian Communications and Media Authority (ACMA)
- > Australian Communications Consumer Action Network (ACCAN)
- > Australian Competition and Consumer Commission (ACCC)
- > Australian Industry Group (AiG)
- > Australian Information Industry Association (AIIA)
- > Australian Mobile Telecommunications Association (AMTA)
- > Business Council of Australia (BCA)
- > Communications Alliance
- > Creator Tech
- > CSIRO
- > Department of Communications and the Arts (DoCA)
- > Department of Prime Minister and Cabinet (PM&C)
- > Ericsson
- > Hewlett Packard Enterprise
- > Huawei
- > IBM
- > Intel
- > Internet Australia
- > Knowledge Economy Institute (KEi)
- > KPMG
- > nbn
- > Nokia
- > Office of the Australian Information Commissioner (OAIC)/Australian Privacy Commissioner
- > Optus
- > Telstra

IoTAA is currently entirely industry-funded through its Executive Council membership.

Beyond the Executive Council, IoTAA has well over 100 participating member firms and organisations.

In a first step, IoTAA (then IoT Think Tank) commissioned a report *Enabling the Internet of Things for Australia* to consolidate industry understanding of the state of play of IoT globally and in Australia with a view to address:

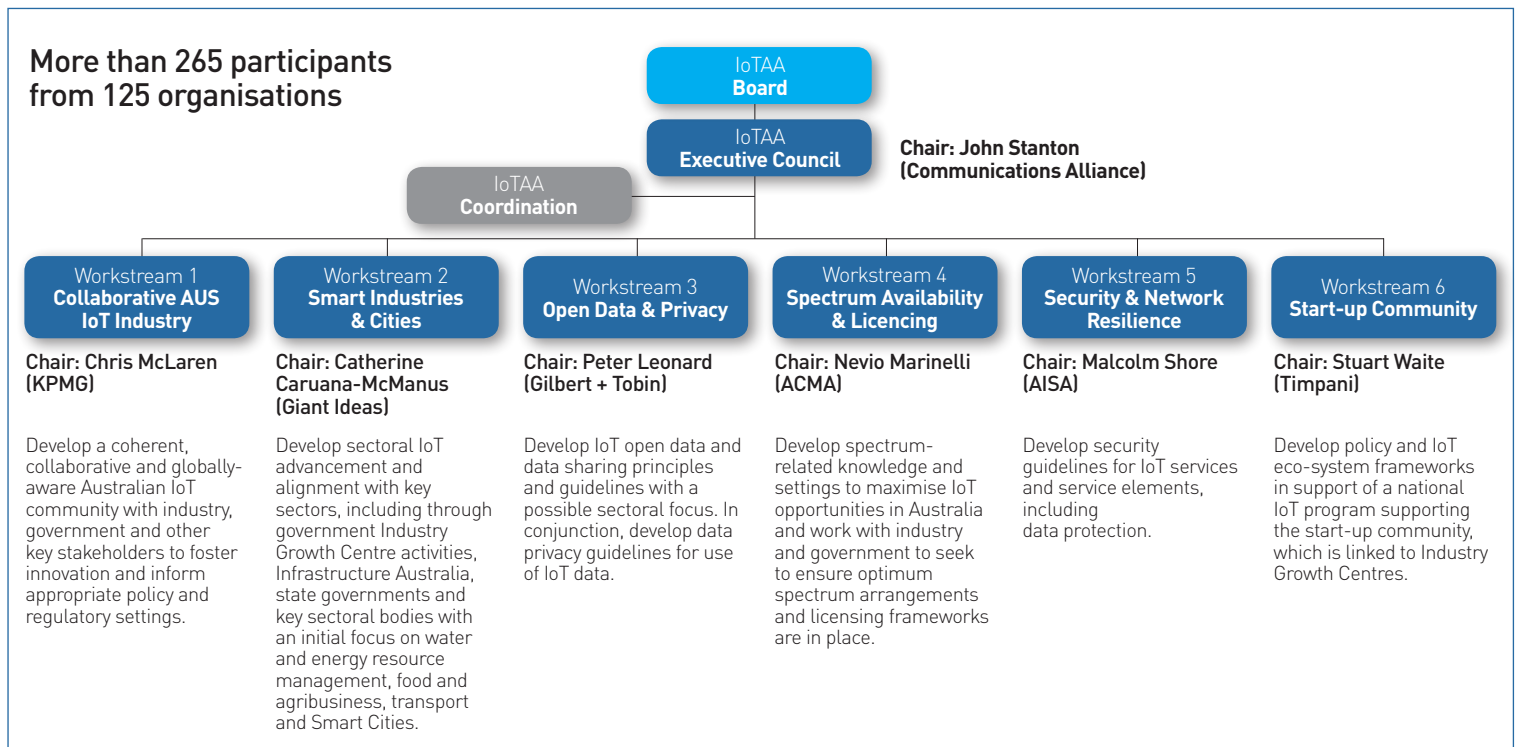
- > Australian regulatory and policy enablers and inhibitors for Australian IoT industry success;
- > Australian industry readiness; and
- > Recommendations for policy and industry initiatives.

The report was published in October 2015 and launched by the Hon Paul Fletcher MP, Minister for Major Projects, Territories and Local Government.

## IOTAA GOVERNANCE AND WORK PROGRAM

Leveraging the *Enabling the Internet of Things for Australia* report to create IoT industry momentum, IoTAA has constituted an initial six workstreams, each with a high profile and engaged

Chairperson to develop terms of reference and work programs that address the six key enablers and inhibitors that have been identified as influencing the take-up of IoT in Australia. The workstreams are:



Government entities participate in some of the IoTAA activities, most notably:

- > ACMA through its chairmanship of WS4 (Spectrum Availability and Licencing) and participation in WS5 Security and Network Resilience;
- > PM&C participation in WS3 (Open Data and Privacy);
- > OAIC participation in WS3 (Open Data and Privacy) and WS5 (Security and Network Resilience); and
- > ACCC, ACMA, DoCA, OAIC and PM&C 'observer' status participation at the Executive Council level.

IoTAA welcomes further partnering with relevant Government agencies in all workstreams and asks Government to consider more active participation at the Executive Council level as well as a financial contribution to the running of IoTAA to support its operation.

IoT provides Government with a powerful vehicle for leveraging coherent industry momentum and leadership to best position Australia to benefit from an IoT-enabled economy. IoT is keen to align and contribute to Government economic, environmental and social priorities in order to achieve greatest immediate results for Australia and build sustainable prosperity for the future.

The opportunity and challenge for IoT is to deal with the complexity of a number of interrelated technology, business, social and environmental elements. This inevitably requires a well-developed eco-system of participating partners and collaborators across industry, all layers of Government, academia, start-ups and investors. Nations that manage this challenge will lead the modern economy and maximise the opportunity presented by IoT.

While Australia has strong fundamental capabilities, we have lacked the IoT focus at industry and Government level of our peers in harnessing the opportunities that IoT offers, and we risk losing the opportunity for IoT competitive advantage and market leadership.

## SECTORAL FOCUS TO EXPLOIT AUSTRALIA'S NATURAL COMPETITIVE ADVANTAGE

Australia has a real opportunity to transform key sectors of its economy to match and even lead its competitors. Australia could be a global IoT exporter of complex software and cloud based solutions, problem solving and industry specific intellectual property as demanded by IoT solutions.

Studying key international markets it appears that an initial IoT focus on sectors of natural competitive advantage or incumbency offers the greatest benefits. IoT will be key for maintaining and growing that advantage.

To illustrate the above: the leading IoT countries are focussing on areas that

'make sense' with respect to their existing strengths and aspirations. Germany and the US, for example, are leveraging their manufacturing strength to focus on the industrial and manufacturing dimensions of IoT. Germany is rallying around the Government's *Industrie 4.0* initiative. South Korea and the US are targeting the automotive and transport sectors while Singapore, China and India see Smart Cities as a Government-led focus.

IoT recommends the Australian Government takes a similar approach by prioritising the advancement of IoT in sectors of natural advantage or in fields of urgent need for transformation. The sectors for priority focus identified by IoT are: water and energy resource management, food and agribusiness, transport, and Smart Cities.

To make the desired (and necessary) progress, industry and Government must work closely together to better understand the challenges and opportunities and map out a plan for lifting the productivity and value in these sectors through the use of IoT technologies.

While IoT has a strong connection to the Department of Communications and the Arts as a 'horizontal' (enabling) industry, the effect and value of IoT in digitally transforming industries also sit within the domain of various other Government departments including:

- > Federal Government across Agriculture and Water Resources, Industry, Innovation and Science, Infrastructure and Regional Development, Prime Minister and Cabinet (Smart Cities and digital transformation), Environment
- > State Governments across infrastructure related incl. transport, Smart Cities, Primary Industry, Environment

IoT wishes to work directly with Government at federal and state levels and across departments to lift competitiveness and productivity by focusing on areas of competitive strength – not coincidentally a similar focus to that given to the *Industry Growth Centres*.

IoTAA seeks to work more closely with Government on national IoT policy and industry alignment to enable and accelerate the awareness, innovation around and deployment of IoT in Australia for national economic growth, and to avoid falling further behind our peer and partner nations.

IoTAA recommends immediate dialogue on how to achieve the above through three mechanisms (outlined below) and others that may be developed together:

**1. Set national priorities and create programs to address the six identified key enablers and inhibitors for IoT.**

This includes:

- > Choosing specific target sectors for accelerated attention;
- > Addressing regulatory and policy enablers and inhibitors, including data policy and privacy, spectrum availability and licencing, service security and resiliency;
- > Supporting SME and IoT start-up communities by fostering the establishment and growth of the IoT eco-system to support private and public investment in IoT enabled innovation; and
- > Identifying and supporting catalyst IoT projects and innovation.

**2. Align IoT industry capability across 'vertical' industry demand-side challenges and Government priorities.**

The aim is to develop a practical, persistent dialogue and understanding with the relevant federal and state Government entities, including the relevant Industry Growth Centres and departments. Through closer engagement industry will better understand how best to align the demand and supply sides of IoT and develop practical programs for IoT innovations such as proofs-of-concepts, and selective catalyst programs that will accelerate our national progress in IoT enabled industry. IoTAA strongly believes that such action is required to be competitive in the global market.

**3. Government participation within and support of IoTAA.**

We ask the Government to take on a more active role at the Executive Council level and contribute to the running of IoTAA to support its operation in recognition of the importance of IoT for the future of Australia.

This could include consideration of the establishment of an appropriately funded *IoT Industry Growth Centre* to encourage and enable the consistent connection and collaboration between the enabling horizontal IoT industry and the emerging smarter vertical industries such as agriculture, transport etc.

As a starting point IoTAA suggests:

- > Establishing a series of workshops between IoTAA and Government leaders to develop an IoT program and identify sponsors across the three activities outlined above; and
- > IoTAA to provide briefings to relevant ministers and departments, federal and state, regarding the IoTAA purpose and activities to develop IoT an enabled industry in Australia.



IoT Alliance Australia is proudly supported by

