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Trade and the digital economy

Joint Standing Committee on Trade and Investment Growth

September 2018
Canberra

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Foreword

Trade is central to a nation's economy and as the economy moves towards a digital basis, so too must trade systems. The Joint Standing Committee on Trade and Investment Growth undertook this inquiry in order to find out how well Australia's trade system is adapting to the digital era, and to recommend where improvements could be made.

Australia is full of businesses – from the very small to some of the largest in the country – which are already world-leaders in making the most of the digital economy. Businesses are finding new opportunities to export goods and, increasingly, services to customers around the globe.

For that reason, it is vital that Australia's trade system keeps up with the changes in how businesses actually trade. While this presents challenges for both governments and businesses, it also provides the opportunity to rethink how trade systems should work.

In this report, the Committee outlines some of those challenges and opportunities, and I hope it will be a useful contribution to a fast-moving area. Even in the period between this inquiry's launch and the tabling of its report, we have seen considerable changes in Australia's approach to the digital economy. That speed of change, as well as the importance of working with our trading partners and multilateral organisations, means that this report makes no technology-specific recommendations. Based on the evidence we received, the Committee has outlined principles we consider important and highlighted issues that require further work.

Through the course of this inquiry, the Committee heard from many people about the interesting, valuable and exciting contributions that are being made to the digital economy. On behalf of the Committee, I thank all of the submitters and witnesses who contributed to this inquiry.

I would like to thank my Committee colleagues for their hard work on this inquiry, and particularly the Deputy Chair, Mr Ross Hart MP, for his valuable

input. I also thank the secretariat staff, and especially Committee Secretary Melanie Brocklehurst, for their work in supporting this inquiry.

Mr Ken O'Dowd MP
Chair



Membership of the Committee

Chair Mr Ken O'Dowd MP

Deputy Chair Mr Ross Hart MP (from 9/2/2018)
Senator Murray Watt (to 8/2/2018)

Members Mr John Alexander OAM, MP
(to 11/11/2017)

Senator Anthony Chisholm

Mr Julian Hill MP (to 25/10/2017)

Mr Peter Khalil MP

Senator Murray Watt

Mr Tim Wilson MP (from 20/6/2018)

Senator the Hon Eric Abetz

Senator Richard Colbeck (from 12/2/2018
to 27/8/2018)

Senator Jane Hume (to 12/2/2018)

Senator Steve Martin (from 10/9/2018)

Mr Rick Wilson MP

Committee Secretariat

Secretary	Melanie Brocklehurst
Inquiry Secretary	Joel Bateman Siobhán Leyne (until January 2018)
Research Officers	Louise Milligan Benjamin Veá Veá
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Terms of reference

To inquire into and report on:

- the responsiveness of Australia's trade architecture and regulatory system to the contemporary needs of the digital economy and disruptive technology; and
- measures to improve the cyber resilience of Australia's trade-focused business sector.



Executive summary

The rise of digital technologies, most particularly the connections offered by the internet, has changed the trade system in fundamental ways. The notion of trade evolved over centuries: firstly as vessels containing an assortment of goods, then large container ships carrying goods in bulk imported and exported by specialised companies, and ultimately this system is being replaced by a world in which tiny businesses can sell not just their products, but their services, to the entire world. This inquiry was established to find out how well Australia is coping with this transition, what can be done better, and where the focus should be from here.

A key theme of this report is that the digital economy should not be regarded as a subset of, or separate to, the broader economy. The Committee, therefore, has made a series of recommendations that emphasise the centrality of digital technologies to trade in the 21st century, and which highlight that an entire rethink of what trade is and how it is conducted is necessary. To limit our adaptation to the digitisation of paper processes will mean that Australia fails to make the most of the many opportunities available. Reimagining of processes as digitally native processes will be as important as the technology delivering trade innovation.

The Australian Government has already developed initiatives and approaches that assist businesses to take advantage of these new opportunities, but too many of these are hard to find or access. A simple, industry-focused, single source of information will help Australian businesses – from the smallest to the largest – to identify new markets and expand their existing markets. Similarly, a simplified, digitally based single-window trade system will allow more ready access to and from the global marketplace providing standards are kept open and interoperable. The Committee is pleased to see that one is being developed, and looks forward to its implementation. Both of these actions will reflect the centrality of digital technologies to the modern trade system.

The digital economy requires a solid foundation of both cyber security and resilience to provide the necessary level of trust, access and availability. Recent improvements in Australia's approach are encouraging, but the Committee would

like to see, from both governments and the private sector, a much more integrated understanding of the centrality of cyber security and resilience to the modern economy. As with so much else in the digital economy, cyber security and resilience cannot be regarded as a specific series of issues removed from the broader discussion; cyber resilience should be a fundamental part of every organisation's management, with every discussion about cyber security to address the centrality of cyber resilience.

On top of maintaining cyber resilience, the adoption of internationally standard approaches will be vital to the digital economy. Nevertheless interoperability in the case of competing standards where local requirements dictate alternative approaches is also paramount. Mere harmonisation of approaches will be inadequate to address the coming challenges.

Australia has a strong reputation for its approach to both technical and regulatory questions, and the Committee recommends that the Australian Government continues to place digital issues at the centre of its trade and other international discussions.

Finally, the centrality of digital skills to the workplace needs of the 21st century cannot be understated. The Committee recommends that education and training, from school students through to existing workers, needs to be designed with that fact in mind. That preparedness is vital for the economic growth of Australia for generations to come, and reflects that digital skills are key workplace skills in the modern economy.



List of recommendations

Recommendation 1

The Committee recommends that the Australian Government, as a matter of priority, creates a single portal of information, with particular regard to exporting digital goods and services, including information about the development of digitally native processes.

Recommendation 2

The Committee recommends that the Australian Government, as a matter of priority, creates a single window trading system, with particular regard to exporting digital goods and services. This single window must be developed with a focus on interoperability to ensure rich data flows can be maintained and transmitted across borders.

Recommendation 3

The Committee recommends that the Australian Government release its Digital Economy Strategy.

Recommendation 4

The Committee recommends that the Australian Government continue to take future workforce needs into account in Australia's education system, from school through to tertiary education.

Recommendation 5

The Committee recommends that the Australian Government investigate options to fund and deliver training for those already in the workforce, to give them the skills to fully participate in the digital economy.

Recommendation 6

The Committee recommends that the Australian Government continue to promote digital trade standards, both technical and regulatory, with an emphasis on openness, technological neutrality and interoperability.

Recommendation 7

The Committee recommends that the Australian Government continue to support a permanent moratorium on duties for data flow.

Recommendation 8

The Committee recommends that the Australian Government work within the WTO to develop an internationally consistent system of measuring data flow.

Recommendation 9

The Committee recommends that the Australian Government ensure that all Commonwealth agencies comply with the Australian Signals Directorate's Essential Eight cyber security and resilience mitigation strategies.

Recommendation 10

The Committee recommends that the Australian Government investigate ways to assist Australian SMEs to improve their cyber security awareness and resilience levels.

Recommendation 11

The Committee recommends that the Australian Government require all agencies when developing policy, legislation or trade agreements to consider whether what is proposed is technologically neutral and whether it could create barriers to the digital economy, including by limiting interoperability.

Introduction: the trade system and the digital economy

The trade system and the digital economy

- 1.1 The internet is making 'it easier, quick and cheaper for consumers and businesses to trade goods, services and exchange information' globally.¹ An estimated 90% of Australians are online and approximate 84% of our small to medium-sized businesses have an online presence.² So it follows that an open, free and secure internet will drive economic growth through digital trade³ and create significant opportunities for Australian businesses.⁴
- 1.2 Australia's International Business Survey of 2016 found that:
 - 60 per cent of Australian business engaged in international trade were using e-commerce to sell goods;
 - 26 per cent to sell services; and
 - 14 per cent to sell both goods and services.⁵
- 1.3 The 'digital economy' refers to:

... the range of economic and social activities that are enabled by information and communications technologies. It includes

1 Department of Foreign Affairs and Trade (DFAT), *Submission 11*, p. 2.

2 Department of the Prime Minister and Cabinet (PM&C), *Submission 4*, p. 1.

3 Department of Foreign Affairs and Trade (DFAT), *Australia's International Cyber Engagement Strategy*, Australian Government, Canberra, p. 10.

4 Dr Tobias Feakin, Ambassador for Cyber Affairs, Department of Foreign Affairs and Trade, *Committee Hansard*, 9 February 2018, p. 1; DFAT, *Submission 11*, p. 1.

5 DFAT, *Submission 11*, p. 3.

activities like banking, buying and selling, and accessing education or entertainment using the internet and connected devices.⁶

- 1.4 *Australia's International Cyber Engagement Strategy* characterises digital trade as:
- ... not just about buying and selling goods and services online, it is also the transmission of information and data across borders. It relies on the use of digital technologies to facilitate trade and improve productivity, for example through simplified customs procedures.⁷
- 1.5 The digital economy is increasingly recognised as a platform for international trade and is a key focus area for forums such as the G20, APEC and the OECD.⁸
- 1.6 The 'digital economy' should not be seen as separate to, or distinct from, The Economy. Increasingly, the economy *is* a digital economy, and Australia – like every other country – needs to ensure it is not left behind.
- 1.7 The Australian Chamber of Commerce and Industry (ACCI) summarised well an oft-expressed theme of this inquiry, that '[t]here is no such thing as the "digital" economy. We need to recognise that there is only the economy in a digital world'.⁹
- 1.8 Indeed, all trade has a digital component:
- Digital technology now underpins and enables virtually every kind of cross-border flow and the boundary between physical and digital products is becoming increasingly blurred. The old notion that digital was part of the services sector no longer applies and now virtually every type of cross-border transaction has a digital component, including most physical goods.¹⁰
- 1.9 Furthermore, the increased digitisation of the economy will see an ongoing collapse in distinctions between types of businesses:
- We are moving inexorably towards a world of universal online commerce, internet design libraries, digital printing and digital manufacture. In this future, even the most simple retail businesses

6 Department of Industry, Innovation and Science (DIIS), *The Digital Economy: Opening up the conversation*, Consultation paper, 19 September 2017, available at <https://industry.gov.au/innovation/Digital-Economy/Pages/default.aspx>, p. 9.

7 DFAT, *Australia's International Cyber Engagement Strategy*, October 2017, p. 13.

8 DIIS, *Submission 3*, p. 7.

9 Australian Chamber of Commerce and Industry (ACCI), *Submission 18*, p. 1.

10 DIIS, *Submission 3*, p. 7.

will be indistinguishable from globally trading knowledge-economy service organisations.¹¹

About this inquiry

- 1.10 This inquiry was initiated when, on 8 August 2017, the Minister for Trade, Tourism and Investment, the Hon Steven Ciobo, asked the Joint Standing Committee on Trade and Investment Growth to inquire into and report on:
- the responsiveness of Australia’s trade architecture and regulatory system to the contemporary needs of the digital economy and disruptive technology; and
 - measures to improve the cyber resilience of Australia’s trade-focused business sector.
- 1.11 The Committee received 23 submissions and held 13 public hearings. Details of these are included in appendix A (submissions) and B (public hearings) of this report.
- 1.12 This report focuses on the actions taken to date by the Australian Government in response to the emergence of the digital economy as it relates to the trade system, and makes recommendations about how the Government might further respond to the challenges and opportunities this brings.
- 1.13 This report consists of four chapters:
- Introduction
 - Government programs – how is the Australian Government approaching the digital economy, especially as it relates to trade?
 - Challenges and opportunities of the digital economy – where might problems lie as the world’s economy moves increasingly into the digital realm; what needs to be improved in Australia’s response; and how can individual businesses and the Australian economy as a whole make the most of the expanded opportunities brought about by the digital economy?
 - Action and recommendations – what should the Australian Government do in response to the challenges and opportunities of the digital economy?

11 Australian Institute of Performance Sciences (AIPS), *Submission 16*, p. 3.

Government programs

- 2.1 This chapter outlines the responses the Committee received from government agencies to this inquiry. Collectively, these describe the work on trade and the digital economy being undertaken by the Australian Government.
- 2.2 Multiple agencies have responsibility or interest in the digital economy space. For example:
- Department of Industry, Innovation and Science (DIIS) – implements the National Innovation and Science Agenda, and develops and implements the digital economy policy (including Australia’s Digital Economy Strategy);¹
 - Department of Foreign Affairs and Trade (DFAT) – builds international regulatory cooperation which assists Australian businesses and consumers to engage in international trade;²
 - Austrade – provides services to help Australian companies succeed internationally;³ and
 - Department of Home Affairs (Home Affairs) – facilitates trade across Australia’s border, secures supply chains against security threats, is developing an agenda to modernise international trade flows and is responsible for Australia’s cyber security policy.⁴
- 2.3 This chapter summarises the specific programs and approaches these agencies are taking to facilitate the digital economy in Australia.

1 DIIS, *Submission 3*, p. 4.

2 DFAT, *Submission 11*, p. 1.

3 Mr Christopher Rees, Assistant General Manager, Austrade, *Committee Hansard*, 9 February 2018, p. 20.

4 Department of Home Affairs (Home Affairs), *Submission 15*, p. 3.

Cyber security and cyber resilience

- 2.4 Cyber security and cyber resilience underpin the digital economy. The two issues must be considered together, rather than simply focussing on cyber security. The Australian Cyber Security Centre (ACSC), within the Home Affairs portfolio, has the lead role in the government's increased responsibility for 'direct intervention to protect Australian citizens against malicious cyberactivity'.⁵
- 2.5 Australia's Cyber Security Strategy consists of 33 initiatives designed to be 'a catalyst for cultural change across the country'.⁶
- 2.6 Initiatives include:
- increasing information sharing about cyber threats between government and industry, including via joint cyber security centres – in Brisbane, Sydney, Melbourne, Perth, and Adelaide – and an online information sharing portal;⁷
 - increasing capacity of the Computer Emergency Response Team;⁸
 - working with the ASX 100 to establish a set of 'governance health checks' which allow companies to understand their cyber security status;⁹
 - supporting small businesses to have their cyber security tested;¹⁰
 - supporting businesses exporting cyber security services; and
 - making Australia 'the leading centre for cyber education'.¹¹
- 2.7 The Government is progressively adjusting its approach to cyber security; by signing the *Council of Europe Convention on Cybercrime*; amending the *Criminal Code Act 1995* to include offences relating to the misuse of telecommunication systems and computers; releasing the *2016 Cyber Security Strategy*; and *2017 Australia's International Cyber Engagement Strategy* to grow Australia's global responsibility and influence in cyberspace.¹²

5 Mr Alistair MacGibbon, National Cyber Security Adviser and Head, Australian Cyber Security Centre (ACSC), *Committee Hansard*, 10 May 2018, p. 1.

6 PM&C, *Submission 4*, p. [2].

7 Mr MacGibbon, ACSC, *Committee Hansard*, 10 May 2018, p. 2.

8 PM&C, *Australia's Cyber Security Strategy: First Annual Update 2017*, p. 25.

9 Ms Sandra Ragg, Office of the Cyber Security Special Adviser, PM&C, *Committee Hansard*, 14 September 2017, p. 2.

10 PM&C, *Australia's Cyber Security Strategy: First Annual Update 2017*, p. 25.

11 PM&C, *Submission 4*, p. [2].

12 DFAT, *Australia's International Cyber Engagement Strategy*, Australian Government, Canberra, pp 5, 36.

- 2.8 Since the launch of the *Cyber Security Strategy*, cyber security is being considered as a national security and economic prosperity risk internationally by governments and businesses alike.¹³ Within Australia, this Strategy is generating to deeper discussions and collaboration between governments, businesses and the public, including work with telecommunication providers to safeguard core communication networks.¹⁴
- 2.9 *Australia's International Cyber Engagement Strategy* focuses on strengthening international relationships and cooperation, including working with Indo-Pacific countries in developing regional cyber security capabilities to safeguard against unauthorised access.¹⁵
- 2.10 The Australian Cyber Security Centre is engaging with industry, law enforcement agencies and international partners to develop cyber resilience and to assist law enforcement agencies to investigate cybercrimes.¹⁶
- 2.11 The Cyber Resilience Taskforce, also with the Home Affairs portfolio, gathers data and shares advice on cyber incidents across government and industry.¹⁷

Cybersecurity research and development

- 2.12 The Cyber Security Cooperative Research Centre, announced in April 2018 and funded in part by the Australian Government, advances Australia's cyber security capability and focuses on three areas:
- ensuring the security of critical infrastructure;
 - enabling individuals, businesses and industries to access cyber security solutions; and
 - building the next generation of industry, government and research cyber security leaders.¹⁸
- 2.13 Under the *Cyber Security Strategy*, two Australian universities (University of Melbourne and Edith Cowan University) have established Academic Centres of Cyber Security Excellence to:

13 Ms Ragg, PM&C, *Committee Hansard*, 14 September 2017, p. 1.

14 PM&C, *Submission 4*, p. 2.

15 *Australia's International Cyber Engagement Strategy*, pp 13, 22, 39.

16 *Australia's International Cyber Engagement Strategy*, p. 24.

17 Ms Ragg, PM&C, *Committee Hansard*, 14 September 2018, p. 2.

18 Senator the Hon Michaelia Cash, the Hon Angus Taylor MP and the Hon Dave Kelly MLA, *Cooperative Research Centre to strengthen cyber security*, media release, 5 April 2018, <http://minister.industry.gov.au/ministers/cash/media-releases/cooperative-research-centre-strengthen-cyber-security>, accessed 17 May 2018.

- help build Australia's capability in cyber security;
- increase the number of highly skilled post-graduates with the job ready skills needed to tackle emerging cyber security challenges; and
- provide support for research addressing cyber security challenges confronting the nation.¹⁹

Digital economy strategy

2.14 The *Digital Economy Strategy*, for which DIIS is responsible, aims to:

- facilitate cooperation between government, private sector and community;²⁰
- draw together existing government digital economy initiatives;²¹
- enable and support the digital economy through digital infrastructure, standards and regulation;
- build on areas of competitive strength to drive productivity and raise digital business capability; and
- empower all Australians through digital skills and inclusion.²²

National Innovation and Science Agenda

2.15 The Government's National Innovation and Science Agenda, which also falls under DIIS's portfolio:

- serves to encourage digital literacy, including in early education;²³ and
- created five 'landing pads' around the world – San Francisco, Berlin, Tel Aviv, Shanghai and Singapore – that assist Australian start-ups to access support, information, partners and venture capital.²⁴

19 Department of Education and Training, *Academic Centres of Cyber Security Excellence*, <https://www.education.gov.au/academic-centres-cyber-security-excellence-accse>, accessed 17 May 2018.

20 DIIS, *Submission 3*, p. 4.

21 DIIS, *Submission 3*, p. 8.

22 DIIS, *Submission 3*, p. 10.

23 DIIS, *Submission 3*, p. 4.

24 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 21.

Australia's International Cyber Engagement Strategy

- 2.16 DFAT, through the Ambassador for Cyber Affairs, is responsible for Australia's international cyber engagement.²⁵
- 2.17 The goal of the *International Cyber Engagement Strategy* is to maximise 'the opportunity for economic growth and prosperity through digital trade'.²⁶
- 2.18 This goal is achieved by:
- [shaping] an enabling environment for digital trade, through trade agreements, harmonisation of standards, and implementation of trade facilitation measures; and
 - [promoting] trade and investment opportunities for Australian digital goods and services.²⁷
- 2.19 Other Strategy initiatives include engaging with Indo-Pacific countries to develop regional digital connectivity.²⁸ Australia, in conjunction with international organisations, regional governments and the private sector, supports projects to improve internet and telecommunications access for countries in the Indo-Pacific region.²⁹

Aid for Trade

- 2.20 As part of the Strategy, DFAT's Aid for Trade program assists developing countries in the region to engage in global trade by:
- providing targeted aid to developing countries to assist their digital trade capacity and narrow the digital divide;³⁰
 - facilitating internet connectivity in Tonga and Fiji, telecommunications in Vanuatu, and mobile coverage in Kiribati and the Solomon Islands;³¹
 - assisting developing countries to move towards digital trade improvements through multilateral programs, such as the World Bank Trade Facilitation Support Program, the WTO Trade Facilitation Agreement Facility and Global Alliance for Trade Facilitation and the G20 Digital Economy Development and Cooperation Initiative.³²

25 DFAT, *Submission 11*, p. 2.

26 *Australia's International Cyber Engagement Strategy*, p. 12.

27 *Australia's International Cyber Engagement Strategy*, p. 12.

28 DFAT, *Submission 11*, p. 9.

29 *Australia's International Cyber Engagement Strategy*, p. 72.

30 DFAT, *Submission 11*, p. 3.

31 DFAT, *Submission 11*, p. 9.

32 DFAT, *Submission 11*, p. 9.

International trade commitments

- 2.21 Ten of Australia's 11 finalised free trade agreements include 'e-commerce' chapters.³³
- 2.22 DFAT identified some key provisions that Australia pursues in its trade negotiations, including:
- domestic regulation;
 - electronic authentication and signatures;
 - transparency;
 - cross-border transfer of information by electronic means (data flows);
 - paperless trading;
 - location of computing facilities (data localisation);
 - treatment of source code;
 - unsolicited emails;
 - online consumer protection and protection of personal information;
 - performance requirements; and
 - elimination of customs duties on e-transactions and IT products.³⁴
- 2.23 DFAT outlined some of the other actions it is taking to encourage digital trade, including:
- consulting with other agencies and businesses to ensure 'negotiating priorities reflect the current needs [of] the economy, business and consumers';³⁵
 - committing to technology-neutral rules, recognising that technologies evolve but that agreements are designed for the long term;³⁶
 - committing to agreements that 'allow the flow of data across borders and prohibitions on requirements to store data locally';³⁷
 - working towards making the temporary moratorium amongst World Trade Organisation (WTO) members on applying customs duties to e-transmissions (in effect since May 1998) permanent; and
 - working with the WTO to negotiate e-commerce-specific multilateral rules that complement current rules governing goods and services as

33 *Australia's International Cyber Engagement Strategy*, p. 14.

34 DFAT, *Submission 11*, pp 5 – 7.

35 DFAT, *Submission 11*, p. 4.

36 DFAT, *Submission 11*, p. 5.

37 DFAT, *Submission 11*, p. 5.

outlined in the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS).³⁸

Austrade

- 2.24 Austrade works with industry directly to assist individual businesses and sectors to find trading opportunities, with a focus on providing businesses with information and access to relevant skills. This addresses one of the major barriers to potential traders – a lack of information.³⁹
- 2.25 Current Austrade projects relating to the digital economy include:
- providing information to businesses via the Prime Minister’s Industry 4.0 Taskforce;
 - supporting SMEs to prepare for a digital economy and access to applications and skills;
 - promoting trade and investment opportunities for digital goods and services;⁴⁰
 - preparing a general how-to guide for e-commerce for SMEs;⁴¹
 - using the Export Market Development Grants Scheme to provide financial assistance to exporters;⁴²
 - sector-specific mapping to ensure that Australian companies are well-positioned to take advantage of innovation ecosystems in key global markets;⁴³ and
 - commissioning research to better understand Australia’s supply capacity, including in areas such as the disruptive technology ecosystem and cyber security.⁴⁴
- 2.26 More broadly, Austrade is working to identify and better promote Australia’s export capabilities in fields such as additive manufacturing, automation, data analytics, cyber security, cloud services, the ‘Internet of Things’ and artificial intelligence.⁴⁵

38 DFAT, *Submission 11*, p. 4.

39 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 20.

40 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 20.

41 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 21.

42 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 21.

43 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 21.

44 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 21.

45 Austrade, *Submission 14*, p. 1.

- 2.27 Austrade is working with Data61, the data-innovation offshoot of the CSIRO, on projects including developing a 'prototype trade analytics and data visualisation dashboard', which will enable businesses to more easily look at free trade agreements and find export opportunities.⁴⁶

Single window

- 2.28 DFAT's submission notes the Australian Government's commitment to establish a 'single window' for trade, and to allow businesses to lodge all documentation for imports, exports and transit-related regulatory requirements through a single portal.⁴⁷
- 2.29 At present, approximately 30 government agencies have regulatory touchpoints relating to border management. A single window system would mean that traders could supply information once and have it transfer across all relevant agencies.⁴⁸
- 2.30 Home Affairs described a single window as a 'key component of a trade modernisation agenda' and noted that more than 70 global economies have implemented a single window trade system.⁴⁹
- 2.31 Home Affairs is working with relevant government agencies to develop a single-window approach to trade, noting it will 'require reform of the legislative, regulatory, technical and operational processes that currently enable cross-border trade'.⁵⁰

Trade modernisation agenda

- 2.32 More broadly, Home Affairs proposes a whole-of-government trade modernisation approach to be implemented over the next decade. Several elements are directly relevant to the government's trade and the digital economy model, including that:
- government has visibility of end-to-end supply chains and access to real-time intelligence information on goods traded and the entities behind the transactions;

46 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 21.

47 DFAT, *Submission 11*, pp 4 - 5.

48 Ms Christie Sawczuk, Acting Assistant Secretary, Trade Modernisation and Industry Engagement Branch, Department of Home Affairs, *Committee Hansard*, 10 May 2018, p. 11.

49 Home Affairs, *Submission 15*, p. 5.

50 Home Affairs, *Submission 15*, p. 5.

- the majority of traders are trusted and interact in a secure and transparent supply chain;
 - intelligence and risk assessment capabilities and revenue collection are improved by new and emerging technologies, such as blockchain, to ensure the veracity, validation and analysis of intelligence and trade data;
 - border examination processes are integrated, automated and outsourced;
 - Australian international trade is enabled by a single window;
 - government agencies responsible for regulating international trade operate under a harmonised legislative and regulatory framework making them user-friendly for industry and efficient for government;
 - commercial data holdings and government systems interact seamlessly to carry out all international trade regulatory requirements; and
 - international trade end-to-end processes managed by government are digitised and automated.⁵¹
- 2.33 This approach will be designed in consultation with industry. Home Affairs notes that ‘industry support, co-design and co-investment will be critical and will assist in building our international trading future’.⁵²
- 2.34 Home Affairs argues that digitisation, along with automation, can be used to ‘streamline and harmonise all cross-border trade processes, and to identify and eliminate those that are a burden for industry and government’.⁵³
- 2.35 Home Affairs also anticipates that the project to modernise Australia’s trade system will involve significant expenditure and that ‘investments in trade modernisation initiatives must be a shared responsibility across government and industry as shared beneficiaries of this reform agenda’.⁵⁴

Industry growth centres

- 2.36 DIIS funds six industry growth centres, one in each of the following sectors:
- advanced manufacturing;

51 Home Affairs, *Submission 15*, pp 4 – 5.

52 Mr John Gibbon, Acting First Assistant Secretary, Trade and Customs Division, Department of Home Affairs, *Committee Hansard*, 10 May 2018, p. 8.

53 Home Affairs, *Submission 15*, p. 5.

54 Home Affairs, *Submission 15*, p. 5.

- cyber security;
- food and agribusiness;
- medical technologies and pharmaceuticals;
- mining equipment, technology and services; and
- oil, gas and energy resources.

2.37 The growth centres aim to ‘improve the productivity and competitiveness of sectors of competitive strength and strategic priority in the Australian economy’. This will be achieved by:

- identifying regulations that are unnecessary or over-burdensome for the sectors, and suggesting possible reforms;
- improving engagement between research and industry, and within industry, to achieve stronger coordination, collaboration and commercialisation outcomes;
- improving the capability of the key sectors to engage with international markets and access global supply chains; and
- improving the management and workforce skills of the six sectors.⁵⁵

2.38 Five of the six growth centres provided written submissions and/or appeared at a public hearing of the Committee.

AMGC Ltd

2.39 AMGC Ltd, the Advanced Manufacturing Growth Centre, is focusing on expanding the understanding of manufacturing beyond production, to include research and development, design, supply chain management, sales and serving.⁵⁶

2.40 To accommodate this broader understanding, and for industry to make the most of it, AMGC works within the sector to ‘ensure that every manufacturer understands the benefits of becoming more digitally astute’.⁵⁷

AustCyber

2.41 As Chief Executive Officer, Ms Michelle Price noted, AustCyber has a two-fold role: of both helping Australia’s cyber security sector to grow and contributing to Australia’s levels of cyber resilience.⁵⁸

55 Department of Industry, Innovation and Science, *Industry Growth Centres Initiative Programme Guidelines*, April 2016, p. 6.

56 Advanced Manufacturing Growth Centre (AMGC), *Submission 12*, p. 1.

57 AMGC, *Submission 12*, p. 2.

58 Ms Michelle Price, Chief Executive Officer, AustCyber, *Committee Hansard*, 28 June 2018, p. 1.

- 2.42 AustCyber assists Australian cyber security businesses to be more competitive in the international market.⁵⁹ It helps start-ups connect with customers; supports the development of scalable service delivery models; and has initiatives to increase cyber security education and training, and retain expertise.⁶⁰
- 2.43 To assist the sector in the long term, AustCyber is also focusing on training and education components, including launching a national cyber security challenge which aims to be – by the end of 2019 – in every high school in Australia.⁶¹
- 2.44 Beyond high school, AustCyber is overseeing nationally consistent TAFE qualifications in cyber security, and working to create similar consistency across university courses.⁶²

MTP Connect

- 2.45 MTP Connect, the medical technology, biotechnology and pharmaceuticals growth centre, is particularly focused on increasing the level of collaboration between researchers in the area and the industry. This will enable Australian businesses to compete effectively as the treatment of medical conditions undergoes a substantial shift built on improvements in medical imaging, 3D printing, data use and other digital technologies.⁶³

METS Ignited

- 2.46 Working in the mining equipment, technologies and services sector, METS Ignited focuses on building collaboration and assisting Australian firms to position themselves to take advantage of innovative technologies, including robotics.⁶⁴

National Energy Resources Australia

- 2.47 National Energy Resources Australia (NERA) aims to increase the value of Australian energy resources – oil, gas, coal seam gas and uranium – to the

59 PM&C, *Submission 4*, p. 3.

60 PM&C, *Submission 4*, p. 3.

61 Ms Price, *AustCyber, Committee Hansard*, 28 June 2018, p. 1.

62 Ms Price, *AustCyber, Committee Hansard*, 28 June 2018, p. 1.

63 Dr Daniel Grant, Chief Executive Officer, MTPConnect, *Committee Hansard*, 16 August 2018, p. 2.

64 Mr Ric Gros, Chief Executive Officer, METS Ignited, *Committee Hansard*, 8 February 2018, p. 2.

economy by supporting collaboration and innovation.⁶⁵ Currently, these resources provide \$55 billion in gross value to the economy.⁶⁶

- 2.48 The resource sector has an ‘appetite for innovation’ with Australia currently producing 70% of the world’s mining software. The industry is working towards ‘full digital integration of assets over the next 10 years’, which will create opportunities for partnerships with small businesses producing innovative technologies.⁶⁷

Committee comment

- 2.49 The Australian Government has a broad range of programs and initiatives designed to enable Australian businesses to adapt to, and flourish in, the digital economy.
- 2.50 However, as noted above, Commonwealth agencies are undertaking a wide range of activities in relation to the digital economy. As a result, there is a clear need for a single authoritative source of information both for businesses and the general public, including as to the necessity to develop ‘digitally native’ processes. Currently, those interested in trade and digital economy issues must navigate a series of agencies, websites and documents, as well as responsibilities which sometimes overlap.
- 2.51 While Australian businesses are demonstrating innovative approaches, the websites and other public information of many government agencies have a strong focus on physical goods. Digital technologies offer solutions to physical trade problems, but the possibilities of digital products and services should not be left behind. The next chapter of this report will outline some of the major benefits brought about by the digital economy, and how Australia can take advantage of those.

65 National Energy Resources Australia, *About*, available at

https://www.nera.org.au/Category?Action=View&Category_id=55.

66 Ms Miranda Taylor, Chief Executive Officer, National Energy Resources Australia (NERA), *Committee Hansard*, 17 August 2018, p. 7.

67 Ms Taylor, NERA, *Committee Hansard*, 17 August 2018, p. 7.

Challenges and opportunity in the digital economy

Introduction

- 3.1 The digital economy brings both opportunities and challenges that Australia will need to address if it is to make the most of what the digital economy offers. This chapter outlines the challenges and later the opportunities available to Australia – as a whole and for individuals. Evidence received by the Committee suggests that while Australia has a lot to offer and much to gain from the digital economy, there remain questions which need to be answered.
- 3.2 The challenges considered in this chapter are:
- cyber security and resilience;
 - business engagement;
 - keeping up with trading partners;
 - lack of digital economy data;
 - lack of digital economy expertise;
 - disparate programs;
 - a failure to rethink from the ground up (digitally native processes); and
 - infrastructure requirements.

Cyber security

- 3.3 The increased opportunities of the digital economy come with increased risk from a cyber security and cyber resilience perspective.¹ The harnessing of these opportunities and mitigation of these risks is a challenge and responsibility that must be shared.²
- 3.4 In the way that the digital economy should not be thought of as separate to the economy, cyber security should not be regarded as a separate risk: cyber security is a business risk in the same way that any other risk is.³ Cyber resilience considers at its most basic the effectiveness of the proposed mitigation of a cyber security risk.
- 3.5 Public and private sector organisations in Australian and internationally have been targeted by malicious cyber activities, which have resulted in significant amounts of commercial and personal data being lost, along with substantial financial and reputational costs.⁴ It is estimated that the cost to Australia of cybercrime is in excess of \$1 billion annually.⁵
- 3.6 However, it is not clear that Australian businesses and governments are fully cognisant of these risks. In particular, the Committee heard that businesses underinvest in cyber security and resilience measures, and that management – of both private industry and government agencies – tends to consider cyber security and resilience a specific Information Technology risk only.
- 3.7 The Australian National Audit Office (ANAO) has audited 14 Commonwealth agencies' compliance with the Australian Signals Directorate's Essential Eight strategies for cyber resilience over the last four years. In that time, the ANAO has found that 'compliance with mandatory requirements of information security continued to be low'.⁶
- 3.8 The ANAO's *Interim Report on Key Financial Controls of Major Entities* (published in June 2018) includes the self-assessed level of compliance with mandatory cyber security measures for 23 entities:

A significant proportion of these entities continue to report non-compliance with mandatory strategies to mitigate targeted cyber intrusions, with only 48% reporting compliance. Not

1 Mr MacGibbon, ACSC, *Committee Hansard*, 10 May 2018, p. 2.

2 *Australia's International Cyber Engagement Strategy*, p. 7; PM&C, *Submission 4*, p. 3.

3 Ms Price, AustCyber, *Committee Hansard*, 28 June 2018, p. 2.

4 PM&C, *Submission 4*, pp. 2–3.

5 PM&C, *Submission 4*, p. 2.

6 Australian National Audit Office, *Insights from reports tabled April to June 2018*, July 2018, <https://www.anao.gov.au/work/audit-insights/insights-reports-tabled-april-june-2018>, accessed 14 August 2018.

implementing the mandatory mitigation strategies reduces an entity's ability to continue providing services while deterring and responding to cyber intrusions. It also increases the likelihood of a successful cyber intrusion.⁷

3.9 A similar situation exists in the private sector. AI Group warns that even with growing threats, the uptake and 'investment in cyber security technology is a low priority for many businesses.'⁸

3.10 The scale of the problem was highlighted by the National Retail Association, who noted that online fraud is increasing:

The last figure I have is about \$534 million, which is quite significant. We are seeing that on the increase, especially with the new type of technology. The biggest problem we have is 'card not shown' [when valid credit card details are stolen and used to make purchases or other payments]. Online retailers get no compensation. If you're the consumer, the bank is likely to reimburse you the amount, but, if you're a retailer, it's very similar to counterfeiting; there's no real recourse for you.⁹

3.11 As AustCyber's Ms Price pointed out, for many small business owners, cyber security may struggle for attention against all the other priorities of running their business:

[C]ulture is a really important factor here. First and foremost, one thing that is not understood across the community more broadly is that part of the reason this is such a complex endeavour for Australia is that 96% of our economy is comprised of small business...[W]hen you are a small business and you are trying to make sure you have a pipeline of contracts and that your customers are happy and that your employees are happy and the ATO is happy with what you're doing – and, if you happen to have a board, that ASIC is happy with you – you are not thinking about cyber security and how resilient you are to cyberattack.¹⁰

3.12 The Australian Institute of Performance Sciences (AIPS) argued that Australian organisations are 'failing to keep pace with increasing technology and cyber resilience threats'. In particular, AIPS held that this is a result of inadequate senior management focus on these risks, and

7 Australian National Audit Office, *Insights from reports tabled April to June 2018*, July 2018, <https://www.anao.gov.au/work/audit-insights/insights-reports-tabled-april-june-2018> (accessed 14 August 2018).

8 Australian Industry Group (AI Group), *Submission 9*, p. 8.

9 Ms Dominique Lamb, Chief Executive Officer, National Retail Association Ltd, *Committee Hansard*, 17 August 2018, p. 28.

10 Ms Chief Executive Officer, AustCyber, *Committee Hansard*, 28 June 2018, p. 3.

pointed to research indicating that 'only a comprehensive governance model approach can enable leaders to engage appropriately with the complexity and volatility of this issue in large scale Australian organisation[s]'.¹¹

- 3.13 While the Australian Government has moved to centralise its policy responsibility for cyber security and resilience to the Australian Cyber Security Centre, ACCI noted that the extensive list of government cyber security initiatives creates confusion:

... it is unclear which Australian Government agency would co-ordinate information gathering in the event of a cyberattack. This makes it quite difficult for Australian businesses to know who they should contact to better understand the magnitude of the cyber threat.¹²

- 3.14 Broad recognition about the extent of the issue also currently lags, and Ms Price argues that until there is a better understanding of the risks and challenges, there will not be adequate focus on addressing those:

... society hasn't yet come to the realisation that compromises will happen. There is no silver bullet. The attackers move very, very quickly to evolve their methods. And it's not a case where we've tied a bow and we can put away the box. This is something that we have to maintain vigilance on all the time, and so things will happen where compromises occur.¹³

Business engagement

- 3.15 Low levels of engagement from the private sector can be a significant barrier to growth in the digital economy. DIIS notes, 'business investment in digital technologies results in higher productivity but Australian businesses are not fast adopters of technology by international standards'. A 2015 OECD study placed Australia in the middle of member countries on a range of digital indicators.¹⁴

- 3.16 AI Group conducted research into Australian businesses' use of digital technologies and found that understanding of, and work towards, the use of these technologies was not high:

11 Australian Institute of Performance Studies, *Submission 16*, p. 4.

12 ACCI, *Submission 18*, p. 4.

13 Ms Price, *AustCyber, Committee Hansard*, 28 June 2018, pp 2 – 3.

14 DIIS, *Submission 3*, p. 6.

- there are low levels of businesses using digital technologies that fall under the Industry 4.0 or Internet of Things banner;
 - use of and investment in cyber security technology is considered a low priority for many businesses;
 - many businesses do not see a link between digital capabilities and their growth strategies;
 - a small but substantial proportion (17%) of businesses have no intention of improving their technological skills; and
 - low levels of employee skills and perceived lack of relevance were some of the main reasons for businesses choosing not to invest in digital technologies.¹⁵
- 3.17 DIIS noted that, while increased use of data is linked to productivity increases, only 7% of businesses make significant use of big data.¹⁶
- 3.18 Similarly, in the e-commerce and retail sector, Ms Dominique Lamb, the Chief Executive Officer of the National Retail Association highlighted that ‘there seems to be a lack of knowledge about what data can do for business’, resulting in lost opportunities.¹⁷
- 3.19 The 2016 *Performance Review of the Australian Innovation, Science and Research System* conducted by Innovation and Science Australia highlights that Australian businesses, by and large, are not highly innovative:
- Only 9.2% of Australian firms are engaged in new to market product innovation, which...is below the OECD+ average of 13.3%, and well below the average of the top five performing countries in the OECD+ (21.3% of all firms).
- A low level of new-to-market innovation suggests that Australia is an incremental innovator and adopts innovations from elsewhere rather than creating them.¹⁸
- 3.20 The *Review* also noted that Australian exports are not considered high-technology, with Australia ranking 26th out of 37 OECD+ countries in terms of its high-technology export value.¹⁹
- 3.21 Similarly, while most measurable OECD countries are net exporters of knowledge assets (things like research and technical assistance, patents, designs, trademarks and licences), Australia is a net importer. In 2013,

15 AI Group, *Submission 9*, p. 9.

16 DIIS, *Submission 3*, p. 8.

17 Ms Lamb, National Retail Association Ltd, *Committee Hansard*, 17 August 2018, p. 23.

18 Innovation and Science Australia, 2016, *Performance Review of the Australian Innovation, Science and Research System*, p. 103.

19 *Performance Review of the Australian Innovation, Science and Research System*, p. 106.

Australia was ranked 28th out of 31 OECD countries in terms of net balance of knowledge assets trade.²⁰

- 3.22 Mr Colvin of the Global Innovation Forum highlighted that there is work to be done in assisting Australian businesses moving into the digital economy:

... there are another set of small businesses that have maybe been around for a lot longer that aren't always aware of either the global opportunity or the technologies that are able to be used to run their business. Someone from AusIndustry pointed out that they've got a business of not insignificant size that still does all of its accounting on a local spreadsheet on Excel that's resident on a person's computer.²¹

- 3.23 The problem can be circular, too, as the Export Council of Australia noted, 'You can create the best training packages in the world, but actually getting to these businesses is the challenge', especially where those businesses who need the training the most are the least likely to find out about it. The Export Council also noted that whilst 'Australians are some of the best travelled people in the world, our businesses certainly aren't'. What is important is to create the mindset that 'if you can do business successfully in Australia, then you can do business successfully anywhere'.²²

A new operating environment

- 3.24 Beyond engagement, the expanded scope and market possibilities for Australian SMEs also has a downside. With ready access to overseas customers, the Australians selling those goods or services have responsibilities and obligations they may not be aware of:

One of the things that is a challenge for businesses... is to ensure compliance with local legal regimes. So if you have an SME providing a good, a product or a service in Australia they know what the laws are. They know whether they can comply with them or not. It is very simple.

If they are suddenly providing products or services in another country – in any other country, potentially, in the case of digital

20 *Performance Review of the Australian Innovation, Science and Research System*, p. 106.

21 Mr Jake Colvin, Executive Director, Global Innovation Forum, National Foreign Trade Council Foundation, *Committee Hansard*, 19 October 2017, p. 4.

22 Mr Heath Baker, Head of Policy, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 5.

trade – they may not be aware of the local legal regime but they will still have to comply with it.²³

3.25 For businesses seeking to export to multiple countries, there are substantial barriers in understanding the regulatory environment:

... for the small, micro-sized businesses, it can be a morass to navigate. There's upwards of 600 questions that you have to consider on a given particular product. Then you weave your way through how you respond and understand those questions, making sure they are clear, and not all of the questions are available to the public.²⁴

3.26 A related point is that other countries' laws may hinder the operations of Australian traders. DFAT gave the example of data localisation requirements:

Typically, the sorts of rules that you might see are where government might say, 'If you want to provide a product or a service in our market, you have to store your data relating to those operations in our market.' Or they might say, 'If you're transacting business in our market, you can't take data relating to those transactions across the border.' For Australian businesses... that sort of rule can operate as a constraint on the way they will manage their data.

A lot of small and medium enterprises, as you can imagine, don't seek to manage their data themselves; they will outsource it to a specialist provider who may be an Australian company or may be another company. They may not keep the data in Australia; they may keep the data in a cloud. So a rule that requires that data be kept in a particular location can operate as a very significant constraint on the way that businesses operating digitally can operate.²⁵

3.27 AI Group highlighted the problem, noting the importance of government awareness of both international developments and the needs of Australian businesses:

[O]ne of the case studies is a small, family owned company now selling internet enabled machines. They are not thinking, 'China's introducing cyber security law, so I'll never be able to sell to

23 Mr James Baxter, Assistant Secretary, Services and WTO Trade Policy Branch, Department of Foreign Affairs and Trade, *Committee Hansard*, 7 September 2017, p. 2.

24 Mr Kevin Willis, Director, Global Trade Services, Amazon, *Committee Hansard*, 17 August 2018, pp 3 – 4.

25 Mr Baxter, DFAT, *Committee Hansard*, 7 September 2017, p. 2.

China,' so we need our trade officials to be thinking of these sorts of companies.²⁶

- 3.28 To address these barriers, as will be discussed in the final chapter, the Australian Government needs to prioritise engaging with the private sector, ensuring that Australian businesses are aware of both the challenges and opportunities the digital economy brings.

Government

- 3.29 While noting that the Australian Government is only part of the trade environment, the Export Council of Australia nonetheless argued that 'only the Government can take the lead' in the process of digitising Australia's trade system.²⁷

- 3.30 It is also important to recognise the scale of the change that the digital economy is bringing to governments as the regulators of international trade. ACCI gave an indication of this:

Australia is part of a world where technology will increasingly allow goods and services to be provided in a digital form...

3D printing advancements will increasingly allow consumers to order personally tailored goods from international suppliers outside of the historic physical goods trading methods. This in turn will interrupt traditional customs functions and challenge border security.²⁸

Keeping up with trading partners

- 3.31 As in any new system, there are benefits of being ahead of the curve, and corresponding disadvantages in failing to adapt. Australia needs to ensure that it doesn't lag in adapting its trade system to the digital economy.
- 3.32 The Export Council of Australia argues that Australia needs to take the initiative in establishing digital trade practices:

While the digitisation of the trade value chain is inevitable, it will not happen uniformly. Different countries, and different sections of the value chain, will digitise at different rates. Countries at the

26 Ms Louise McGrath, National Manager, Business and International Advisory Services, AI Group, *Committee Hansard*, 7 December 2017, p. 2.

27 Export Council of Australia, *Submission 10*, p. 2.

28 ACCI, *Submission 18*, p. 1.

forefront of this process will set the terms and enjoy major competitive advantages.²⁹

- 3.33 By failing to keep up with developments in other countries, Australia could put its businesses at a competitive disadvantage. AI Group gave the example of China's cyber security laws, under which companies operating within China are required to give the government their anti-hacking proprietary hardware and software, and keep information and data relating to Chinese citizens stored on domestic servers. AI Group members:

...large and small with an operation in China have complained that they struggle to get clarity on China's domestic data security regulations and would appreciate advice and support from fellow Australian companies or Austrade.³⁰

- 3.34 Equally important, and discussed further in the final chapter, is consistency of regulatory frameworks across jurisdictions and interoperability of digital systems. This will ensure that services offered to local entrepreneurs and SMEs are the same as those offered in other international markets. For example, if:

...key regulatory policies relating to copyright, tax and privacy...are not consistent with other competitive markets, this increases the cost to do business in Australia and can discourage businesses from achieving the gains that can grow the economy and promote trade.³¹

Lack of digital economy data

- 3.35 Currently, government responses to the digital economy are hindered by insufficiently detailed and accurate data. Several witnesses pointed to the poor quality of trade data as an inhibitor to better understanding of, and policies relating to, digital trade. The Export Council argued that 'trade statistics lag decades behind business practices'.³²
- 3.36 This is not a problem unique to Australia. An OECD survey found that none of the 33 members who responded had conducted a study into quantifying cross-border data flows.³³
- 3.37 The Information Technology and Innovation Foundation (ITIF) also pointed to this shortage of information:

29 Export Council of Australia, *Submission 10*, p. 2.

30 AI Group, *Submission 9*, pp 4 – 5.

31 Facebook, *Submission 6*, p. 4.

32 Export Council of Australia, *Submission 10*, p. 2.

33 The Information Technology and Innovation Foundation (ITIF), *Submission 21*, p. 11.

At the moment, precise, consistent, and comparable metrics on data flows and their value are hard to come by in Australia and many other countries. The same goes for the growing role of cross-border digital trade and e-commerce. More broadly, insufficient measurement of data flows contributes to issues relating to understanding its impact on productivity and GDP.³⁴

- 3.38 Data collection practices simply have not caught up to the reality of practice. For goods traded traditionally, statistical data is gathered from customs documents and is 'of a very high quality', while statistics on digital trade is poor. Services:
- ...exported digitally go through no gateway by which to collect statistics. Consignments under \$2000 (most e-commerce exports) are not included in some ABS statistics. As a result, these exports are likely to be undervalued.³⁵
- 3.39 Business structures can distort statistics too. In cases where a product is sold directly from a company's Australian office, that sale should be picked up in export statistics. But if a product is sold from the same company's foreign office – as is common in digital trade – that sale will not be recorded.³⁶ This again speaks to the desirability of re-engineering business processes as 'digitally native'.
- 3.40 In the absence of solid information, and no agreed mechanism for collecting the relevant data, policymakers and others are reliant on 'best guess estimates'.³⁷
- 3.41 The consequence of this, the Export Council argues, is that policy is being developed on the basis of an underestimation of the digital economy:
- When setting policy for export sectors, policymakers will inevitably (and in many cases, only) look to the statistics to get a sense of the importance of the sector. When the statistics are misleading, or plain wrong, policy will suffer. This is especially the case for policies where there are trade-offs, like in FTA negotiations or prioritising industry assistance or support.³⁸
- 3.42 Improved data quality, that 'accurately [reflects] modern business practices', would therefore result in a better understanding of the digital economy and lead to more informed policymaking:

34 ITIF, *Submission 21*, p. 11.

35 Export Council of Australia, *Submission 10*, pp. 2–3.

36 Export Council of Australia, *Submission 10*, pp. 2–3.

37 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 2.

38 Export Council of Australia, *Submission 10*, p. 3.

It is therefore essential to ensure that policymakers better understand the importance of digital trade to Australia and the Australian economy. In particular, it is essential that Australia's export statistics accurately reflect modern business practices.³⁹

Lack of digital expertise

3.43 A related point made by some witnesses was that the Government's trade system is being formulated by people without sufficient understanding or appreciation of the centrality of digital technology to the economy. As AI Group put it:

The Australian Government has trade experts who are highly skilled in 19th and 20th century trade issues such as anti-dumping, quotas and tariffs. To protect Australia's future economic interests, greater effort should be made to both recruit expertise in digital trade issues and develop internal talent within our Trade Negotiating teams. We are signing Free Trade Agreements today that are setting trade rules for technology that hasn't been invented yet.⁴⁰

3.44 The problem, as AI Group's Ms Louise McGrath explained, is that digital expertise has not risen to the upper levels of the public service yet:

I think it's improving, but I think the challenge for agencies such as DFAT is that the very senior staff do not necessarily have a full understanding of digital technologies and the way they interact within the global trade system. That's an issue with free trade negotiations [...] I think we need to work with our existing trade policy negotiators to improve their skills and their understanding.⁴¹

3.45 The challenge for governments is to be able to keep up with the technology and the way business is using it and 'to put in place settings that enable that transition and, in some cases, facilitate it'. Correspondingly, 'business also has a responsibility to help government understand its needs'.⁴²

3.46 On the other hand, Dr Feakin, Australia's Ambassador for Cyber Affairs, suggested that Australia's expertise was under-rated:

I think that within our trade teams we do have those with the specialist knowledge. I think part of where that has come from has

39 Export Council of Australia, *Submission 10*, p. 3.

40 AI Group, *Submission 9*, p. 3.

41 Ms McGrath, AI Group, *Committee Hansard*, 7 December 2017, pp 1 – 2.

42 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 1.

been the very protracted negotiation of the Trans-Pacific Partnership, which had at its core a great deal of digital provisions for that negotiation. [...]I know that other countries lean on them as well for a bit of assistance. So I think we have good capability there, certainly in terms of the trade negotiation side and the development of what those requirements are.⁴³

Infrastructure for the digital economy

- 3.47 To be competitive in the digital economy, Australia requires an appropriate level of digital infrastructure.
- 3.48 E-commerce, for example, will suffer if there is inadequate infrastructure. Particularly in Australia's regional areas, current levels are proving a barrier for e-commerce retailers:

[T]he big sticking points for [the retail sector] have certainly been around infrastructure and networks. NBN continues to be a problem – certainly in the regions.

Infrastructure in terms of delivery and supply chain continues to be an issue. We know that Australia Post are reporting an increase of about 19.2% on the eastern seaboard in packages and purchasing online, but those increases still aren't quite making it out to the entire Australian network. It's very much focused in those capital cities, and that's something that retailers are interested in improving.⁴⁴

- 3.49 Australians are increasingly operating in the digital economy, making 'access to high speed internet [and optimal technology essential tools] in modern international trade'.⁴⁵

Failure to rethink from the ground up

- 3.50 New approaches, rather than a mere digitisation of existing systems, are required for Australia to reap the full benefits of the digital economy. The technologies of the digital economy allow a complete rethink of what systems are designed to achieve, and will be put to their best effect when that rethinking happens. This is central to individual businesses and indeed whole sectors reaping the benefits of the efficiencies arising from digitally native processes. In fact, digitally native processes open the opportunity for collection and transmission of rich data which can assist in

43 Dr Feakin, Ambassador for Cyber Affairs, *Committee Hansard*, 9 February 2018, p. 7.

44 Ms Lamb, National Retail Association Ltd, *Committee Hansard*, 17 August 2018, p. 22.

45 ACCL, *Submission 18*, p. 3.

goods traversing a border, an exporter being paid promptly, or an importer to pledge imported goods as security.

- 3.51 Currently, as witnesses argued, most of the international trade system has not substantively changed in centuries:

Australia also needs to be a strong advocate for the development of a structure and nomenclature within WTO and other multilateral bodies to address digital trade barriers. The multilateral infrastructure that supports global trade rules was created in an age when most trade was between two businesses, shipping a box of items between two countries using a global payment system that was first used on the Silk Route. Digital technologies have created a new world where businesses can sell direct to consumers using a trading platform developed in one country and housed on a server in a third country.⁴⁶

- 3.52 While the easiest application may be to improve an existing process by digitising it, the true function of digital technology is the opportunity to redesign the process itself:

What we have done in Australia quite well for a long time is that we have had a focus on efficiency. We have done these things, and government is a really good example because we have said, 'We do it like this – let's just get better at that'. I think the fundamental shift in digital[–]is not just about the technology you use – it is about what you do and how you do it.⁴⁷

- 3.53 ANZ notes that trade infrastructure as a whole is 'less digitised than processes and systems for many industries; most documents are issued in paper form creating inefficiencies for importers, exporters and service providers facilitating trade'.⁴⁸

- 3.54 The current trade system was 'developed on 18th-century requirements', as the Export Council's Mr Baker put it, and 'has just gradually evolved and is in need of some fairly fundamental reform'.⁴⁹

- 3.55 As an illustration of that, Mr Baker gave the example of exporting food, which requires multiple forms and interactions with multiple agencies:

If you're exporting food, you'll need to pay the Department of Agriculture. If it's processed food, then it's \$89 plus postage for a certificate saying – and it literally just says, 'To the best of my

46 AI Group, *Submission 9*, p. 3.

47 Mr Peter Alexander, Chief Digital Officer, Digital Transformation Agency, *Committee Hansard*, 9 February 2018, p. 16

48 ANZ, *Submission 13*, p. 3.

49 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 2.

knowledge, what the exporter says is true', and the Department of Agriculture signs that, and then mails the hard copy to them. The exporters then generally get their freight forwarder to fill out the Customs export declaration, and the freight forwarders will typically charge about \$50 for that. These three forms are virtually identical and are just signed off by three different parties. For a \$2,000 consignment, you're looking at about \$195 in paperwork for the three basically similar forms plus you've got all of the freight charges and everything on top of that. I would call that a fairly big constraint on trade.⁵⁰

3.56 Further, the systems employed by different agencies do not necessarily align:

The Department of Agriculture and Department of Home Affairs systems do talk to each other for some exports, for agricultural exports, but they don't share information for processed food. [Processed food exporters] need to pay \$89 to the Department of Agriculture for [their certificate] and then separately fill in the export declaration whereas if you are exporting meat, the systems will talk to each other. So there are linkages between those two systems, but it's not complete.⁵¹

Opportunities in the digital economy

3.57 While the first half of this chapter focused on the challenges which the digital economy is bringing to both Australian businesses and to government regulation, the remainder highlights the many opportunities and benefits Australia will see. These benefits include:

- increased access to global markets for Australian businesses;
- the creation of new business models and opportunities; and
- streamlined trade processes.

Increased access to markets

3.58 As DIIS notes, a key opportunity afforded by the technologies underpinning the digital economy is that Australian businesses find it easier to sell to global customers. SMEs in particular, 'use these platforms

50 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 4.

51 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 4.

and the comprehensive set of ancillary services they provide, such as online payment mechanisms, to reach consumers globally'.⁵²

- 3.59 For Australian firms, and especially for SMEs, the digital economy has led to entirely new ways of doing business, and an entirely new scope for their market:

In the old days SMEs tended to have to find a supply chain locally, or to find an agent in another country if they wanted to trade. With online trade, either to another business or direct to consumers, that's simply not necessary anymore. So that is an enormous chance for SMEs in particular to get into global markets that they never had before.⁵³

- 3.60 The rise of e-commerce platforms – companies and services who facilitate digital trade by providing the infrastructure for the sale, the delivery or both – has allowed small businesses in particular to expand their markets without needing to individually solve each of those problems.⁵⁴
- 3.61 The benefits are not limited to physical goods, either. Increasingly, services – particularly IT, professional, financial and education services – will be traded online.⁵⁵

Creation of new industries and business opportunities

- 3.62 The digital economy offers the opportunity for Australian businesses to create entirely new services and export those to customers around the world. Businesses can expand beyond their current operations and export their expertise and innovation.
- 3.63 Doing so would result in Australia moving 'up the food chain', as one witness put it: 'not just digging stuff out of the ground and exporting it but also exporting [our] smarts'.⁵⁶
- 3.64 Mr Ric Gross, Chief Executive Officer of METS Ignited, the industry growth centre for the mining equipment, technology and services sector, highlighted the benefits the digital economy is already having:

The digital economy [...] is like a central vertebra. In that context, any information that we desire, we can have instantaneously. We've got sensors now that allow us to sense everything very

52 DIIS, *Submission 3*, p. 6.

53 Mr Baxter, DFAT, *Committee Hansard*, 7 September 2017, p. 2.

54 Mr Paul Greenberg, Founder and Executive Director, NORA Network, *Committee Hansard*, 17 August 2018, p. 23.

55 DIIS, *Submission 3*, p. 6.

56 Dr Brett Heyward, Program Director, Regulation Reform, METS Ignited, *Committee Hansard*, 8 February 2018, p. 5.

economically and we can have that information anywhere, supported by automation, robotics, spatial information, spatial capabilities et cetera, which can give us that Industry 4.0 element that we talk about where now we can optimise the whole value chain.⁵⁷

3.65 The Export Council of Australia pointed to the range of new services that will rise, or already has developed, out of digital technologies:

Services are becoming digitised, and 3D (even 4D) printing, Industry 4.0 and other emerging technologies will see the same thing happen to goods. As goods and services are digitised, it is essential that governments keep up. They must understand new trading methods and the value traded through those methods.

Technology is also enabling new products and services. Business models that were until recently impossible are now mainstream.⁵⁸

3.66 Australia is already a world-leader in the development and application of remote operations, particularly in the mining sector, where companies are now able to take iron ore from the ground to the port without any direct human interaction. As Mr Norman of NERA pointed out, those solutions have wider applications:

... NASA essentially recognised that the challenges we face in our resources sector to run our remote plant from major CBD locations in safe and economically sensible ways is not that dissimilar to what they're trying to do on the space station and what they're trying to do with the next generation, which is going to be an unmanned platform orbiting further out.⁵⁹

3.67 While maintaining cyber security and resilience (as discussed elsewhere in this report) is a challenge of the digital economy, it brings the corresponding opportunity of an industry developing to fill that need.

3.68 Mr MacGibbon, the National Cyber Security Advisor and Head of the Australian Cyber Security Centre, noted that Australia currently ranks fourth globally for patent filings on cyber security research and network security.⁶⁰

3.69 Ms Price from AustCyber also made this point, noting that Australia is well positioned to become an exporter of cyber services:

57 Mr Ric Gross, Chief Executive Officer, METS Ignited, *Committee Hansard*, 8 February 2018, p. 1.

58 Export Council of Australia, *Submission 10*, p. 1.

59 Mr Francis Norman, General Manager, Innovation and Strategy, NERA, *Committee Hansard*, 17 August 2018, p. 11.

60 Mr MacGibbon, ACSC, *Committee Hansard*, 10 May 2018, p. 2.

There's a huge economic opportunity for Australia here, particularly within the Indo-Pacific region, to be exporting those professional services around cybersecurity. The most critical component of that is understanding that a framework of policies and operations is what is required to do this well. Australia, I think, is getting to a position where we are demonstrating as well as showcasing what good looks like, and I believe that, under the current cyber security strategy, by having a focus on both the defensive side of things and the economic development side of things, we are showing what great looks like. Implementing that strategy has opened doors to conversations that we have not previously been able to access, as a country, in being taken seriously in that trusted conversation around how we get better organised in taking on the attackers.⁶¹

Improved, streamlined trade processes

3.70 The trade system as it currently exists imposes a high level of regulatory burden on importers and exporters. Redesigning this system to bring it in line with the digital economy, brings with it the opportunity to improve and streamline trade regulations and practices.

3.71 As the Export Council noted, once the entire trade system has been digitally redesigned, the process will bring benefits across the board to exporters, importers and consumers alike:

The end result will be seamless, lower cost trade. Trade will be simpler, more reliable and allowing greater scope for innovation.⁶²

3.72 ACCI gave an example of how trade systems could be simplified and improved through a more digital system:

Australia's land logistics management is an opportunity for dramatic efficiency improvements if transparency and big data can be harnessed. The Chamber of Commerce in WA undertook a study of possible improvements if Australia adopted a "Port Community System (PCS)" approach in the integration of our logistics and supply chains. PCS is an electronic platform which connects the multiple systems operated by a variety of organisations that make up a seaport, airport or inland port community. This study identified that there are over 120 transactions required to support the life cycle of a container through import and export involving over 750 pieces of

61 Ms Price, AustCyber, *Committee Hansard*, 28 June 2018, p. 2.

62 Export Council of Australia, *Submission 10*, p. 2.

information, of which over 300 were duplicated. The use of PCS would create efficiencies in this laborious process.⁶³

3.73 ANZ pointed to the benefits in time, money and security of moving to an entirely digital trade system:

It's been estimated that a company which processes around 1 000 export documents a year saves close to \$250 000 by moving to a digital trade solution. A digital trade platform can send a bill of lading – which is a very paper based document – through an entire supply chain in a matter of minutes. It eliminates the need for physically checking and couriering documents. It also assists in the detection of financial crime and the prevention of money laundering.⁶⁴

3.74 Home Affairs also pointed to the increased efficiency that a rebuilt, digitally based, trade system will have, noting that processes will be 'streamline[d] and harmonise[d]', and resulting in a lightening of the regulatory burden on industry and government.⁶⁵

3.75 The trade modernisation agenda being developed by Home Affairs will see a considerably minimised approach, through a whole-of-government approach to modernise trade process.⁶⁶

63 ACCL, *Submission 18*, p. 2.

64 Mr Mark Evans, Managing Director, Transaction Banking, Institutional Bank, ANZ, *Committee Hansard*, 17 August 2018, p. 30.

65 Home Affairs, *Submission 15*, p. 5.

66 Home Affairs, *Submission 15*, pp 4 – 5.

Actions and recommendations

- 4.1 As has been discussed, the Australian Government already has a range of policies and initiatives in relation to the digital economy. In this chapter, drawing on themes highlighted in evidence received in this inquiry, the Committee points to actions that should be taken to ensure that Australia makes the most of the opportunities of the digital economy. These are:
- the need for a cohesive, whole-of-government approach;
 - the need to build digital awareness into Australia's education system, including for those already working;
 - the need to rebuild systems, designing processes from the ground up;
 - the need to build cyber resilience; and
 - the need to work closely with trading partners and multinational organisations.

The need for a cohesive approach

- 4.2 As was highlighted in chapter 2, the broad range of agencies that run sometimes overlapping trade and the digital economy initiatives can create confusion. A cohesive, all-of-government, streamlined approach, including a single information portal, would alleviate much of that confusion and help Australian businesses find opportunities for growth.
- 4.3 Several witnesses highlighted that there is a barrier for many Australian businesses, particularly SMEs, in that they are unable to easily access the information that might help them better utilise the digital economy.

4.4 The scale of the problem was highlighted in the Home Affairs submission:

Over 40 000 Australian businesses engage in international trade, with the general public also increasingly using e-commerce to buy overseas goods. These transactions are regulated by more than 30 government agencies that administer approximately 200 pieces of legislation.¹

4.5 While SMEs can potentially benefit from the opportunities of the digital economy, knowing what those are and how they can be used remains a problem:

... there are issues around knowing what government and private sector resources are available. AusIndustry and Austrade, for example, provide a number of useful resources and advice to small businesses and start-ups looking to go abroad, but a number of the businesses that would benefit from them don't often know that they are available.²

4.6 This was highlighted by Mr Colvin from the Global Innovation Forum, discussing conversations he'd had with Australian businesses:

One of the things that came out repeatedly [...] is that there's not a single window or a one-stop shop for start-ups or small businesses to go to in the government and understand the scope of resources and funding programs [...]. I know business.gov.au is trying, but that sort of [...] single window doesn't exist.³

4.7 Ms Lamb from the National Retail Association also made this point, arguing that government information on digital economy options for retailers 'is not all in one spot. It's not as easy to locate'.⁴

4.8 ANZ noted that, while there is plenty of information provided by the Government, it is not centralised. To address that, ANZ's Mr Evans suggested:

I think there's a lot the government could do in providing a portal to make it easier to access the information. More and more people, particularly the small companies, don't have large R&A developments. This is mums and dads, or a couple of guys in a garage with a good idea. They don't have the resources to spend time researching it or to have people do it for them. So we've just

1 Home Affairs, *Submission 15*, p. 4.

2 Mr Colvin, Global Innovation Forum, National Foreign Trade Council Foundation, *Committee Hansard*, 19 October 2017, p. 1.

3 Mr Colvin, Global Innovation Forum, National Foreign Trade Council Foundation, *Committee Hansard*, 19 October 2017, p. 4.

4 Ms Lamb, National Retail Association Ltd, *Committee Hansard*, 17 August 2018, p. 27.

got to find a way to help it be easier for them to understand where they may be competitive, where they should focus their efforts and how they can complete those transactions in a compliant way.⁵

4.9 Similarly the AI Group praised some of the work done by Austrade, but noted that the 'general advice on their website appears to ignore the existence of digital technologies'.⁶

4.10 The problem with the lack of a single point of contact was highlighted by this illustration:

We hear from start-ups and small businesses that they don't know where to turn either to comply with regulations or when things go wrong. We met a CEO of a small business in London who had her shipment stuck in customs in the United States because there was a problem with the tariff classification code. It took her – the founder at CEO level – three days to work this out simply because she didn't know who to talk to. She kept googling and finally found some poor woman at US customs who was able to help her out.⁷

4.11 The role of Ambassador for Cyber Affairs, located within DFAT, was designed to have a single identifiable person with broad responsibility for Australia's international cyber engagement. Dr Feakin, the first appointee to the position, described the role as:

... to have a senior representative from government who coordinates across the whole of the Australian system – the private sector and civil society – to ensure that we have the appropriate level of representation in the international system. It was born out of the reasoning that the digital space is not only important for trade but also becoming an increasingly important part of all of our foreign interactions.⁸

4.12 As such, amongst other responsibilities, the Ambassador chairs quarterly meetings of all the agencies who have any involvement in cyber issues, with the aim of ensuring a coordinated approach.⁹

4.13 The *International Cyber Engagement Strategy*, published in October 2017, 'sets a pretty ambitious agenda for Australia across the whole spectrum of

5 Mr Evans, ANZ, *Committee Hansard*, 17 August 2018, p. 34.

6 AI Group, *Submission 9*, p. 7.

7 Mr Colvin, Global Innovation Forum, National Foreign Trade Council Foundation, *Committee Hansard*, 19 October 2017, p. 4.

8 Dr Feakin, Ambassador for Cyber Affairs, *Committee Hansard*, 9 February 2018, p. 1.

9 Dr Feakin, Ambassador for Cyber Affairs, *Committee Hansard*, 9 February 2018, p. 4.

what we term “cyber affairs”, including, notably, Digital Trade as the first chapter.¹⁰

- 4.14 Within the broader domestic framework, the forthcoming Digital Economy Strategy is designed to have a similar role; to reduce the fragmentation of Australia’s digital economy approach, and bring together information and initiatives.¹¹
- 4.15 The rationale for the Digital Economy Strategy is explicitly to bring together the range of programs already in existence:

The Government already supports action on a diverse range of digital economy initiatives across multiple agencies. A key purpose of the strategy will be to draw together, complement and build on these existing initiatives. [...] To make sure we stay up to date, the strategy will evolve over time.

Trade issues, particularly digitally-enabled trade, will be an important component of the strategy. While a significant proportion of e-commerce is still conducted domestically, the nature of digital trade means that Australian businesses of all sizes can readily target markets around the world. This potential extends even to small businesses which would not previously have had the capacity to develop overseas markets. Australian business can leverage worldwide reputational advantages for Australia as a producer of safe, high quality products across a range of sectors.¹²

The need to build digital awareness

- 4.16 In the same way that cyber security and cyber resilience need to be integral to both government and business operations, education and information about digital technologies needs to be given a greater priority. From education at schools through to reskilling workers and business owners, understanding of the digital economy should be regarded as a vital aspect of 21st century life.
- 4.17 As Mr Alexander of the Digital Transformation Agency emphasised, it is vital for Australia’s future economic interests that this focus begins early:

10 Dr Feakin, Ambassador for Cyber Affairs, *Committee Hansard*, 9 February 2018, p. 1.

11 Dr Chris Locke, First Assistant Secretary, Portfolio Policy and Innovation Strategy Division, Department of Industry, Innovation and Science, *Committee Hansard*, 9 February 2018, p. 24.

12 DIIS, *Submission 3*, p. 8.

We are not getting kids into science and technology. We are particularly not getting women into science and technology. We have to do more of that to get them early. By university it is too late. If they have not studied it at school and if they have not gone through, it is a real challenge to get kids into science and technology past school.¹³

4.18 To respond to these challenges, AustCyber, as part of its role as the cyber security growth centre, spends around half its time working on education programs and initiatives. While not every student will have a career in cyber security:

... it's making sure that all students have at least some skill sets in cyber security because cyber will be a component of every job in the future. In fact, we have lots of evidence to prove that in fact most jobs in the economy right now do require some baseline level of cyber security education.¹⁴

4.19 Beyond school, Australian TAFEs now offer a nationally consistent certificate IV in cyber security, and courses at the university level are also being developed and offered. Importantly, there is an expansion of focus from technical skills to the broader skills that are required to manage cyber security risks, including on topics such as legal issues, risk management, financial management and general management skills.¹⁵

4.20 Facebook recommended a series of 'pro-innovation policies', including STEM degree enrolment and completion incentives to encourage an adequate workforce, including women and other underrepresented groups in the sector.¹⁶

4.21 Business emphasised that new opportunities in the digital realm require new skillsets, and consequently a focus on those in the education and training sectors.¹⁷

4.22 The consultation process for the government's Digital Economy Strategy found that the issue most raised by stakeholders was the need for improved digital skills:

No matter what your sector, digital skills is seen as the biggest issue. [...] actually having the capacity in businesses to have the right types of skills to support digitally enabled businesses and accessing digital markets is the critical thing. So businesses need to

13 Mr Alexander, Digital Transformation Agency, *Committee Hansard*, 9 February 2018, p. 15.

14 Ms Price, AustCyber, *Committee Hansard*, 28 June 2018, p. 1.

15 Ms Price, AustCyber, *Committee Hansard*, 28 June 2018, p. 1.

16 Facebook, *Submission 6*, p. 5.

17 Ms Lamb, National Retail Association Ltd, *Committee Hansard*, 17 August 2018, p. 23.

know that they need those skills and suppliers of skills need to know what sorts of skills should actually be supplied. There needs to be a market that settles that in an effective way. That is a big story, from education to business incentives, but that is the No. 1 topic that comes out.¹⁸

- 4.23 Given that, there is a role for the government to help Australian businesses bring their practices into the digital economy:

There's an opportunity for the Australian government to emphasise to small businesses... about the technologies and the resources that are available to help put those businesses on a footing to go global.¹⁹

- 4.24 The Export Council made this point, arguing that many Australian businesses are simply unaware of their options, and that the government should focus on providing that information:

Education is key to enabling businesses to start on the right path. But all too often, businesses rely on trial and error to work out what they need for international success. The government should fund education and training programs for start-ups in the digital economy to help them go global.

The government must strengthen its support for Australian digital businesses to succeed internationally. Too often Australian businesses are not alert to the opportunities offshore or not willing to take the risk to realise those opportunities. Adequately funding the Export Market Development Grant (EMDG) scheme, and increasing resources for Austrade, are essential... to give businesses confidence and certainty in pursuing international marketing activity. For a business, not knowing how much of its expenditure will be rebated creates risk and undermines those objectives.²⁰

- 4.25 Relatively new areas such as artificial intelligence and machine learning, Innovation and Science Australia has identified, are 'significant area[s] of competitive advantage where Australia is being left behind, and more work needs to be done building on Australia's strength in that'.²¹

- 4.26 To address the lack of engagement amongst Australian businesses, the Export Council recommended a 'concerted awareness campaign that's
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18 Dr Locke, DIIS, *Committee Hansard*, 9 February 2018, p. 24.

19 Mr Colvin, Global Innovation Forum, National Foreign Trade Council Foundation, *Committee Hansard*, 19 October 2017, p. 4.

20 Export Council of Australia, *Submission 10*, p. 4.

21 Dr Locke, DIIS, *Committee Hansard*, 9 February 2018, p. 24.

followed up by education into the benefits of, and then how to do, business internationally'.²²

The need to rebuild systems

- 4.27 As discussed in chapter three, witnesses highlighted that a mere application of digital technology to analogue systems will bring small benefits, but to make the most of the digital economy, governments – like private industry – need to rebuild their approach from the ground up. This change means not just improving current systems by digitising them, but redesigning systems on the basis of digital technologies. This is an essential aspect of addressing the challenges and opportunities presented by the digital economy. Processes and systems must be reengineered and re-imagined for maximum advantage.
- 4.28 ACCI noted their recommendation that DFAT seek a 'digital by default' approach to trade agreements, particularly for documentary requirements such as evidence of origin information.²³
- 4.29 DIIS highlighted that Australia's approach to digital components of trade agreements has grown more sophisticated as the digital economy has:
- The nature of [e-commerce] provisions has evolved over time, with earlier FTAs focussing on paperless trading, protection of online consumers, and excluding electronic transmissions from customs duties. Importantly, more recent FTAs have also included provisions concerning the protection of personal information, cross border data flows, disclosure of source code and location of computing facilities.²⁴
- 4.30 DIIS noted that it works closely with DFAT on FTA negotiations, including advising on e-commerce and other relevant issues.²⁵
- 4.31 So too does Home Affairs, particularly in the light of the single-window proposition that department is currently building.²⁶
- 4.32 In recognition of the centrality of the digital economy to trade overall, agencies like Austrade are incorporating their work on digital goods and

22 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 5.

23 ACCI, *Submission 18*, p. 2.

24 DIIS, *Submission 3*, p. 10.

25 DIIS, *Submission 3*, p. 10.

26 Ms Sawczuk, Home Affairs, *Committee Hansard*, 10 May 2018, p. 13.

services directly into the specific sector-based teams, rather than considering digital issues as a separate area.²⁷

- 4.33 Some of the work currently being done in relation to the trade system is in fact moving towards a reimagined digital approach, including the single-window system proposed by Home Affairs:

They are doing exactly this, which is to say, ‘What are we doing? What is the problem we are solving?’ How do we go back to first principles and say, ‘What is the problem we are solving?’ If we were greenfields, how would we do it? Then we have the challenge, which is that we have to overlay that with the complications of legislation and all of the various things we have and say, ‘Well, in a pragmatic and practical world bound by some of these things, which are really hard to change, what would we do?’²⁸

- 4.34 Crucially, the system Home Affairs is proposing is being built on the basis of consultation with industry: ‘Industry support, co-design and co-investment will be critical and will assist in building our international trading future’.²⁹

- 4.35 Evidence was received which emphasised the importance of interoperability, noting that jurisdictions will implement single windows to address local requirements. In this regard harmonisation does not produce a desirable outcome, whereas interoperability ensures that compatible technologically neutral systems can exchange feature-rich data across borders.³⁰

The need to build cyber resilience

- 4.36 There is significant room for improvement in Australia’s response to the risks posed by cyber threats. Robust cyber security measures promote trust and user confidence, providing an environment where digital trade can flourish and drive economic growth.³¹

- 4.37 The importance of a management focus on, not just a technical response to, cyber security and resilience was emphasised by AustCyber’s Ms Price:

27 Mr Rees, Austrade, *Committee Hansard*, 9 February 2018, p. 20.

28 Mr Alexander, Digital Transformation Agency, *Committee Hansard*, 9 February 2018, p. 16.

29 Mr John Gibbon, Acting First Assistant Secretary, Trade and Customs Division, Department of Home Affairs, *Committee Hansard*, 10 May 2018, p. 8.

30 Mr Evans, ANZ, *Committee Hansard*, 17 August 2018, p. 30.

31 *Australia’s International Cyber Engagement Strategy*, p. 23.

So that governance component is critical to make sure that decision-makers are aware of their accountabilities and responsibilities in seeing that cyber-risk is not something that is a tick-and-flick but is in fact quite complex. It's complex, of course, because of the way in which we've digitised our world. It's not enough to simply receive a report and see the dashboard with the reds going down and the greens going up. There is so much more to this, which means that that care factor and the culture around encouraging learning are very important.³²

- 4.38 Similarly, building cyber security and resilience into your overall approach is ideal, if not always seen in practice:

Security by design is always the preference. It's much harder to retrofit security when it comes to IT architecture. It is similar to when you build a building: it is smarter to think about those things at the time. I would say to you that that is a process of maturation in government, just as it is in business. The tech industry generally has taken a much longer time than anyone would have hoped to build security into the foundational products they have.³³

- 4.39 AI Group supports AustCyber's initiatives, but warns regulatory and policy frameworks should carefully balance opportunity and risk, and be consistent with the Cyber Security Strategy to ensure businesses continue to develop and invest in cyber security technology in Australia.³⁴

- 4.40 It is important to focus more on cyber resilience than on a narrow approach to cyber security:

... we're moving our discussion from talking about security to resilience, and that's important, because you can't always be secure but you can make yourself more resilient. We're moving away from a compliance culture to a risk culture and we're moving away from talking about cyber security as a threat to talking about it as an opportunity.³⁵

- 4.41 The key, as in other challenges and opportunities presented by the digital economy, is in providing education and information, and helping both businesses and governments recognise the centrality of cyber security and resilience:

32 Ms Price, AustCyber, *Committee Hansard*, 28 June 2018, p. 2.

33 Mr MacGibbon, ACSC, *Committee Hansard*, 10 May 2018, p. 3.

34 AI Group, *Submission 9*, p. 9.

35 Mr MacGibbon, ACSC, *Committee Hansard*, 10 May 2018, p. 1.

It's important [...] that we make sure that that is the case right now, so that people do have the chance to be educated and learn about why cybersecurity is an important factor of life now. But, over time – over the next couple of years not over the next decade – we do need to normalise it. We need to make sure that we get to a much quicker position of it being an essential part of doing business – like where we were 15 years ago with the workplace health and safety situation [...] It's making sure that, from a governance point of view, the accountabilities are understood and it's understanding that this is much more a risk-management endeavour than it is a compliance endeavour.³⁶

The need to work with global partners

- 4.42 A theme stressed by many of the inquiry's witnesses was the importance of Australia working with its trading partners and multilateral organisations to build a consistent and appropriate trade system that works in the digital economy.
- 4.43 On a broad level, witnesses argued that Australia should continue to emphasise the importance of open trade rather than protectionism:
- To maintain global momentum for trade, the government must continuously pursue trade agreements that increase openness – at the multilateral, plurilateral and bilateral levels. Where necessary, it must be prepared to defend global trade rules by launching international legal action when these rules are violated, even by key allies.³⁷
- 4.44 DFAT outlined some of the roles that Australia is taking in advocating for 'liberalising outcomes for electronic commerce' within the WTO:
- While existing WTO Agreements such as the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS) cover all trade in goods and services, countries like Australia want to see the WTO negotiate multilateral rules specifically focused on electronic commerce, which could complement existing obligations in the GATT and GATS. New rules could ensure, for example, that all WTO Members recognise electronic signatures and do not prescribe the means by which two parties to an electronic transaction authenticate that transaction.

36 Ms Price, AustCyber, *Committee Hansard*, 28 June 2018, p. 2.

37 Export Council of Australia, *Submission 10*, p. 5.

Australia would also like to see rules governing how WTO Members deal with unsolicited electronic messages (spam), and in more complex areas such as the free flow of data and limiting requirements to store data in particular markets.³⁸

- 4.45 The WTO is the best forum for these matters to be decided:
...new trade rules on the digital economy, be they on electronic commerce, technical barriers to trade, intellectual property, international regulatory cooperation or international standards [...] should best be agreed and adopted at the World Trade Organisation. [...] This is for reasons of legitimacy as well as inclusion and so that the economic impact of these rules is felt as widely as possible and can benefit the greatest number of people. Another reason that the WTO is the right place for these rules rather than, say, in FTAs is because of the importance of the public policy exceptions. History has shown us that FTAs have a very weak record on dispute settlement, whereas the dispute settlement system of the WTO is the jewel in the crown.³⁹
- 4.46 Australia played a lead role in digital commerce discussions at the WTO Ministerial Conference in Buenos Aires in December 2017:
[W]e led the recent initiative on e-commerce at the WTO. That initiative attracted the support of 71 members – about two-thirds of global trade...
- 4.47 Australia also prioritises e-commerce in trade negotiations, including the TPP11, the Regional Comprehensive Economic Partnership, the Pacific Alliance bilateral treaty, and free trade agreements with Indonesia and Hong Kong.⁴⁰
- 4.48 On a practical level, Standards Australia led a harmonisation project within APEC for the movement of data across borders, identifying the standards that are required to enable trade amongst the 16 countries.⁴¹

38 DFAT, *Submission 11*, p. 4.

39 Mr Simon Lacey, Vice President, Global Government Affairs, Trade Facilitation and Market Access, Huawei Technologies, *Committee Hansard*, 9 February 2018, p. 35.

40 Mr George Mina, First Assistant Secretary, Department of Foreign Affairs and Trade, *Committee Hansard*, 9 February 2018, p. 20.

41 Mr Varant Meguerditchian, General Manager, Stakeholder Engagement, Standards Australia, *Committee Hansard*, 9 February 2018, p. 28.

Trade agreements in the digital economy

4.49 DFAT also explained that Australia's trade agreements are seen as 'living agreements' which can be reviewed and updated as changes in the trade environment require:

We have just undertaken a very comprehensive amendment of our free trade agreement with Singapore... The agreement was originally struck in 2000. Last year we amended it. One of the big things that we upgraded in that agreement was the treatment of e-commerce. We did include in there a whole range of these rules relating to data that had not been in the original agreement simply because it wasn't an issue back in 2000.⁴²

4.50 Standards Australia is working to promote the harmonisation of digital standards in the Indo-Pacific region.⁴³

4.51 A further way in which Australian trade agreements can help businesses – particularly SMEs – is through working with trading partners to further the WTO's Trade Facilitation Agreement, which requires countries to develop a guide for overseas-based businesses to do business in their countries.⁴⁴

Digital capacity in trading partners

4.52 Australian businesses will also have greater opportunities if all countries have the infrastructure the digital economy requires. As discussed in chapter 2, the Australian Government, through DFAT, has initiatives in place to assist some of Australia's trading partners to improve their digital infrastructure. More, however, can be done:

The implications of government, for instance, prioritising assistance to countries in the Asia-Pacific region in terms of their digital capability and addressing cyber security issues are right on track in terms of assisting our METS sector to be able to gain the benefits of their domestic investments in overseas markets. It was quite frustrating to them to be operating in far-flung places in the world and having to revert back to fairly basic, paper based systems to enable them to exist in those areas.⁴⁵

42 Mr Baxter, DFAT, *Committee Hansard*, 7 September 2017, p. 7.

43 Dr Feakin, Ambassador for Cyber Affairs, *Committee Hansard*, 9 February 2018, p. 1.

44 Mr Colvin, Global Innovation Forum, National Foreign Trade Council Foundation, *Committee Hansard*, 19 October 2017, p. 5.

45 Dr Heyward, METS Ignited, *Committee Hansard*, 8 February 2018, p. 3.

Data duties

- 4.53 For the maximum benefits of the digital economy, electronic transmissions must continue to be exempt from duties as they cross international borders. Currently, a WTO moratorium on countries imposing duties on electronic transmissions is renewed every two years. Stakeholders, including the Australian Government, want to see this policy made permanent.
- 4.54 As the Export Council argued, the two year process is ‘inadequate’, and the agreement should be made permanent ‘sooner rather than later’.⁴⁶
- 4.55 Huawei made the case for the free flow of data across borders, arguing that:
- ... we all win in a world where the internet is global, open and free since a global, open and free internet allows for the free flow of ideas and the spread of new technologies and innovation. It also goes a long way to ensuring the future unencumbered growth of the digital economy and all of the benefits this can bring mankind.⁴⁷
- 4.56 The Information Technology and Innovation Foundation (ITIF) described the free flow of data as ‘the central feature of the global digital economy’ and policies protecting it as critical.⁴⁸
- 4.57 This reflects the feedback DFAT has received from businesses, who note the value of data:
- ... we keep hearing from business that, in the trade law and trade policy spaces [...] the data is the product and the freedom of movement of that data needs to be the objective.⁴⁹
- 4.58 DFAT noted that making this moratorium permanent is Australian government policy.⁵⁰ At the WTO Ministerial Conference in Buenos Aires in December 2017, Australia – along with Singapore and Japan – led a movement to make the moratorium permanent, which garnered the support of 71 countries.⁵¹

46 Export Council of Australia, *Submission 10*, p. 3.

47 Mr Lacey, Huawei Technologies, *Committee Hansard*, 9 February 2018, p. 34.

48 ITIF, *Submission 21*, p. 4.

49 Mr George Mina, First Assistant Secretary, Department of Foreign Affairs and Trade, *Committee Hansard*, 9 February 2018, p. 26.

50 DFAT, *Submission 11*, p. 4.

51 Mr Mina, DFAT, *Committee Hansard*, 9 February 2018, p. 26.

Data localisation and flow

- 4.59 Data localisation laws are requirements that certain types of data are stored in country. Australia, like many countries, has some data storage requirements. On the whole, witnesses suggested that such requirements should be kept to a minimum, and that Australia should work to make this the norm.
- 4.60 The Export Council argued that data localisation laws were misguided:
Governments must ... agree a framework that strikes the right balance between protecting data and allowing it to flow freely between borders. Currently many governments use privacy as an excuse to require data to be held within their jurisdiction. This is fig leaf for protectionism.⁵²
- 4.61 ITIF described data localisation requirements as 'a new barrier to global digital trade', noting that:
Cutting off data flows or making such flows harder or more expensive puts foreign firms at a disadvantage. This is especially the case for small and solely Internet-based firms and platforms that do not have the resources to deal with burdensome restrictions in every country in which they may have customers.⁵³
- 4.62 The Export Council highlighted that it's not only big companies like Google or Facebook who rely on cross-border data flows, but very small businesses too.⁵⁴
- 4.63 Indeed, illustrating the breadth of the digital economy, a report by McKinsey Global Institute estimated that 75% of the value of data flows goes to traditional industries such as manufacturing.⁵⁵
- 4.64 DFAT noted the disadvantages of data localisation requirements and its own work with trading partner nations to discourage the adoption of these policies:
... some governments in our region are putting in place measures that have the potential to significantly dampen international digital trade such as restrictive cyber security measures, onerous privacy requirements, data localisation requirements and censorship. The Department engages these governments to

52 Export Council of Australia, *Submission 10*, pp 3 - 4.

53 ITIF, *Submission 21*, p. 5.

54 Mr Baker, Export Council of Australia, *Committee Hansard*, 15 February 2018, p. 1.

55 Mr Nigel Cory, Senior Trade Policy Analyst, Information Technology and Innovation Foundation, *Committee Hansard*, 21 June, p. 1.

highlight the importance of not unduly undermining trade opportunities.⁵⁶

4.65 Australia's position on data storage when negotiating trade agreements is:

... that data should be allowed to flow freely across the border and there should be no rules that mandate the storage of data in a particular territory. The starting point [is] complete flexibility for business as to how its data is managed [and] flexibility for governments to have rules and regulations for important policy purposes such as privacy protection.

Some of the security agencies... may need to impose rules on how data in Australia is managed. That's something that we insist on in our trade agreements. Another [consideration] relates to prudential reasons. The prudential agencies in Australia may say, 'If you're involved in financial transactions, if you're providing financial services in Australia, you've got to meet the following rules for prudential reasons'. We make sure that that sort of flexibility is allowed as well. There is a balance there that we really take into negotiations.⁵⁷

Data measurement

4.66 Adequately measuring the scope of digital economy activity is crucial to policymaking. The ITIF pointed to some examples Australia could draw on, in conjunction with its trading partners and multilateral organisations, to improve the quality of this data. These included:

- surveys of sellers regarding their overseas sales is 'one of the current best methods for measuring the value of cross-border e-commerce and digital trade';
- the OECD model survey on ICT access and use includes questions about online purchases, to which could be added questions cross-border purchases or sales;
- similarly, Eurostat's 'ICT in Enterprises' survey could, with the addition of more targeted questions, prove useful; and
- a United States Department of Commerce study into measuring the value of cross-border data flows provides recommendations for Australia to consider.⁵⁸

4.67 The ITIF therefore recommended that Australia:

56 DFAT, Submission 11, p. 3.

57 Mr Baxter, DFAT, *Committee Hansard*, 7 September 2017, p. 6.

58 ITIF, *Submission 21*, pp 12 – 13.

... push multilateral organisations, such as the WTO and the OECD, to track barriers to cross-border data flows and digital trade in order to document the extent of their use and to contribute to further analysis of how they impact digital trade.⁵⁹

- 4.68 DIIS noted the importance of internationally consistent standards, including via the World Trade Organisation Treaty on Technical Barriers to Trade, which requires harmonisation and the adoption of international standards where possible. DIIS has responsibility for Australia's implementation of the treaty.⁶⁰

Conclusion

- 4.69 Throughout this inquiry, the Committee heard from many Australians and organisations who have already benefited from the digital economy. Overall, evidence suggests that Australia is well-placed for the ongoing changes and challenges that the digital economy will bring.
- 4.70 However, the Committee also heard concerns that Australia's policy response to these changes is too fragmented, with many different agencies having separate areas of responsibility. While Australia's cyber security policy has been centralised in the Australian Cyber Security Centre, similar levels of coordination in relation to digital trade do not yet exist. The good work that is being done by different agencies is undercut by the difficulty businesses, especially SMEs, have in finding information on export requirements or assistance in the form of grants they can use to build their business.
- 4.71 The single-window trade approach being developed will assist in this regard and will reduce the regulatory burden on Australian businesses. Therefore, the Committee encourages the Government to continue with this program as quickly as possible. One of the key themes the Committee heard throughout this inquiry was the expansion of opportunities which the digital economy can offer for small businesses, who can now sell their goods and services to the world.
- 4.72 The Committee was pleased to hear about programs proposed to encourage young Australians to develop the cyber skills necessary for the 21st century, but equally emphasises that digital skills are workplace skills. All Australians should have the opportunity to access the education and training required for their ongoing participation in the workforce.

59 Mr Cory, ITIF, *Committee Hansard*, 21 June, p. 2.

60 DIIS, *Submission 3*, p. 7.

- 4.73 While some witnesses expressed mixed feelings about the readiness of Australia's international and trade negotiators to operate in the digital economy, the Committee notes that Australia has played a lead role in recent multilateral discussions on data flow, creating international standards and building international agreements that can adapt to the digital economy.
- 4.74 Given the fundamental importance of cyber security and resilience to the operation of the digital economy, the Committee commends the creation of the Australian Cyber Security Centre and the Australian Government's ongoing commitment to improving cyber security measures. The Committee believes that the Australian Government has an important role to play in leading the way on cyber issues, and encourages an increased incorporation of cyber security and resilience measures into broader government activities.

Recommendation 1

- 4.75 **The Committee recommends that the Australian Government, as a matter of priority, creates a single portal of information, with particular regard to exporting digital goods and services, including information about the development of digitally native processes.**

Recommendation 2

- 4.76 **The Committee recommends that the Australian Government, as a matter of priority, creates a single window trading system, with particular regard to exporting digital goods and services. This single window must be developed with a focus on interoperability to ensure rich data flows can be maintained and transmitted across borders.**

Recommendation 3

- 4.77 **The Committee recommends that the Australian Government release its Digital Economy Strategy.**

Recommendation 4

- 4.78 The Committee recommends that the Australian Government continue to take future workforce needs into account in Australia's education system, from school through to tertiary education.

Recommendation 5

- 4.79 The Committee recommends that the Australian Government investigate options to fund and deliver training for those already in the workforce, to give them the skills to fully participate in the digital economy.

Recommendation 6

- 4.80 The Committee recommends that the Australian Government continue to promote digital trade standards, both technical and regulatory, with an emphasis on openness, technological neutrality and interoperability.

Recommendation 7

- 4.81 The Committee recommends that the Australian Government continue to support a permanent moratorium on duties for data flow.

Recommendation 8

- 4.82 The Committee recommends that the Australian Government work within the WTO to develop an internationally consistent system of measuring data flow.

Recommendation 9

- 4.83 The Committee recommends that the Australian Government ensure that all Commonwealth agencies comply with the Australian Signals

Directorate's Essential Eight cyber security and resilience mitigation strategies.

Recommendation 10

- 4.84 **The Committee recommends that the Australian Government investigate ways to assist Australian SMEs to improve their cyber security awareness and resilience levels.**

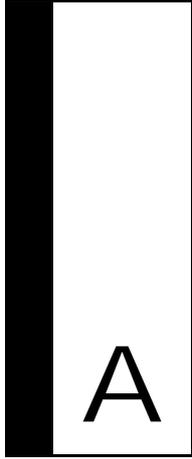
Recommendation 11

- 4.85 **The Committee recommends that the Australian Government require all agencies when developing policy, legislation or trade agreements to consider whether what is proposed is technologically neutral and whether it could create barriers to the digital economy, including by limiting interoperability.**

Mr Ken O'Dowd MP

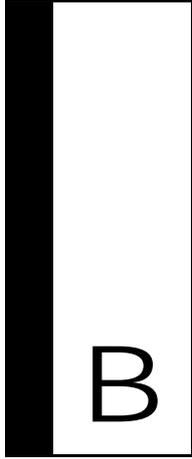
Chair

September 2018



Appendix A - Submissions

1. Uber
2. METS Ignited
3. Department of Industry, Innovation and Science
4. Department of Prime Minister and Cabinet
5. eBay
6. Facebook
7. Northern Territory Government
8. Standards Australia
9. AI Group
10. Export Council of Australia
11. Department of Foreign Affairs and Trade
12. Advanced Manufacturing Growth Centre Ltd
13. ANZ
14. Australian Trade and Investment Commission (Austrade)
15. Department of Home Affairs
16. Australian Institute of Performance Sciences
17. Blockchain Innovation Hub, RMIT University
18. Australian Chamber of Commerce and Industry
19. Kaspersky Lab
20. Global Economic Law Network, Melbourne Law School, University of Melbourne
21. The Information Technology and Innovation Foundation
22. Finder
23. Australian Dental Industry Association



Appendix B – Public hearings

Thursday 7 September 2017 – Canberra ACT

Department of Foreign Affairs Defence and Trade

Ms Jessica Allen, Director

Mr James Baxter, Assistant Secretary

Ms Rachel Boston, Assistant Director

Mr Simon Clayton, Acting Assistant Secretary

Ms Suzanna Fisher, Assistant Director

Mr Toby Lendon, Director

Thursday 14 September 2017 – Canberra ACT

Department of the Prime Minister and Cabinet

Mr Jacob Boyle, Acting Assistant Secretary

Ms Sandra Ragg, Head, Office of the Cyber Security Special Adviser

Mr James Robinson, Acting Senior Adviser

Thursday 19 October 2017 – Canberra ACT

Global Innovation Forum, National Foreign Trade Council Foundation

Mr Jake Colvin, Executive Director

Thursday 7 December 2017 – Canberra ACT

Australian Industry Group

Ms Louise McGrath, National Manager

Thursday 8 February 2018 – Canberra ACT

METS Ignited

Mr Ric Gros, Chief Executive Officer

Dr Brett Heyward, Program Director

Friday 9 February 2018 – Canberra ACT

Austrade

Mr Christopher Rees, Assistant General Manager

Australian Securities and Investments Commission

Mr Mark Adams, Senior Executive Leader

Ms Katharine Goulstone, Senior Manager

Mr Oliver Harvey, Senior Executive Leader

Mr Bharat Patel, Senior Manager

Mr John Price, Commissioner

Department of Foreign Affairs and Trade

Ms Kim Debenham, Director

Dr Tobias Feakin, Ambassador for Cyber Affairs

Ms Caroline McCarthy, Assistant Secretary

Mr George Mina, First Assistant Secretary

Department of Industry, Innovation and Science

Dr Chris Locke, First Assistant Secretary

Digital Transformation Agency

Mr Peter Alexander, Chief Digital Officer

Huawei Technologies Co. Ltd.

Mr Simon Lacey, Vice President

Mr Jeremy Mitchell, Director

Standards Australia

Dr Jed Horner, Policy Manager

Mr Varant Meguerditchian, General Manager

Thursday 15 February 2018 – Canberra ACT

Export Council of Australia

Mr Heath Baker, Head of Policy

Thursday 10 May 2018 – Canberra ACT

Australian Border Force

Ms Erin Dale, Assistant Commissioner Border Management

Australian Cyber Security Centre, Department of Home Affairs

Mr Alastair MacGibbon, Head and Deputy Secretary National Cyber Coordinator

Department of Home Affairs

Mr John Gibbon, Acting First Assistant Secretary

Mr Aled Hall, Acting Assistant Secretary

Ms Christie Sawczuk, Acting Assistant Secretary

Thursday 21 June 2018- Canberra ACT

Information Technology and Innovation Foundation

Mr Nigel Cory, Senior Trade Policy Analyst

Thursday 28 June 2018 – Canberra ACT

AustCyber

Ms Michelle Price, Chief Executive Officer

Thursday 16 August 2018 – Canberra ACT

MTPConnect

Dr Daniel Grant, Chief Executive Officer

Friday 17 August 2018 – Canberra ACT

Amazon

Mr Matt Levey, Head of Public Policy, Amazon Australia

Mr Kevin Willis, Director, Global Trade Services

ANZ Bank

Mr Mark Evans, Managing Director

Mr Michael Lim, Head of Trade and Supply Chain

BSA The Software Alliance

Mr Darryn Lim, Director

Mr Joseph Whitlock, Director

National Energy Resources Australia

Mr Francis Norman, General Manager

Ms Miranda Taylor, Chief Executive Officer

National Retail Association Limited

Ms Dominique Lamb, Chief Executive Officer

NORA Network

Mr Paul Greenberg, Founder and Executive Director

The Nile

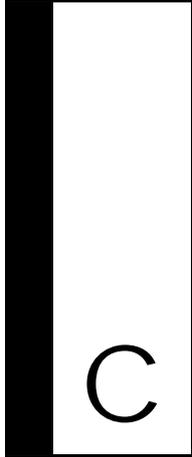
Mr Jethro Marks, Chief Executive Officer

Thursday 21 August 2018 – Canberra ACT

Global Economic Law Network, University of Melbourne

Ms Neha Mishra, Doctoral Candidate and Researcher

Professor Andrew Mitchell, Director



Appendix C - Exhibits

1. Huawei Technologies - *White Paper: Trade Rules and the Digital Economy Summary and Key Points & White Paper: Trade Rules and the Digital Economy*
2. Department of Prime Minister and Cabinet - *2016 Australian Cyber Security Centre Threat Report*
3. Department of Industry, Innovation and Science - *The Digital Economy: Opening up the Conversation*
4. eBay - *Deloitte Access Economics, Platforms, small business and the agile economy and submission to the Australian Productivity Commission Inquiry on collection models for GST on low value imported goods*
5. Confidential
6. Department of Foreign Affairs and Trade - *Australia's International Cyber Engagement Strategy*