AUSTRALIA - SINGAPORE
DIGITAL TRADE STANDARDS

March 2020
THE POTENTIAL FOR **DIGITAL TRADE** GROWTH BETWEEN AUSTRALIA AND SINGAPORE IS EXTREMELY STRONG

- The two countries already have a strong trading relationship ......but there is scope to harness national efforts to digitalise and increase trade between the two economies

- The research focuses not only on ‘digital trade’, but the impact upon overall trade of increased digitalisation and digital process

- Emerging technologies (e.g. AI, Blockchain, 5G) are changing the **scope, speed and scale of trade**, creating **new ‘digital’ trade** avenues and opportunities for Australia and Singapore

WTO estimates digital technology increases trade by 1.8–2%; current research suggests this is extremely conservative and misses many compounding effects that can be enabled through standards.
DIGITAL TRADE IS FAR BROADER THAN E-COMMERCE
FOUR COMPONENTS NEED TO BE CONSIDERED

Digital goods and services
- Items that are stored, delivered, and used in digital formats and typically accessed through online platforms or email
- Apps and Software, Video Telephony Services, Data Management and Analysis

Tangible goods and services delivered digitally
- ‘Traditional’ physical goods that are delivered digitally – either fully or in part
- Books, Entertainment, Remote Healthcare, Online Services such as Travel Booking, Banking

Digital enablers of trade in tangible goods/services
- Facilitate trade ‘invisibly’ to provide greater efficiencies, security, transparency, and traceability (auditability) for transactions
- Wireless Communications, Digital Transactions, Cybersecurity

Emerging transformative digital technologies
- Technologies that have the potential of transforming aspects of trade
- Artificial intelligence, Internet of Things (IoT), Distributed Ledger Technologies (Blockchain), 3D printing
Standards enable businesses to **digitalise** using systems that can **interoperate** and **interconnect** with one another, allowing for **seamless** cross-border trade.

**Benefits to Businesses**

- **New trade markets**
  (e.g. sale of digital goods and services)

- **Lower compliance costs**
  (e.g. reduces number of standards to comply)

- **Economies of scale**
  (e.g. 3D Printing can assist with mass production)

- **Higher productivity**
  (e.g. Blockchain can reduce time, cost and provides traceability across supply chains)

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*Enhanced Value and Volume of Trade*
WIDE-RANGING BENEFITS FROM ALIGNING ON STANDARDS

Benefits of International Standards Alignment

• **Interoperability**: in digital systems for transparency, simplicity, and compliance

• **Mutual Compatibility**: in products, components and services

• **Flexibility and Promptness**: in responding to new challenges or changes

• **Consistent Quality**: of product or service with appropriate safety and security safeguards

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Adopting international standards (e.g. QR code specifications by EMVCo) made it possible for Singapore to link QR code system with regional neighbours for cross-border payments.

Collaboration between Australia and New Zealand on e-invoicing standards helps firms to exchange invoices electronically, with lowered administrative costs and expedited payments with fewer errors.
MULTIPLE AREAS OF MUTUAL BENEFIT EXIST FOR COOPERATION

**Singapore** has issued the Model AI Governance Framework.

**Australia** is leading international development of blockchain standards.

**Singapore** is already championing blockchain across applications to digitalise international commerce.

**Australia** is developing an AI Ethics Framework for businesses and governments. Both are participating in ISO/IEC JTC 1/SC. 42
MULTIPLE AREAS OF MUTUAL BENEFIT EXIST FOR COOPERATION

Australia developed Smart Cities Plan, with initiatives including City Deals, and Smart Cities and Suburbs Program.

Singapore’s ‘Smart Nation’ initiatives include National Digital Identity (NDI) and nationwide sensor platform.

**Australia**
- Smart Cities Plan
  - City Deals
  - Smart Cities and Suburbs Program

**Singapore**
- Smart Nation initiatives
  - National Digital Identity (NDI)
  - Nationwide sensor platform

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**Australia**
- E-payments
- Digital Identity
- Privacy
- Artificial Intelligence

**Singapore**
- Blockchain
- Smart Cities
- IoT
- Cross Border Data
- Data Portability

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Australia Singapore Digital Trade Standards
Multiple areas of mutual benefit exist for cooperation.

**Singapore** has a common QR code specification for e-payments based on EMVCo QR Specifications.

**Australia** has a standardized QR code specification for NPP, also based on EMV Specifications.

**Australia** introduced Consumer Data Right Rules for Open Banking, with plans to extend to other sectors.

**Singapore** proposed Data Portability Obligations, giving consumers control of personal data and for business innovation.
NEXT STEPS

Our research focusses on identifying digital standards that the Australian and Singapore Governments could *jointly* focus on.

Current research is focussed on:

• Investigating areas of digital growth of mutual benefit to both economies
• Estimating the size of digital trade growth in the short-to-medium-term
• Identifying a set of priority digital standards for development

*Research Report to be delivered in Jun-Jul 2020*
APPENDIX
# EXAMPLES OF DIGITAL STANDARDS

<table>
<thead>
<tr>
<th>Digital Trade Areas</th>
<th>Standards for Alignment</th>
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</table>
| **Financial Messaging and Payments**| • SWIFT Message Types (MT) and ISO 15022  
• ISO 8583 - Financial transaction card originated messages - Interchange message specifications  
• ISO 20022 universal financial industry message scheme                                                                                                     |
| **E-Invoicing**                     | • EN16931 – European standard on e-invoicing for public procurement  
PEPPOL BIS Billing 3.0 is a Core Invoice Usage Specification (CIUS) of the European standard for e-invoicing (EN16931)                                      |
| **Digital Trade Enablers**          |                                                                                                                                                                                                                         |
• ISO/IEC 24745:2011 Information Technology - Security Techniques - Biometric Information Protection  
• ISO/IEC 19784-1:2018 Information technology — Biometric application programming interface — Part 1: BioAPI specification  
• FIDO Universal Authentication Framework                                                                                                                                 |
| **Privacy**                         | • ISO/IEC 29100:2011: Information technology -- Security techniques -- Privacy framework  
• ISO/IEC 29101:2018: Information technology -- Security techniques -- Privacy architecture framework  

Australia Singapore Digital Trade Standards
# EXAMPLE OF DIGITAL STANDARDS

## Emerging Digital Trade Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Standards/Proposals</th>
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<tbody>
<tr>
<td><strong>Internet of Things</strong></td>
<td>• IEC 61850:2019 SER - Communication networks and systems for power utility automation (All Parts)</td>
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<tr>
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<td>• IEEE P2418.1 - Standard for the Framework of Blockchain Use in Internet of Things (IoT)</td>
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<tr>
<td><strong>Blockchain</strong></td>
<td>• ISO/TR 23455:2019; Overview of and interactions between smart contracts in blockchain and distributed ledger technology systems</td>
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<tr>
<td></td>
<td>• IEEE P2418.1 Standard for the Framework of Blockchain Use in IoT</td>
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<tr>
<td><strong>Artificial Intelligence</strong></td>
<td>• IEEE Standards Association (SA)'s Autonomous and Intelligent Systems (A/IS) standards P7000 series.</td>
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<tr>
<td></td>
<td>• International Telecommunications Union (ITU), ITU-T Y.3172 (06/2019) Architectural framework for machine learning in future networks</td>
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<tr>
<td></td>
<td>• ISO/IEC 20546:2019 - Information technology - Big data - Overview and vocabulary</td>
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<td></td>
<td>• ISO/IEC TR 20547-2:2018 - Information technology - Big data reference architecture - Part 2: Use cases and derived requirements</td>
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<tr>
<td></td>
<td>• ISO/IEC TR 20547-5:2018 - Information technology - Big data reference architecture - Part 5: Standards roadmap</td>
</tr>
<tr>
<td><strong>Smart Cities</strong></td>
<td>• ISO/IEC 20005:2013 Information technology -- Sensor networks -- Services and interfaces supporting collaborative information processing in intelligent sensor networks</td>
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Example: Accelerating Use of Artificial Intelligence

**Standards make it easier and secure to adopt AI**

**International Standards for AI**
- IEEE Standards Association (SA)’s Autonomous and Intelligent Systems standards P7000 series.

AI increases productivity in economic sectors of interest to Australia and Singapore.

**Economic impact of AI**
- **Singapore**: AI has the potential to become a US$960 million market in 2022 and US$16 billion by 2030 with a CAGR of 42.2%.
- **Australia**: Digital technologies, including AI, are potentially worth AU$315 billion to the Australian economy by 2028.
FUTURE DIGITAL TRADE

Tangible Inputs

Tangible Goods and Services

Digital Inputs

Digital Goods and Services

Supplier / Exporter

Distribution

Customs

Retailer / Importer

Emerging digital drivers

Emerging digital drivers

Emerging digital drivers

Emerging digital drivers

Australia Singapore Digital Trade Standards