



Australian Government

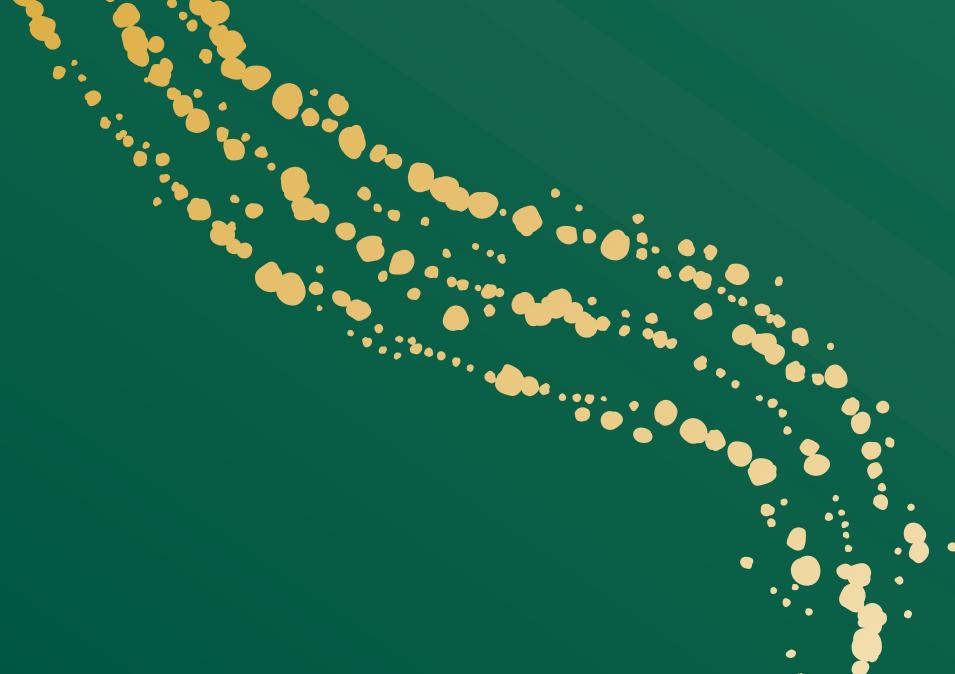
Australian Trade and Investment Commission

Why Australia Digital Technology



AUSTRALIA





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In the spirit of reconciliation we acknowledge the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.

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Publication date: February 2023

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Why Australia Digital Technology

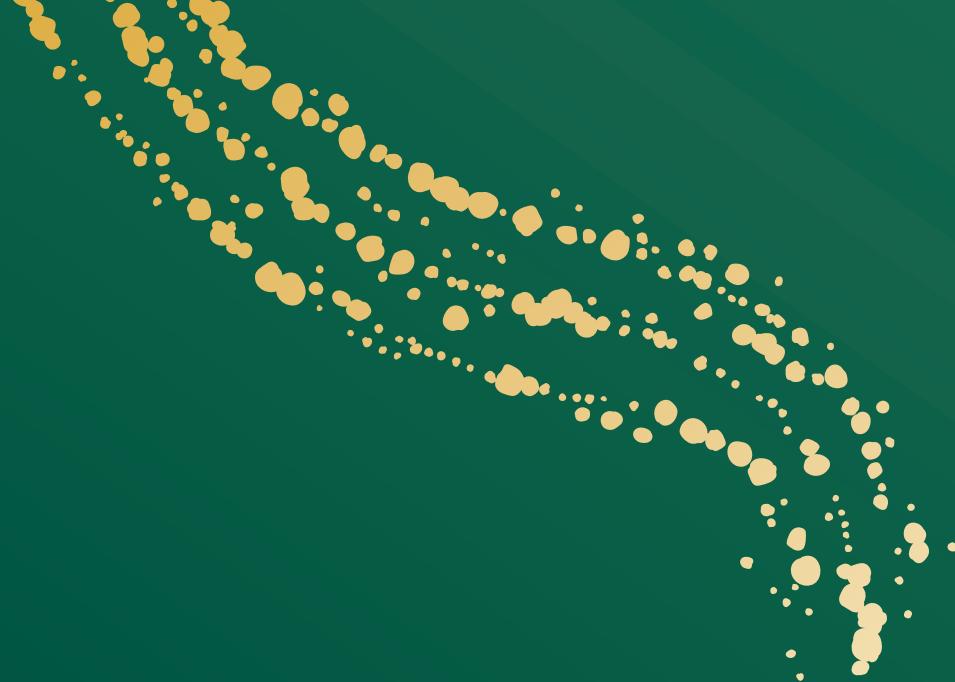
Australia is a great place to develop digital technologies. Our \$167 billion tech sector is growing fast: it's expanded by 80% in just 5 years. We have expertise in SaaS, fintech, cyber security, quantum, digital games, and across the technology spectrum.

Our tech ecosystems are smart and dynamic. Australia has produced global tech giants such as Canva, Atlassian, WiseTech, and many unicorns. Australian capital cities have amazing tech hubs where universities and governments partner with businesses. This is where our irrepressible optimism meets deep skills in science and innovation. We bring great ideas to commercial life.

The Australian Government, states and territories support the tech sector. National science bodies channel public investment into future-critical research. Grants and tax offsets encourage local innovation. Australia offers generous incentives and funding pools to grow the private venture capital market. A strong and transparent regulatory culture promotes innovation while protecting IP.

Above all, we have talent. Our lifestyle attracts tech pioneers from around the world. They build global businesses in Australia. Great tech skills make us a top investment destination for Google, Amazon, Microsoft, BT, NEC, and CISCO. And with deep regional trade ties, we are a springboard for growth into the Asia-Pacific region.

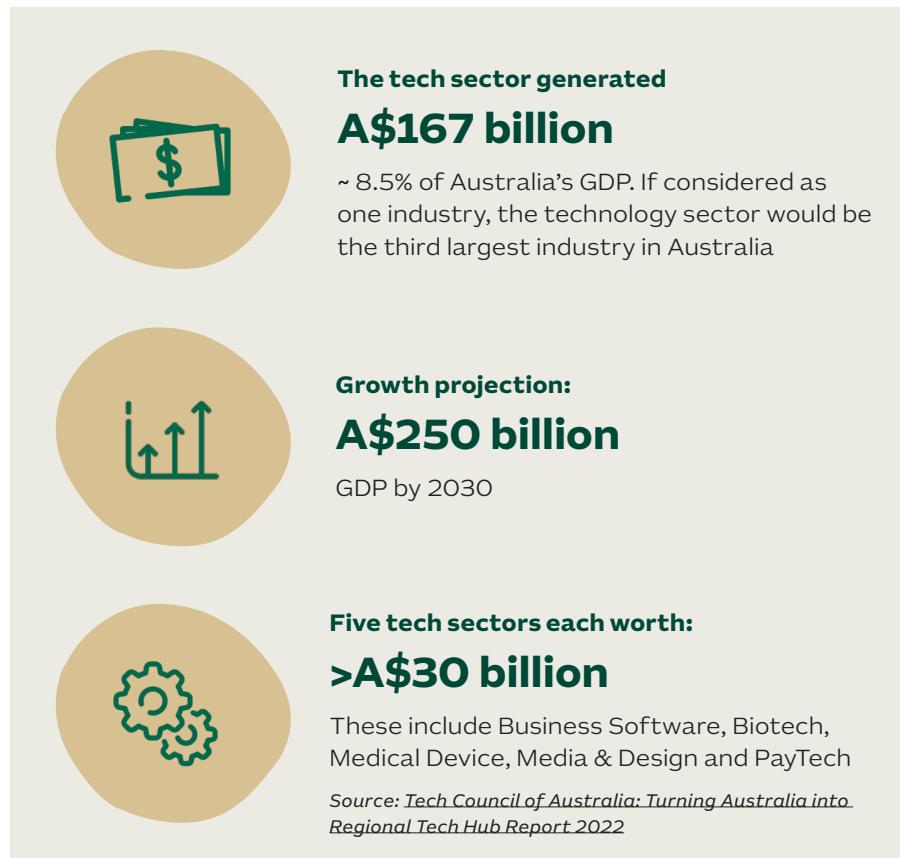




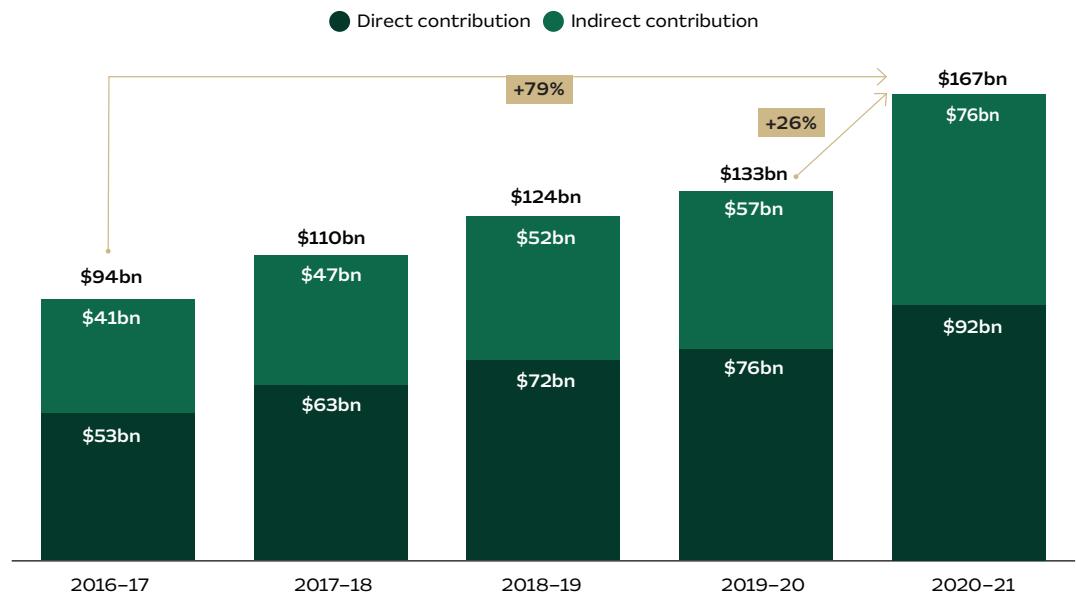
Thriving technology sector
and innovation ecosystem

Australia's A\$167 billion tech sector creates amazing opportunities

Our dynamic tech sector is growing by an average 16% per year. Technology will contribute a predicted A\$250 billion to the Australian economy by 2030.



The Australian tech sector has grown almost 80% from 2016-2021



The growth was four times faster than the rest of the economy

Source: Austrade Why Australia Benchmark Report 2022

Venture capital turbocharged the startup ecosystem

Australian innovators and local tech startups attract global investors. In 2022, Australia showed great resilience despite the global slow-down. Our startup ecosystem is flourishing and early-stage deal activity was stronger than ever.



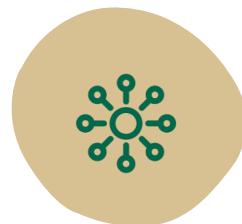
Australia attracted
A\$7.4 billion
in 2022



Australia saw
712
deals in 2022



5
new unicorns
in 2022

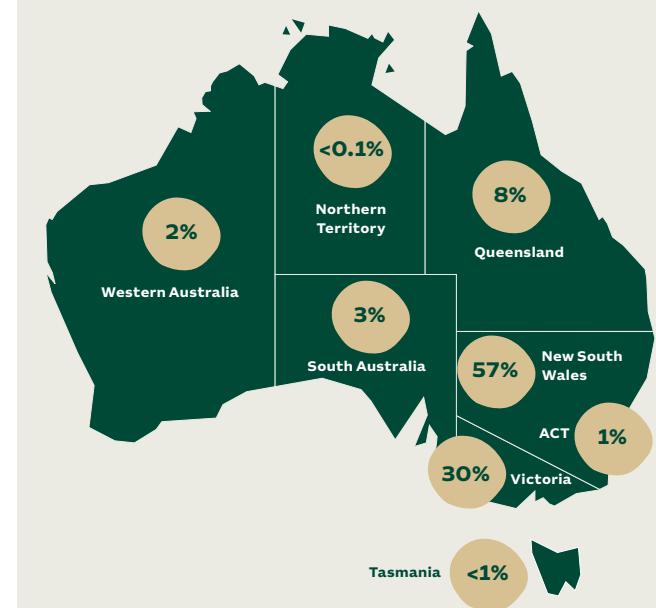


A\$1.2 billion
Raised by **Enterprise/
Business Software**



Strong VC funding

Australian startups based in NSW, Victoria and Queensland received the most funding



Source: Cut Through Venture and Folklore, *The State of Australian Startup Funding 2022*

Australia's tech start-up ecosystem

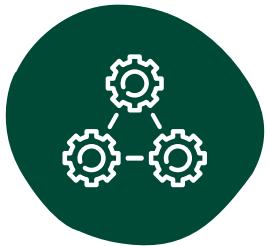
Australian tech giants and unicorns are attracting billions of dollars from global investors.



Our fastest-growing
tech powerhouses
continue to invest
and scale for
global success.



20,000 tech startups
Our creativity powers
an innovative and
connected tech
ecosystem.



21 technology start-up companies reached
“unicorn” status (valued at over US\$1 billion) as of Oct 2022

Global Tech Giant

with market valuation from A\$10 billion to A\$40 billion

- Canva
- Afterpay
- Atlassian
- Wisetech Global



Canva is one of the most valuable start-ups in the world.
(Co-founders Cameron Adams, Cliff Obrecht and Melanie Perkins.)

Unicorns

with market valuation from A\$1 billion to A\$10 billion

- Airwallex
- Rokt
- SafetyCulture
- Culture Amp
- Scalapay
- Employment Hero
- TechnologyOne
- Immutable X
- Zip
- Go1
- Linktree
- Pet Circle

Market valuation as at November 2022. Non-exhaustive list

*Source: Tech Council Australia: Turning Australia into a regional tech hub;
Tracxn, Soonicorn Club 2021*

Our advanced, life-style cities are hubs for tech creativity

Australian universities and institutes partner with business to create innovation precincts. Tech hubs power industry clusters — in medicine, advanced manufacturing, mining and agriculture.



Western Australia

- Australian Automation and Robotic Precinct
- Pawsey Supercomputing Research Centres



South Australia

- Lot Fourteen
- Tonsley Innovation District
- Australian Space Park
- Adelaide Biomed City

Queensland

- The Precinct
- Queensland XR Hub
- Queensland AI Hub



New South Wales

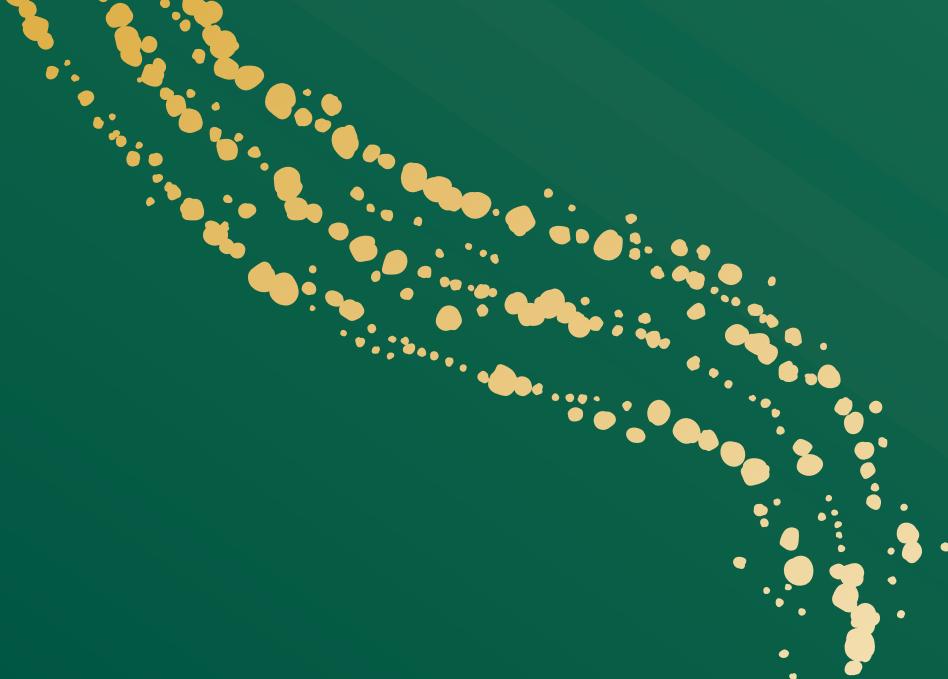
- Western Sydney Startup Hub
- Tech Central Scaleup Hub
- Sydney Startup Hub
- Stone & Chalk
- Fishburners



Victoria

- LaunchVic for startups
- Cremorne Digital Hub
- Melbourne Connect Innovation Precinct
- Arden Precinct
- Fishermans Bend

non-exhaustive list



Advanced and stable
digital economy

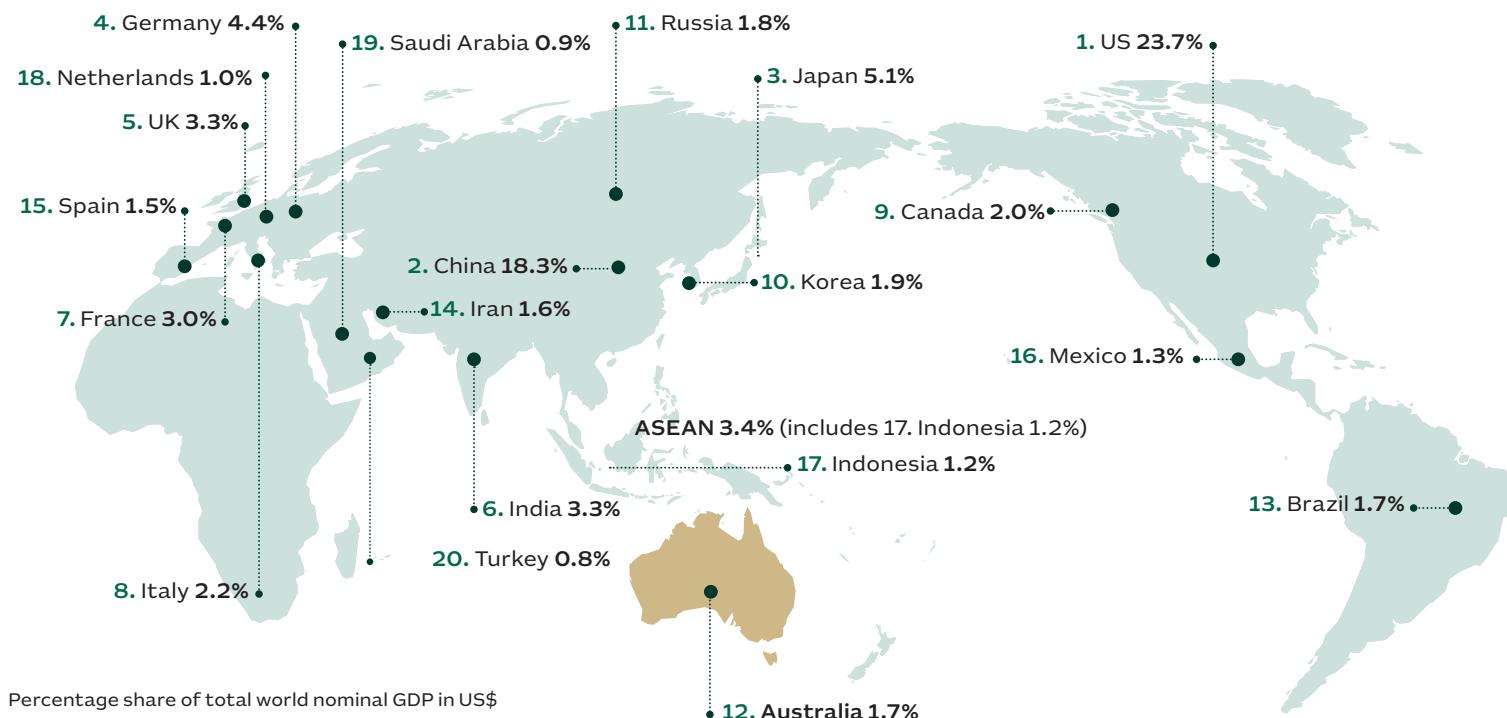
Australia is the world's 12th largest economy

Our resilient economy is a magnet for foreign direct investment. Over 70% of our trade is with fast-growing economies in the Asia-Pacific region. We are a springboard for regional business expansion thanks to location, trade ties and language skills.

12th largest economy

Australia was the world's 12th largest economy in 2021. Nominal GDP was around A\$2.2 trillion (US\$1.6 trillion) in 2021. Australia was home to just 0.3% of the world's population, but accounted for 1.7% of the global economy.

World's largest economies 2021



Notes: 1. Across 196 economies. 2. The GDP for the top 20 largest economies was US\$78,346 billion or 81% of the world's GDP in 2021.

3. The GDP for the rest of the world was US\$18,731 billion in 2021 or 19% of global GDP.

Sources: International Monetary Fund, 2022; World Economic Outlook October 2022; Austrade.



Sources:

* EY Global COVID-19 Economic Index

** Investment Monitor, Global FDI Annual Report 2022

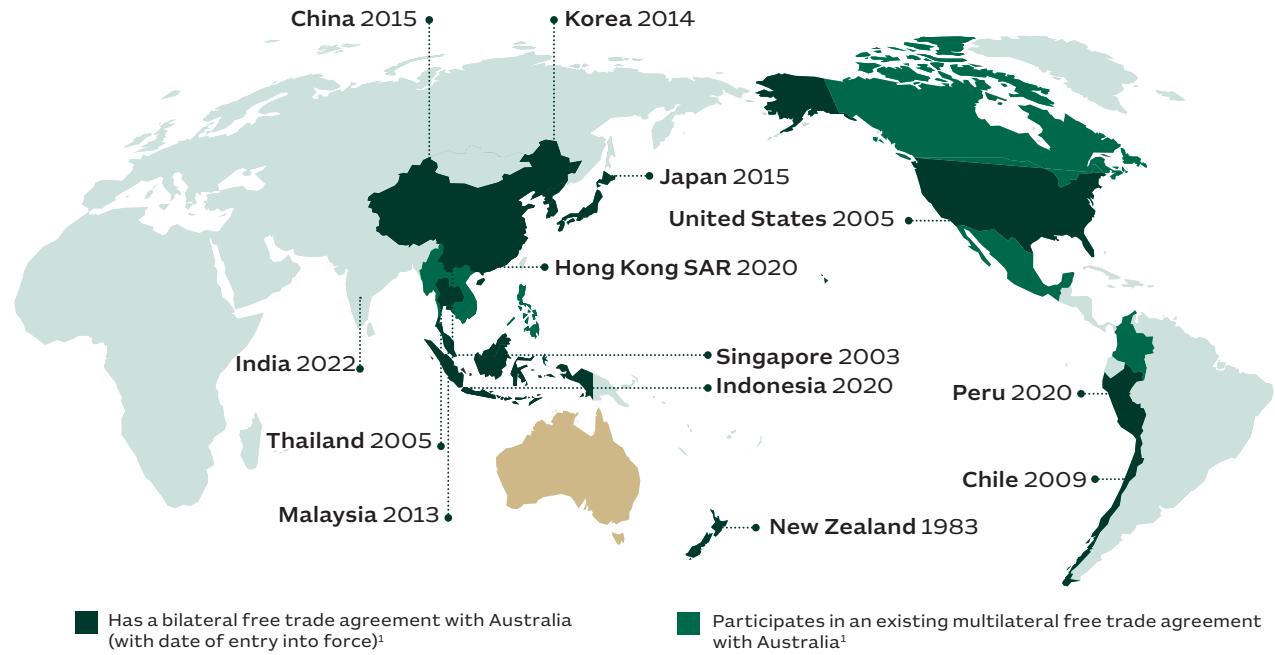
A strategic location for APAC expansion

Austrade facilitated A\$7.4 billion FDI projects, creating 22,000 jobs in 2022. Our winning factors are our geographic edge and trade links with the fast-growing APAC region.

Source: Austrade's Trade and Inward Investment Results 2021-2022



Australia's free trade agreements



Source: Austrade Why Australia Benchmark Report

Investors benefit from advanced digital infrastructure

Australia ranks in the top 10 nations globally for 5G connected devices, data centres, telecoms investment and digital cities.



World-class digital infrastructure

Our infrastructure is intelligent and conducive, leading to greater opportunities for investment.

Telecommunications Network



3rd

in 5G connected devices per capita globally

Source: Deloitte, Mobile Nation 2022



4th

Investment in Telecommunications

Source: IMD World Digital Competitiveness Ranking



8th

Global Data Centre Market Comparisons

Source: Cushman & Wakefield Global Data Centre Market Comparisons Report



7th

Top Digital Cities

Sydney ranked 7th across connectivity, services, culture and sustainability

Source: The Economist, Digital Cities Index 2022

Australia is a solid and reliable foundation for overseas investors

We score highly in rankings that investors care most about. Our regulatory frameworks are transparent and business-friendly. Our legal systems protect IP.

National Cyber Power Index 2022



5th
Most Powerful
Cyber Nation

Australia demonstrated strong capabilities for areas:

- 1st for Defence
- 4th for Intelligence
- 8th for Commerce
- 8th for Norms and Standards

Source: *National Cyber Power Index Report 2022* by Harvard University



Australia's core strength

Our stable regulatory environment

Australia compared well in regulatory stability – ahead of developed economies such as Germany, Singapore, Japan, UK, and US.

Source: *Austrade Why Australia Benchmark Report*.

Australia rose in the IMD World Digital Competitiveness Ranking 2022



1st
Country credit
rating



5th
Software piracy
controls



5th
Regulatory framework
for starting a business



5th
Stable regulatory
environment

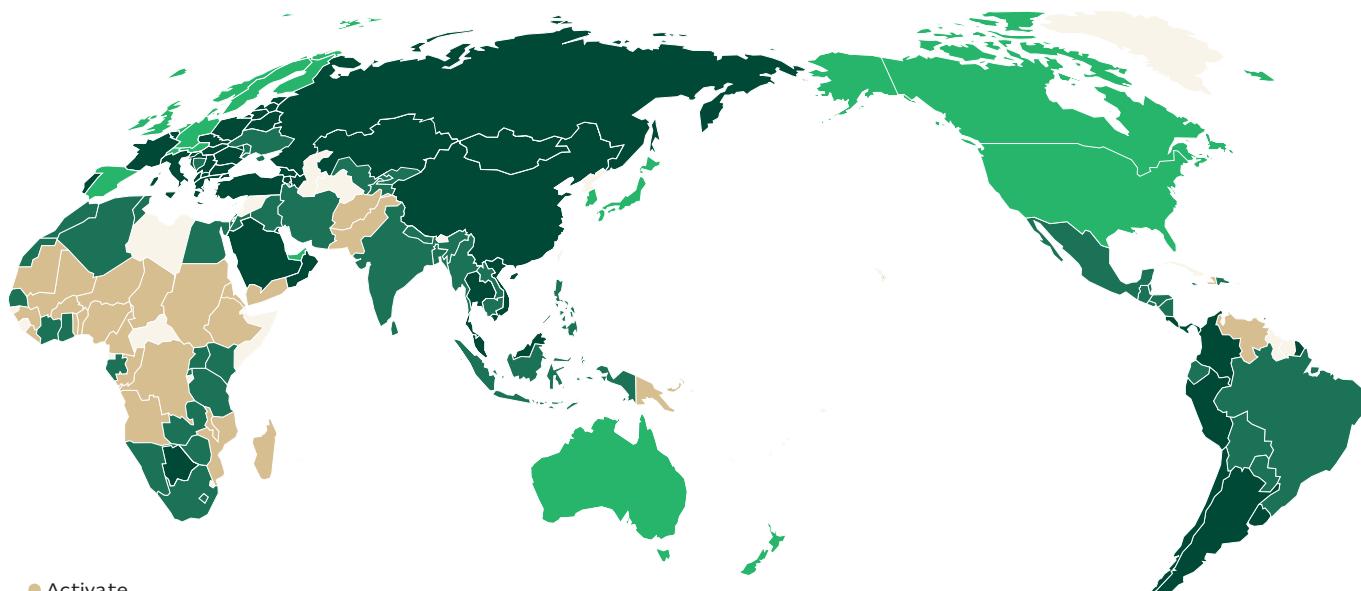
Source: *IMD World Digital Competitiveness Ranking 2022*; *The World Bank, Worldwide Governance Indicators 2021*

One of the world's top countries for digital readiness

Australia invests heavily in digital capabilities. The result: we reached our highest stage of digital readiness. Australia ranks 6th globally for human capital, and 9th for startup-friendly environment.

Australia is rated at the highest stage of digital readiness (CISCO Digital Readiness Index)

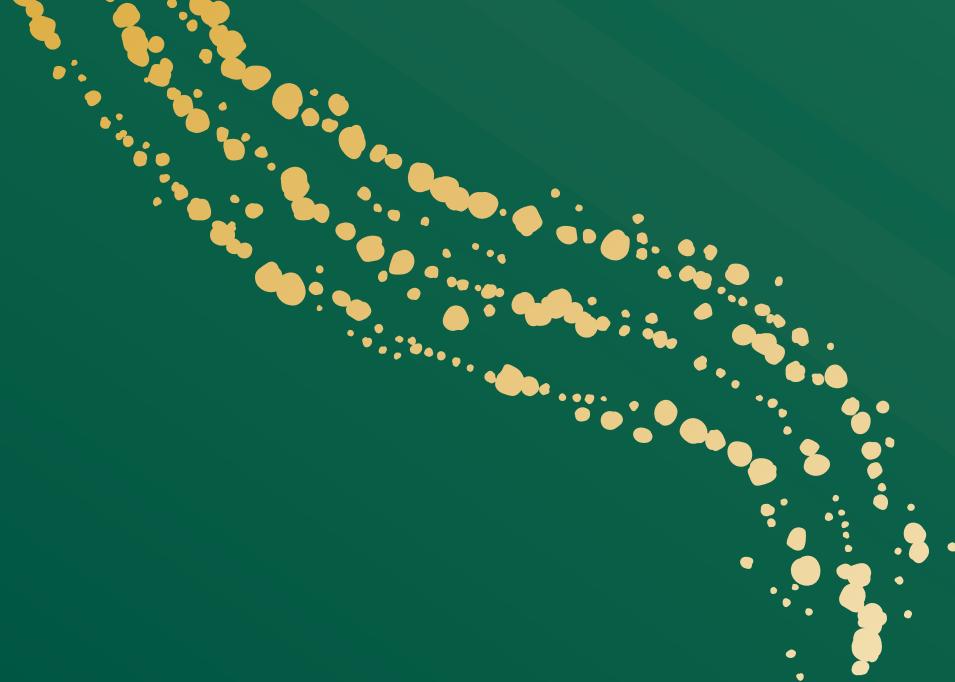
Australia is among the developed economies to reach Amplify stage: the highest stage of digital readiness.



- Activate
- Accelerate (low)
- Accelerate (high)
- Amplify
- No data



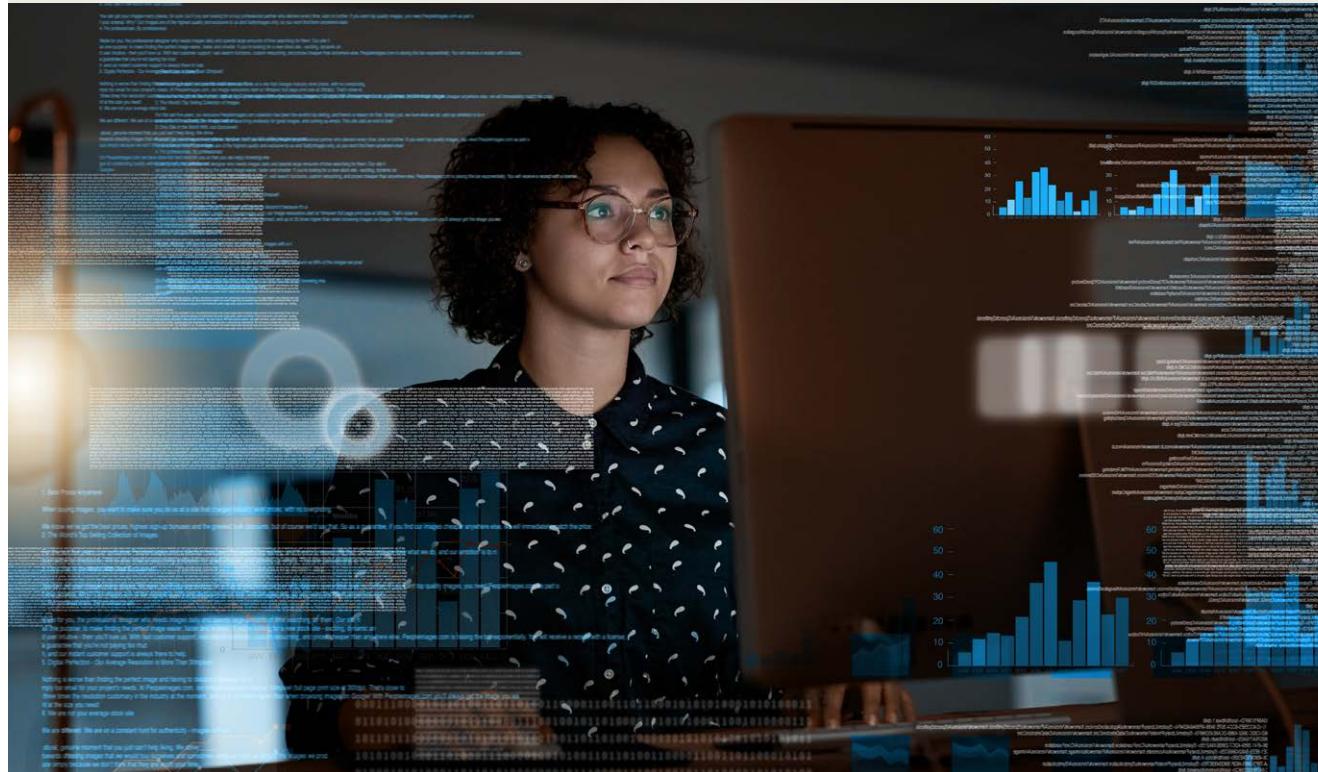
Source: CISCO Digital Readiness Index 2021



A nation of digital adopters

Australian businesses are big IT spenders

Australian businesses were predicted to increase IT spend by 13%, compared to 4% globally. They invest heavily in IT infrastructure, software, and data capabilities.



Riding the global waves of digital adoption

We've seen strong digital uptake from Australian enterprises. They are upgrading their modern IT infrastructure, software-defined solutions, and data capabilities.



IT spending 2022 **\$117 billion**

13% increase from 2021
(compared to global growth rate of 4%)



Devices **\$17.2 billion**



Data Centre Systems **\$4.0 billion**



IT Services **\$41.5 billion**



Software **\$29.2 billion**



Communications **\$25.3 billion**

Source: CRN, Aussie IT spend to grow 13 percent to A\$117 billion in 2022

A nation of early adopters

Australia ranks 4th as the world's most attractive online consumer market. We shop online, we love mobile broadband, and we helped pioneer buy-now-pay-later technology.



**Ranked
4th**

as the world's most attractive
online consumer market
(just behind South Korea, UK and US)

*Source: Euromonitor – Digital Landscape
in Australia*

82%

of Australian households
shop online

*Source: AustPost, Insider Australia's
Online Shopping, eCommerce Industry
Report 2022*

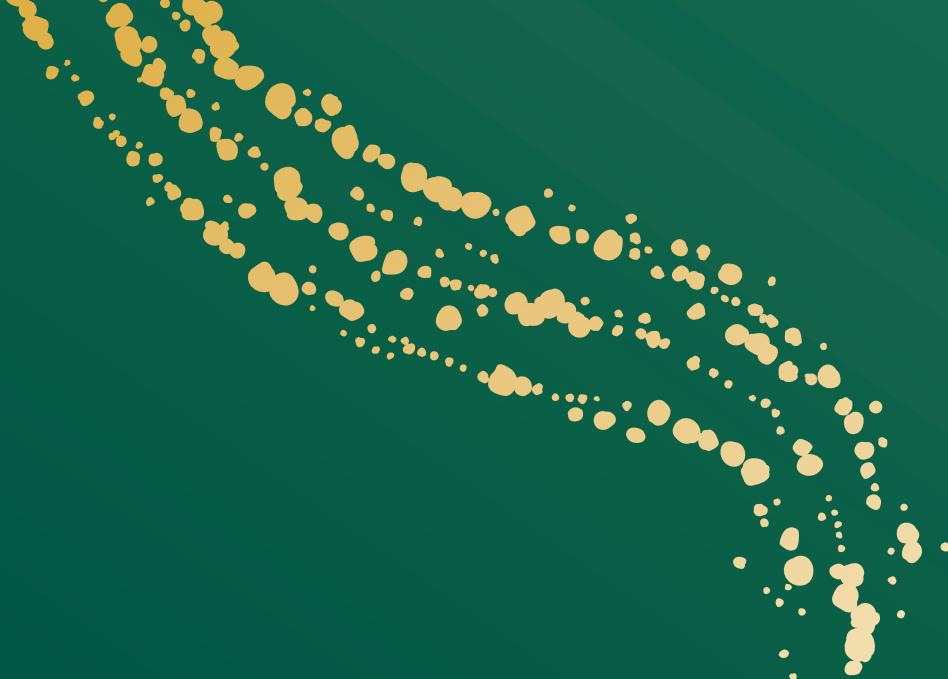
**Ranked
9th**

globally for mobile
broadband subscribers

*Source: IMD World Digital Competitiveness
Ranking*

**Early adopters in
digital payment**

e.g., buy-now-pay-later and
mobile wallets



Talented and diverse workforce

Tech talent in Australia

1st

Australia ranks 1st in the OECD for our capacity to attract and retain highly educated workers

9th

Australia ranked 9th in the Global Talent Competitiveness Index 2022, ahead of UK, Germany and Canada.

1st

Australia has the highest number of new ICT students per capita among the OECD nations. It ranked 2nd in the number of ICT graduates per capita.

Innovative, tech-savvy talent



625,660

ICT Professionals



66,947

workers skilled in
cyber security,
information and
network security

Diverse, highly skilled workforce



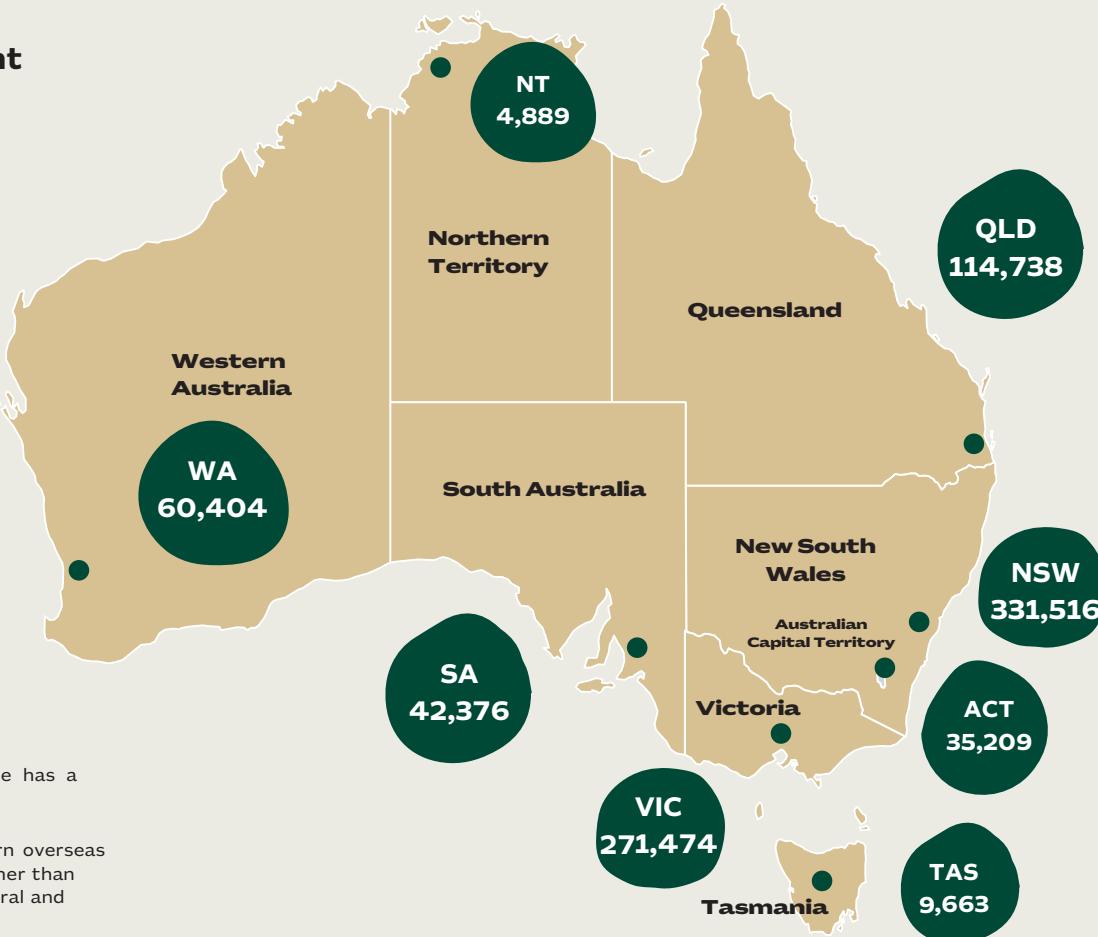
Ranked **2nd** in the net flow of international students



~47% of Australia's workforce has a tertiary qualification



45% of tech workers were born overseas and 32% speak a language other than English. We've got great cultural and linguistic diversity!



870,268

tech talent workforce

Growing the labour pool to

1.2 million by 2030

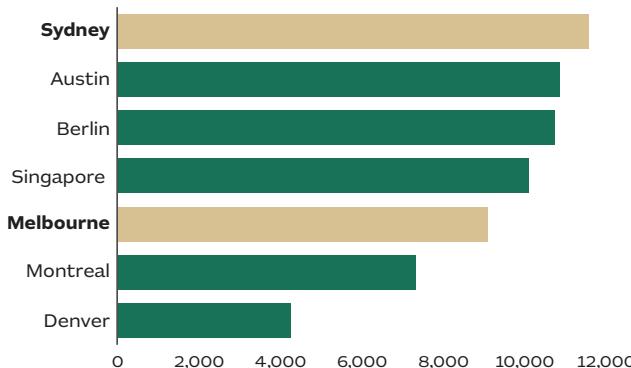
Australian Government pledges:

- 465,000 fee-free TAFE places
- 20,000 additional university places
- 195,000 places for skilled migration

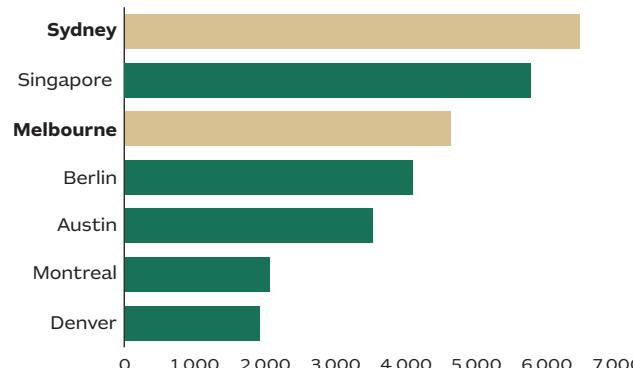
Greater pool of experienced tech talent

Australian cities have a greater pool of experienced tech workers compared to other global tech hubs.

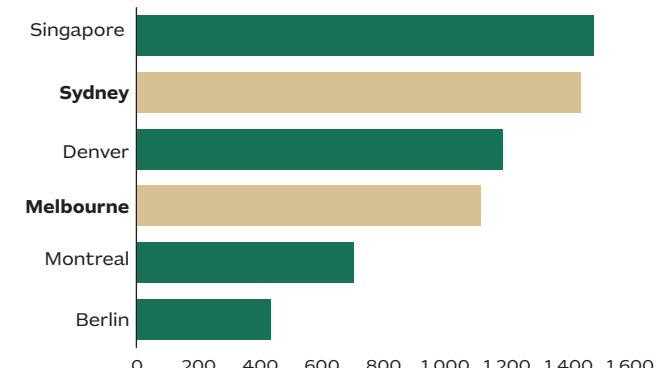
Software Development professionals with 10+ years of experience, by location of employment



Product Management professionals with 10+ years of experience, by location of employment

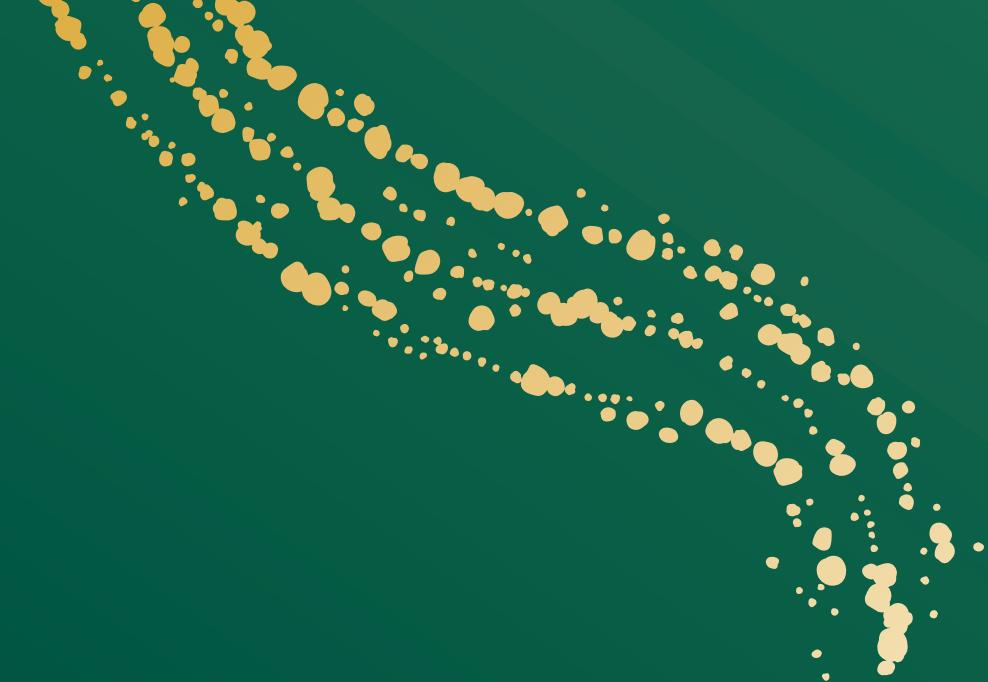


Cyber Security professionals with 10+ years of experience, by location of employment



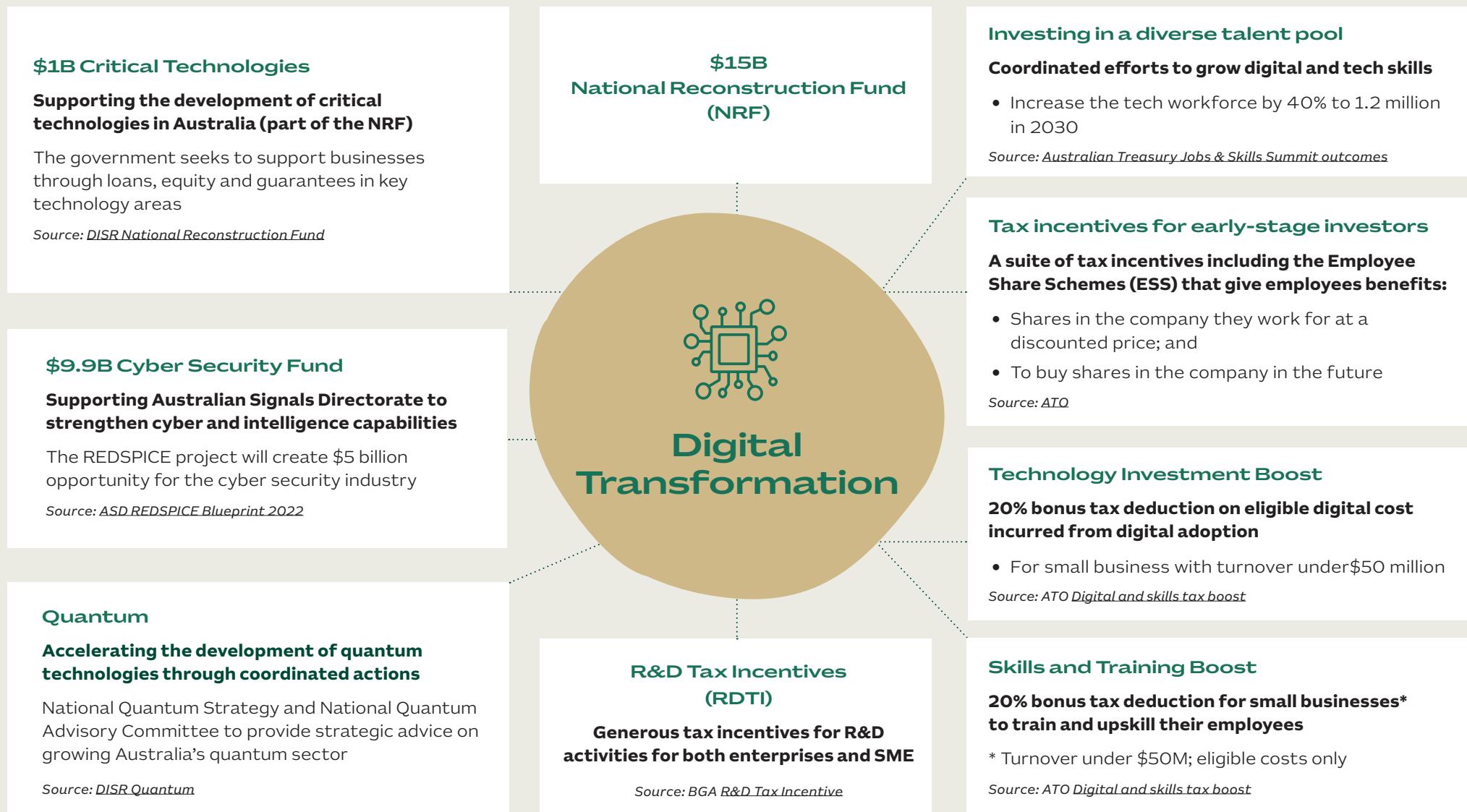
Sydney takes the lead in offering high-skilled and experienced tech workers in software development and product management.

Source: LinkedIn Talent Insights



Government driving digital transformation

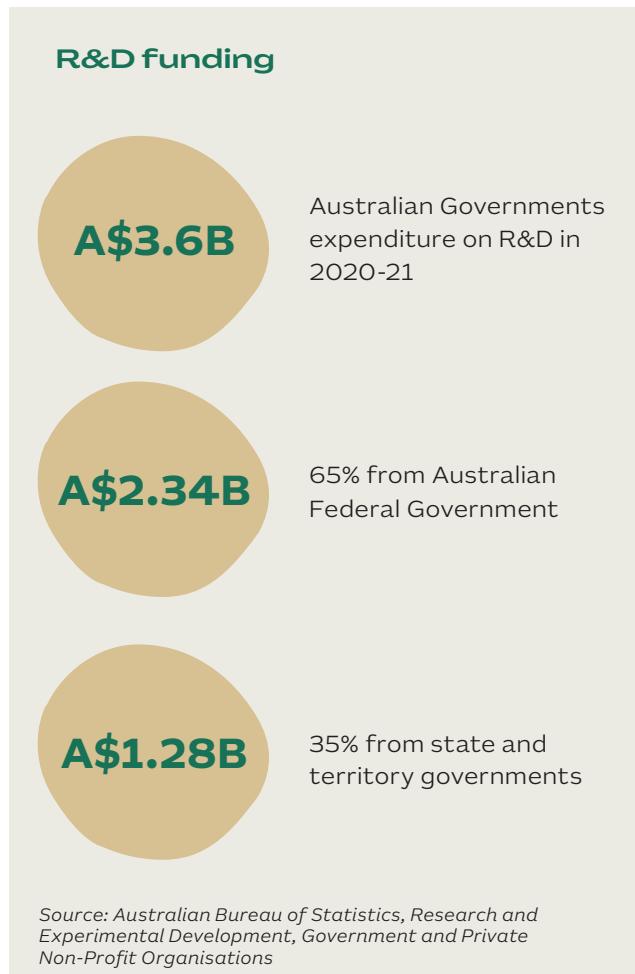
Government's strong support for digital investment



NB: some of the measures are not yet law.

Tech is a priority sector for R&D support

Australia's state and territory governments partner with industry to incentivise R&D in technology. Meanwhile, global tech is a keen investor in Australian technology hubs, thanks to high skills availability.



R&D excellence in multiple fields of technology

Australia attracts top-grade academic researchers. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) helps focus investment in deep-tech and future-critical industries.

Australian universities

The University of Melbourne, the University of Sydney, the Australian National University, UNSW, and University of Queensland are in the global top 50 universities.

5 Australian universities in the Top 50 globally



Source: 2022 QS World University Ranking

National Research Centres



TOP 1%

of the world's scientific institutions in
15 of 22 research fields



Australia's national science agency

Leading research expertise and capabilities across science and tech

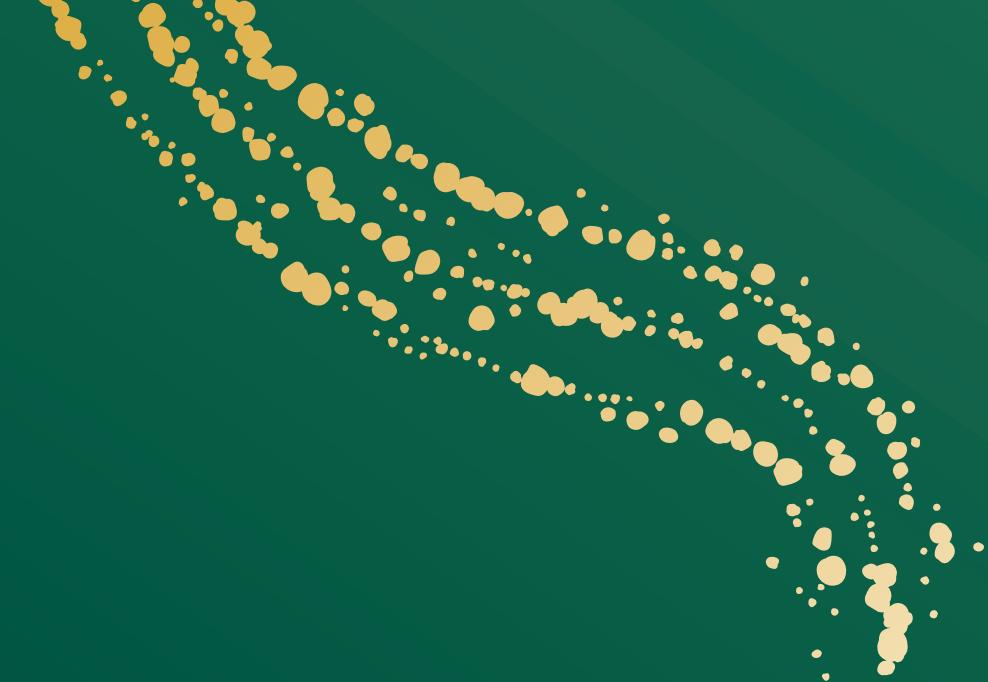


CSIRO's data and digital specialist arm



Leads Australia's AI adoption and development

Source: CSIRO Annual Report 2021

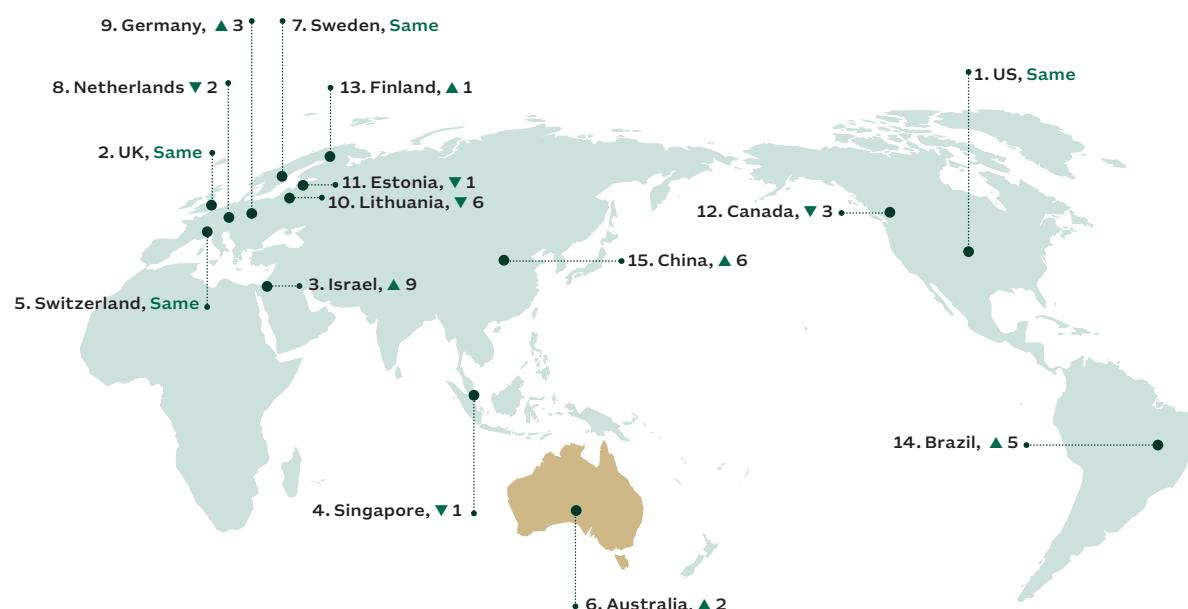


Opportunities across the technology landscape

Australia's 800 fintech companies create a global hub

Australia now ranks 2nd in the Asia-Pacific as a fintech hub, and 6th globally. We are great fintech innovators – thanks to our outsized, A\$10 trillion financial sector and consumers who are early fintech adopters.

Ranked #6 in the world and #2 in Asia in global fintech ranking



One of the best ecosystems in the world



Fintech companies
A\$4+ billion
industry



Fintech companies
in Australia are
foreign owned

Source: *Austrade News*

Global fintech hub ranking

#11th – Sydney

#25th – Melbourne

Source: *Findexable, Global Fintech Rankings, 2021*

Growing domestic demand and policies that encourage innovation

- Financial institutions are looking for innovative solutions and partnerships to transform Australia's A\$10 trillion financial services industry
- A stable regulatory environment with policies that encourage innovation including an Enhanced Regulatory Sandbox and Consumer Data Right (Open Data)
- Australia is a strategic location to capture the growth of fintech in the Asia-Pacific – e.g. Australia-Singapore Fintech Bridge

Clear pathways to enter the Australian market

- Forging alliances and investment partnerships with large banks, incumbent institutions and start-ups to solve customer problems
- Tapping into opportunities from rapid adoption of digital platforms and payments solutions by businesses and consumers

A global leader in 5G rollout

Australia will have 95% population coverage for 5G by 2025. We have the infrastructure and capabilities to be a test-bed for 5G innovation — in mining, healthcare, transport, utilities, and other industries.

Benchmarking 5G development in Australia

3rd globally

connected devices on a per capita basis

95%

connected devices on a per capita basis

7th / 65 countries

Most extensive 5G Subscriber uptake, latency and speed

4,000+

Operational 5G base stations deployed as at 2021

Sources: Deloitte Mobile Nation 2022; Telstra, T25 Strategy; Mobile Magazine 2022



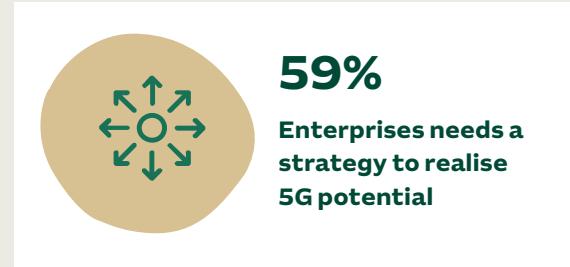


The Australian 5G innovation ecosystem

- Nokia - 5G Industrial Incubation Lab
- TPG Telecom – 5G Innovation Lab
- Optus, 5G Innovation Hub
- Telstra, Innovation Centre

non-exhaustive list

5G adoption across industry is nascent yet 5G has the potential to unlock billions of dollars in uplift



- Healthcare **\$29B**
- Info, media & telecom **\$18B**
- Manufacturing **\$10B**
- Mining **\$18B**
- Transport **\$13B**
- Utilities **\$6.0B**

Source: Austrade and PwC economic modelling of GVA uplifts by 5G, 2022

Strong government support for regional connectivity (AUD)

- Australian Government **\$210M**
- Victorian State Government **\$550M**
- NSW Government **\$400M**
- Government of Western Australia **\$48.6M**

Source: Australian Regional Connectivity Program; NSW Government, Regional Digital Connectivity Program Victoria State Government, Connecting Victoria Government of Western Australia, WA Regional Digital Connectivity Program

Market entry pathways

- Co-invest with domestic industries and telco companies to accelerate 5G innovation such as signal propagation and slicing
- Use Australia as an OECD-market test bed for 5G-enabled innovation

Source: Deloitte, Advanced Wireless Survey 2021

World's 2nd biggest FDI market for cyber security

Australia is a big supplier of cyber security technologies. We are a big consumer as well, with a growing cyber market driven by regulation. Defence alliances with the US, the UK, and neighbours in Asia-Pacific require best-in-class cyber skills.

Fast-growing market demand



Australia delivered the world's 9th largest revenue in cyber, growing at 11% per year to 2026

Source: AustCyber, Australia's Cyber Security Sector Competitiveness Plan 2022

60% of Australian companies will increase cyber budgets in 2023

Source: PwC, Cyber Security Digital Trust 2022



World's 2nd largest FDI market in cybersecurity (2017-2021)

Source: FDI markets analysis 2022



World's 5th Most Powerful Cyber Nation

A large pool of high-skilled tech talent



66,947

Workers skilled in cyber security, information and network security

Source: Deloitte, Australia's Digital Pulse 2022



1.2 million

Australia will grow the tech workforce by 40% to 1.2 million by 2030

Source: Australian Treasury: Jobs & Skills Summit outcomes

Strategic location to grow global cyber operations

- Regional leader in global alliances
- AUKUS pact – Australia, the UK, the US
- QUAD – Australia, the US, India and Japan
- 24-hour cyber security centres

Co-investment opportunities

- Uplift national security and critical infrastructure with Australian Cyber Security Centre (ACSC) and Australian Signal Directorate (ASD)
- Invest and co-design solutions with Cyber CRC
- Leverage AustCyber and CyRise's accelerators
- Co-develop solutions with CSIRO and universities



Evolving regulatory framework



2,000+

Critical Infrastructure entities to comply with Security of Critical Infrastructure ACT (SOCI)

Source: Australian Financial Review (AFR)



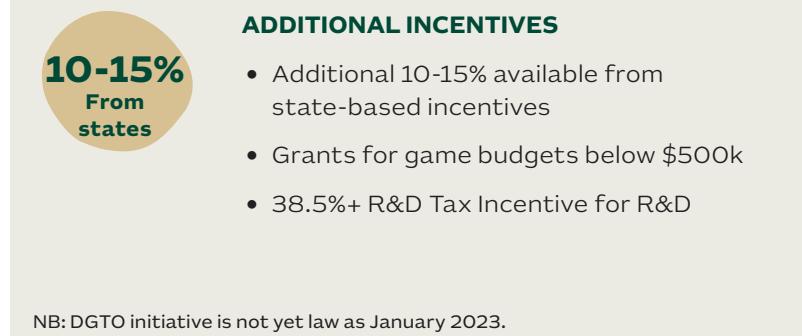
A\$5 billion

REDSPICE initiative opens opportunity for the industry

Source: ASD, REDSPICE Blueprint 2022

Tax incentives power a smash-hit digital games industry

Overseas investment partners with our creative nous, triggering a renaissance in digital games creation right across Australia. Government support helps. The Federal Government will offer a 30% tax offset incentive. State-level support can take this to 40-45%.



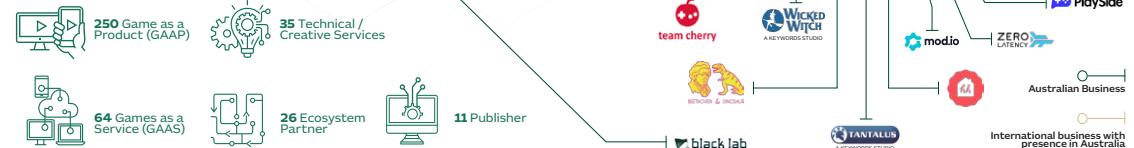
Our amazing industry

Tap into a thriving ecosystem

405
COMPANIES

6 LARGE
28 MEDIUM
76 SMALL
297 MICRO

BUSINESS MODELS



Talent

200,000

Software engineers

100,000

IT & Creative Arts graduates

3,000

Game development graduates

Source: Austrade: Level Up – Our 2022 guide to the digital games industry in Australia

Australia's rapid uptake of digital services

Almost half of our top digital services companies are foreign-owned, ensuring Australia's digital economy reflects world-leading solutions and our workforce is globally competitive.

Australia recorded healthy domestic growth

A\$117 billion

IT spending in 2022, 13% increase from 2021
(global growth rate was 4%)

A\$41.5 billion

IT Services spending ~35% of the total IT spending

Source: CRN, Aussie IT spend to grow 13 percent to A\$117 billion in 2022



Australia's foreign direct investment 2019-21

Ranked 4th in attracting FDI in Software & IT Services globally between 2003-2020

FDI projects growing in scale from 2019-2021



In average jobs per project: 81



In average CAPEX per project: \$38M

FDI investment activities are growing rapidly in 2021



JOBs
In 2021
↑ 46% from 2019



FDI CAPITAL
In 2021
↑ 14% from 2019

FDI in Digital and IT Services significantly contributes to Australia's employment

45 out of 100 top digital services companies in Australia are **foreign owned**

69% employees are **hired by foreign investors** in top 100 digital service companies

38,595 estimated number of employees **hired by top 10 foreign investors**

FDI success stories

NCS Singapore

4 strategic acquisitions in Australia

- ARQ for A\$290M for its cloud, data & analytics and digital services
- Dialog Group for A\$325M for its IT services
- Riley for its consulting capabilities in Google cloud applications
- Eighty20 Solution for its capabilities across Microsoft platforms

Bukalapak

Establish a R&D Tech Centre in Melbourne

- Tap into Australia's tech and innovation capabilities and talent

Source: Austrade FDI Market Analysis – Digital and IT services

Investors power rapid growth in quantum technology

Australia has 30+ years of global leadership in quantum research. Eight universities are performing quantum physics research well above world standard. We have a track record for growing university spinoffs.

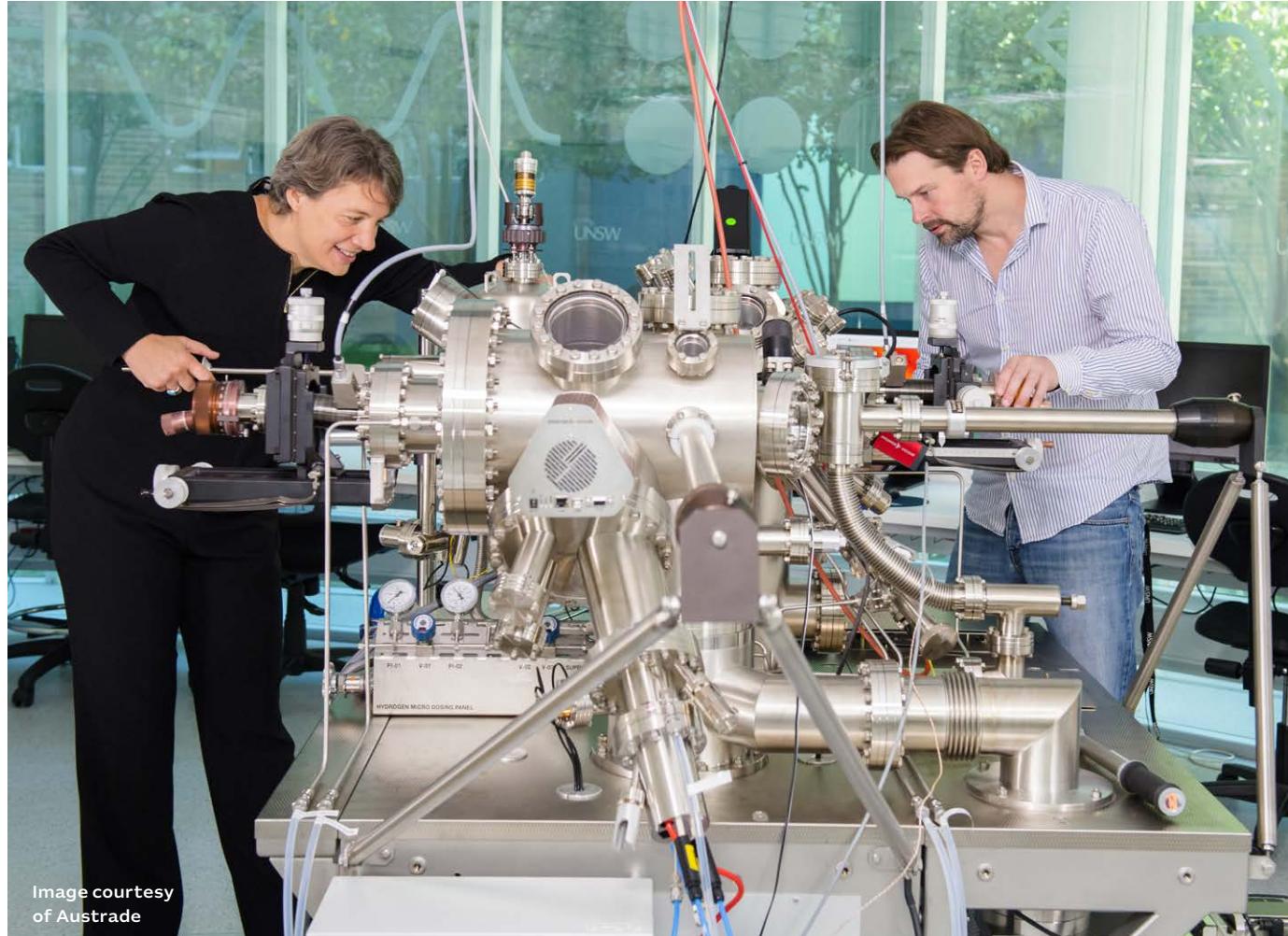


Image courtesy
of Austrade

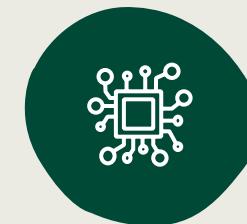
Quantum technology industry

A\$6 billion quantum technology industry in Australia by 2045

19,400 jobs by 2045

Source: CSIRO, 2022 updated economic analysis, Australia's quantum technology set for growth

Strong government support



A\$1 billion

Funding to grow critical technologies, including quantum

- National Quantum Strategy
- National Quantum Advisory Committee
- Australian Quantum Alliance

Source: DISR Quantum DISR National Quantum Advisory Committee Tech Council of Australia, Launch of The Australian Quantum Alliance

Globally, quantum computing will record CAGR 30.8% growth to deliver US\$3,180.9M value by 2028 *Fortune Business Insights*

Centres of excellence and research institutions driving global collaborations

- Centre for Quantum Computation & Communication Technology (CQC2T)
- Engineered Quantum Systems (EQUS)
- Sydney Quantum Academy
- Australian Quantum Software Network
- CSIRO
- Pawsey Supercomputing Research Centre
- Centre of Excellence in Quantum Biotechnology

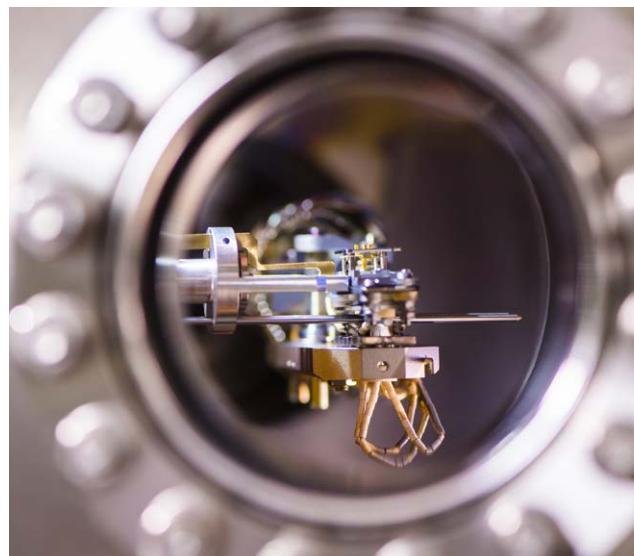
non-exhaustive list

Australian quantum companies are making waves globally

Silicon Quantum Computing

Founder: Michelle Simmons

- **Technology breakthrough:** SQC delivered the world's first integrated circuit manufactured at the atomic scale in June 2022



Q-CTRL

Founder: Michael Biercuk

- Spinoff of University of Sydney, 2017

Quantum Brilliance

Founder: Andrew Horsley, Mark Luo, and Marcus Doherty

- Spinoff of Australian National University, Canberra, 2019

Australia's quantum advantages



30+ Years of leadership in quantum research



25+ Quantum research institutions

Source: Austrade analysis

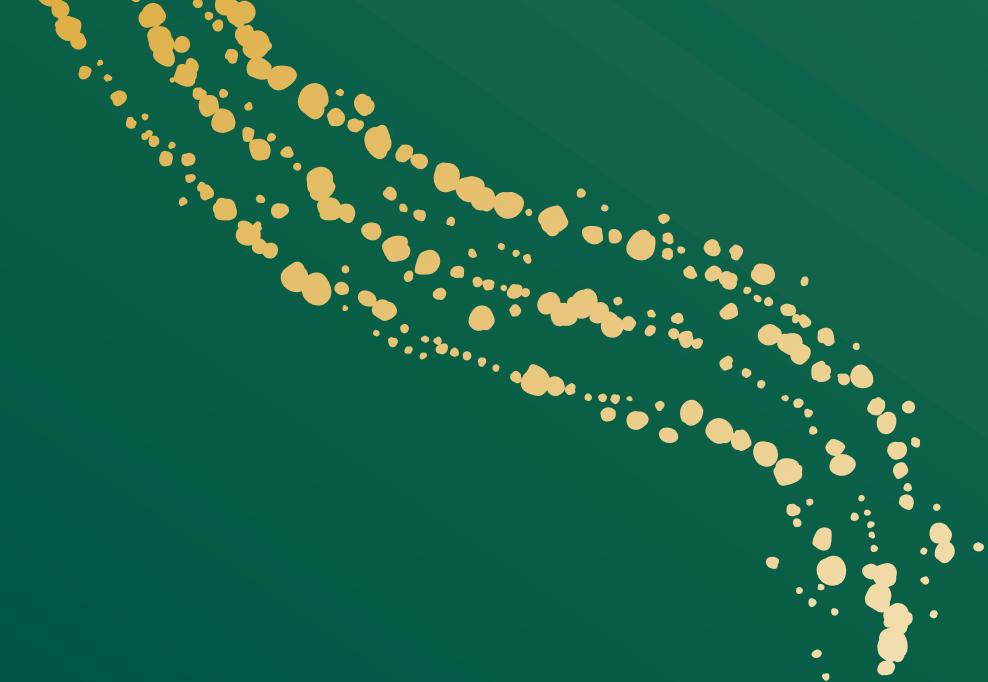


8 Australian universities ranked well above the world's standard in quantum research

Source: Chief Scientist Office



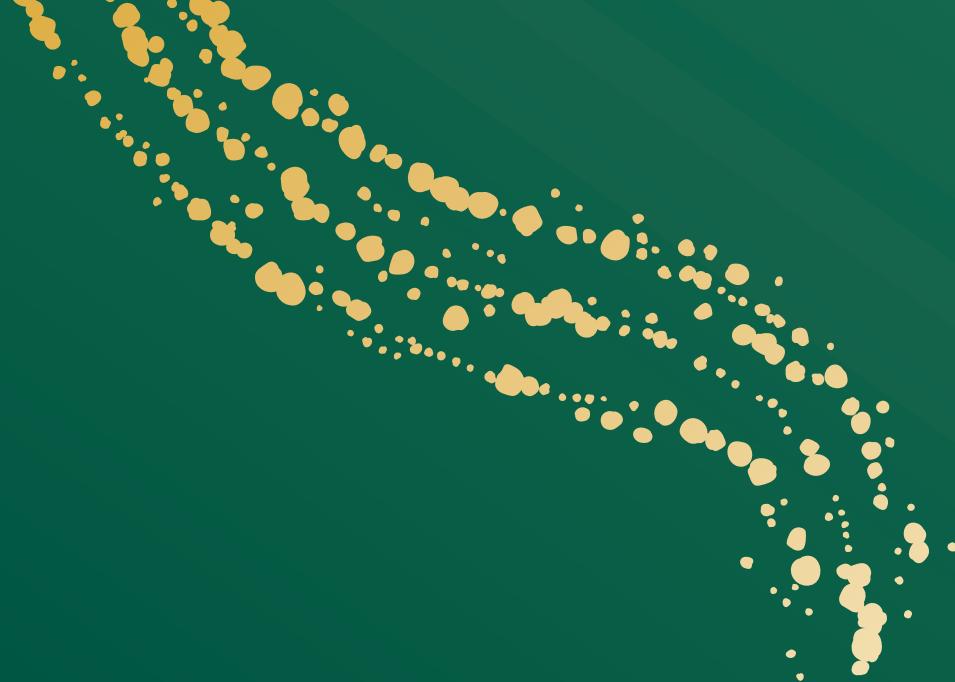
Australian founders are leading the world's best funded quantum start-ups such as PsiQuantum and Xanadu



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