

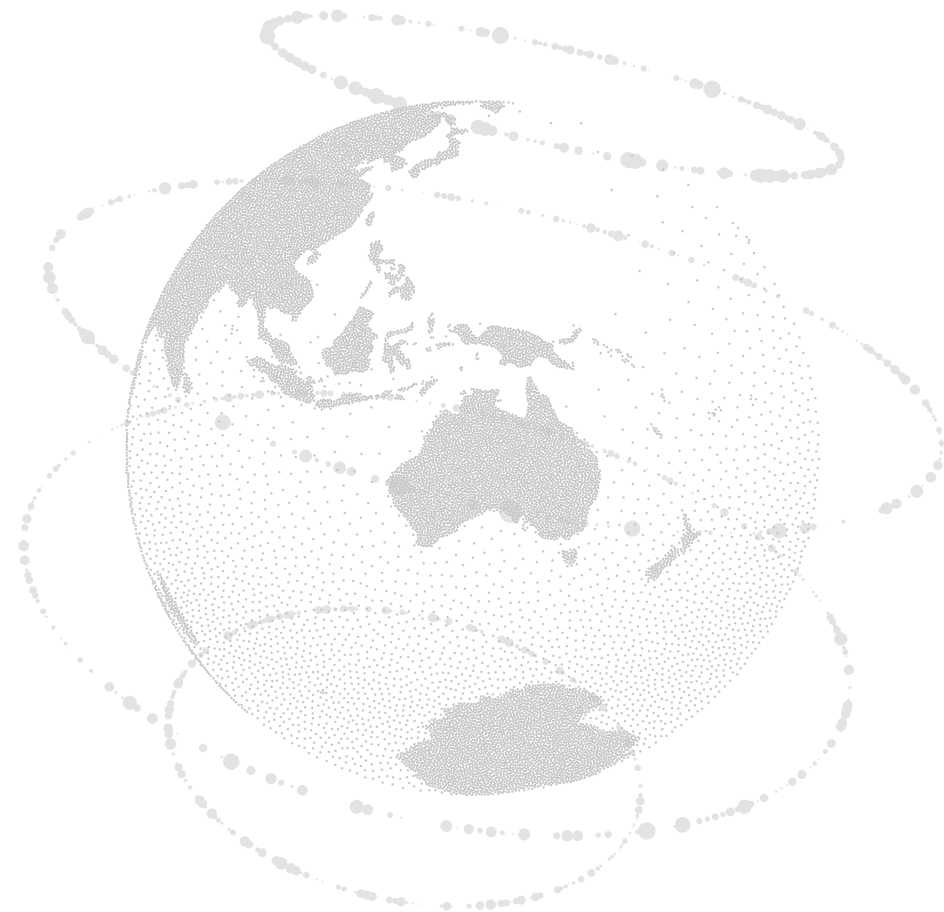


Australia's opportunity in the new AI economy



—
Defining the new
AI economy in Australia

Australia's opportunity in the new AI economy



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Foreword

Artificial intelligence (AI) is one of the most transformative forces in today's global economy. Like other world-changing general-purpose technologies that have come before, it will reshape industries and propel nations forward. As we stand on the cusp of a new AI-powered economy, it's time to reflect on the innovations that have brought us to this moment and chart the course for a future that is brimming with possibilities.

Australia has a proud history of adopting and adapting general-purpose technologies, building on innovations first developed elsewhere and integrating with global value chains. The nation's invention of Wi-Fi – a breakthrough technology built on the internet that is now used around the world – is a powerful reminder of what Australian ingenuity can achieve on the global stage.

The new AI economy is not just about the technology itself. It's about the jobs it creates, the efficiencies it offers and the new ways it enables us to interact with the world. However, we must build on Australia's unique strengths – such as its thriving startup ecosystem, rich renewable energy resources and proximity to Asia – and work out where we want to focus our efforts across the AI technology stack.

As we look ahead, the findings in this report offer a clear path. We should take confidence from our past successes and move forward with purpose. The new AI economy provides a remarkable opportunity to drive economic growth, foster innovation and enhance the lives of people – not just here in Australia but around the world.



Steven Worrall
Managing Director
Microsoft Australia
and New Zealand



Executive summary

A new AI economy is emerging globally, based on the tech stack of Generative AI

There are six core components of the Generative AI tech stack:



Applications



Tooling



Foundation models



Data



AI data centres



Chips

This core tech stack is **connected** by utilities infrastructure, and **distributed** to **end users** via various platforms and services.

The new AI economy is global, with Australia's domestic AI tech stack already comprising a mix of local and global organisations. Australia can secure its place by focusing on its comparative advantages.

A strong AI economy in Australia will build digital resilience, and boost adoption of Generative AI. This is critical to unlocking the full \$115B economic opportunity of the technology in 2030.

In this new AI economy, Australia's most promising opportunities are in applications, data and AI data centres.

Industry and government will need to take targeted action to capitalise on this opportunity and unlock the full benefits of AI.

Applications



Australian-based applications companies and global companies with Australian operations will generate \$10.6B in annual revenue by 2035.

Supporting AI applications and end users

Strong start-up networks will drive growth in AI applications. Venture capital and boosting the AI workforce is key.

Data



Set to generate \$1.7B in annual revenue in Australia by 2035, the opportunity in data is underpinned by AI systems' need for streamlined access to secure data.

Growing Australia's data capability

Regulations that balance risks and opportunities, and support for research and development is required to grow Australian data companies and encourage adoption.

AI data centres



Renewable energy, land and proximity to Asia will underpin growth in Australia's data centres. This component of the AI tech stack is foundational, and is set to generate \$4.7B in annual revenue in Australia in 2035.

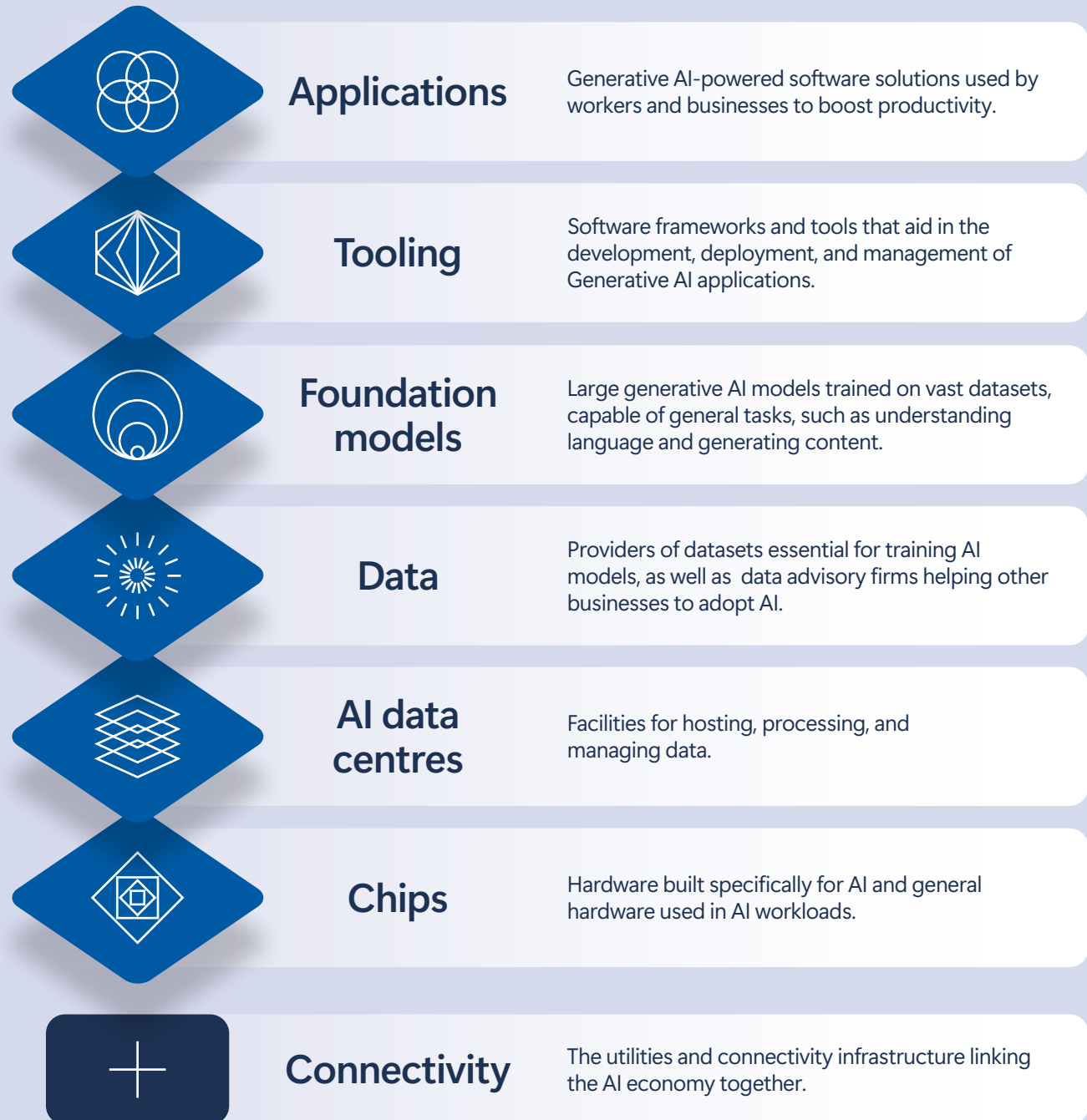
Laying the foundations for AI data centres

AI data centres will require significant land, and Australia needs to ensure its planning and zoning process is fit for purpose. Additionally, secure renewable energy and firming technologies are needed to support sustainability initiatives.

The Generative AI tech stack

The Generative AI tech stack has created a new AI economy

Definition of the new AI economy



This tech stack powers the Generative AI applications already saving workers time

Generative AI is already co-piloting work

84%

Australia's workforce are rapidly adopting Generative AI, with 84% of knowledge workers using AI at work in some capacity.¹ This is creating an application industry saving workers time across the economy.

- For healthcare professionals, AI co-pilots can analyse scans to detect anomalies, prioritising cases for urgent review. This improves diagnostic accuracy and efficiency.²
- For engineers and technicians, Generative AI can assist, generate and analyse testcases, identify potential failure modes, and recommend improvements for system efficiency and reliability.²
- For educators and teachers, Generative AI co-pilots can assist in lesson planning, generate customised practice exercises, and provide instant feedback on student work.² Importantly, this can help improve access to education for underserved cohorts.

The new AI economy is connected to end users via distribution channels

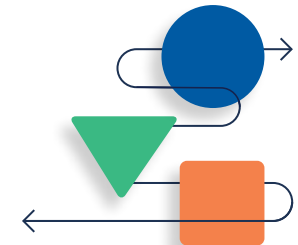
The New AI Economy

The tech stack underpinning Generative AI



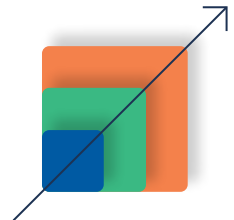
Distribution

Platforms and services that ensure AI models and applications are effectively delivered to end-users



End Users

Individuals and organisations utilising Generative AI solutions to improve efficiency in their everyday workflow

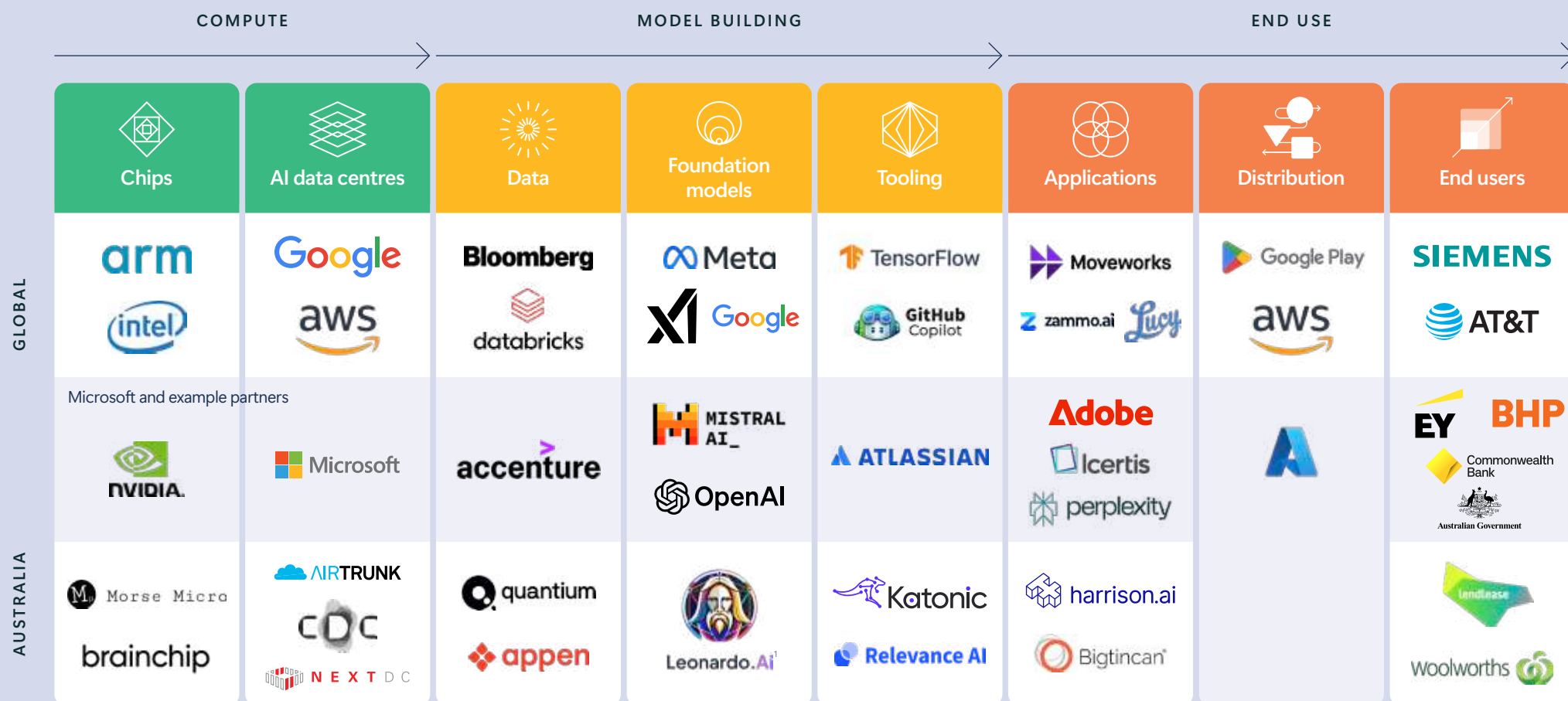


¹ Tech Council of Australia (2024) *Meeting the AI Skills Boom 2024*.

² See pages 24, 25, and 26 of this report for examples of Australian companies providing AI powered applications in for healthcare professionals, engineers and educators.

The new AI economy is global, with Australia's global and local organisations partnering to create opportunities for Australian businesses across the AI tech stack

Example companies in Australia's new AI economy



¹ Recently acquired by Canva

Source: Microsoft (2024) AI Customer Stories, Crunchbase (2024), Mandala analysis

Australia can secure its place in the global AI economy by focusing on its comparative advantages and national priorities

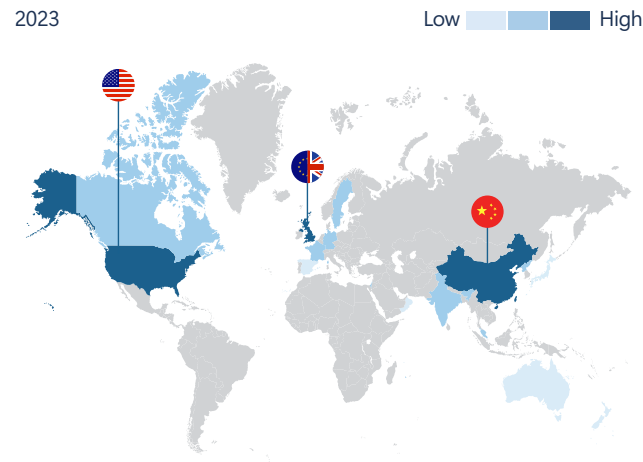
Australia's place in the global AI economy

Private investment in AI is rising globally. Much of this investment is focussed on foundational components of the new AI economy; chips, data centres and data.

Australia's success in this global AI economy will hinge on strategic investments in components where the economy has a comparative advantage. Getting this right will see Australia meet four key national priorities:

- 1 Improve digital resilience**
Australia can enhance its cybersecurity and data protection capabilities.
- 2 Strengthen strategic partnerships**
A strong domestic AI economy can boost collaboration with global AI leaders and regional allies.
- 3 Create new export markets**
Australia can further develop and promote its AI solutions globally, opening new markets across sectors.
- 4 Improve global interoperability**
Australian AI systems can be better aligned with international 'best-practice' standards.

Levels of total private investment in AI¹



Example companies by region

United States of America



People's Republic of China



European Union and United Kingdom



Australia's integration in the global AI economy will help it meet national priorities:

Improve digital
resilience

Strengthen strategic
partnerships

Create new
export markets

Improve global
interoperability

¹ Stanford HAI (2024) *Artificial Intelligence Index Report*. Data limited to United States, China, UK, Germany, Sweden, France, Canada, Israel, South Korea, India, Singapore, Japan, UAE, Australia and Spain.
Source: Consultations with Microsoft experts and stakeholders; Mandala analysis

A strong AI economy in Australia will build digital resilience, which is critical to unlocking the full economic value of Generative AI

The benefit of a strong AI economy

A strong AI economy...

Three key features of a strong AI economy:

Investments and partnerships

Spurring innovation through strategic funding and collaborative ventures

New products and businesses

Driving market expansion and creation of AI-enhanced solutions domestically and globally

New jobs

Generating diverse employment opportunities, from technical roles to ethics specialists

...builds digital resilience...

Three key features of digital resilience:

Advanced tech

Secure, explainable AI systems with cutting-edge infrastructure and testing environments

Robust processes

Comprehensive AI governance, including risk assessments, ethical guidelines, and adaptive incident responses

Knowledge diffusion

Widespread AI literacy, fostering innovation and collective digital resilience across sectors

...boosting adoption of Generative AI

Three key drivers of Generative AI adoption:

Equal access to AI infrastructure

Streamlined and safe access to AI capabilities through robust cloud and network technologies

Adaptive solutions

Flexible, continuously updated AI tools that enhance business agility and cyber resilience

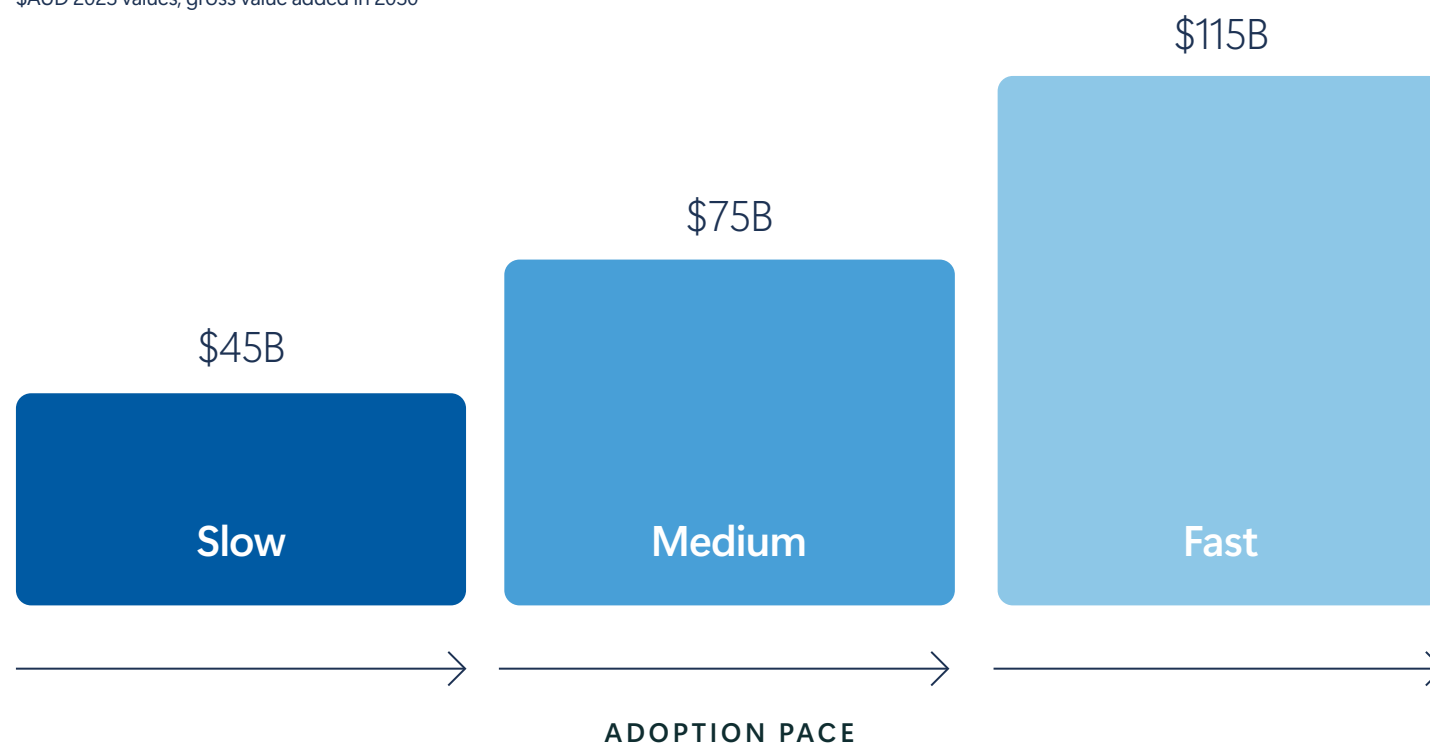
Inclusive and AI-savvy workforce

A workforce with strong AI expertise and leadership support, able to safely adopt AI with no cohort left behind

Achieving widespread adoption of Generative AI could deliver \$115B in economic value to Australia by 2030

The economic opportunity of Generative AI for Australia in 2030

\$AUD 2023 values, gross value added in 2030



Achieving fast-paced adoption unlocks the full benefits of Generative AI

Widespread adoption of Generative AI is key

The economic value of Generative AI depends on the pace of adoption in Australia. Getting adoption right and achieving fast paced adoption could deliver annual economic gains of \$115B to the Australian economy by 2030. Getting adoption wrong sees this benefit shrink to \$45B annually.

Slow-paced adoption in Australia could occur from having limited AI infrastructure, insufficient supply of skills in AI-related fields, regulatory hurdles impeding implementation, and unequal access to AI capabilities across different sectors and regions. In this scenario, Australia would lag behind in global AI innovation and fail to fully realise the economic benefits of Generative AI.

On the other hand, a strong AI economy would help Australia achieve fast-paced adoption. Investment in the AI tech stack will ensure equal, safe access to Generative AI across the economy. This widespread implementation would lead to increased productivity and innovation across various sectors, from healthcare to finance, driving substantial economic value.

Australia's most promising opportunities

We assessed Australia's most promising opportunities in the new AI economy

The attractiveness and capability framework

To understand the potential of different components of the AI tech stack, we assess each component through an attractiveness and capability index which includes over 20 different metrics.

Attractiveness measures which components of the tech stack are most promising in terms of economic value. The index considers the rate of revenue growth, total revenue, and future potential for each component of the AI tech stack.

Capability looks to understand where in the AI tech stack Australia may be better placed to capture the opportunity. This index considers a broader range of metrics, grouped by four categories;

- Institutions and infrastructure which outline the foundations for capturing the opportunity;
- AI readiness which capture the opportunity sentiment and support for AI;
- Operating environment that assesses how easy it is for businesses start, operate and grow; and
- Workforce and existing activity which includes skills of workforce and conditions that may support development of AI.

These categories are indexed and weighted based on importance and relevance for each component of the AI tech stack.

AI tech stack assessment framework

Attractiveness

Attractiveness of each part of the AI tech stack based on expected growth and revenue, and future potential



Institutions & infrastructure

Suitability of Australia's institutions and infrastructure for AI adoption, such as political stability, sustainability performance, and connectivity.

AI readiness

Readiness and supportiveness towards AI adoption, such as posture of AI regulations, AI research, sentiment and views towards AI in society, and patents.

Operating environment

Conduciveness of the environment to set up and operate a business, such as operating costs, access to land, industry potential, and business environment.

Workforce & existing activity

Presence of a suitable workforce and existing activity, such as by successful start-ups, especially in AI, venture capital (VC) funding, AI demand, and AI skills.

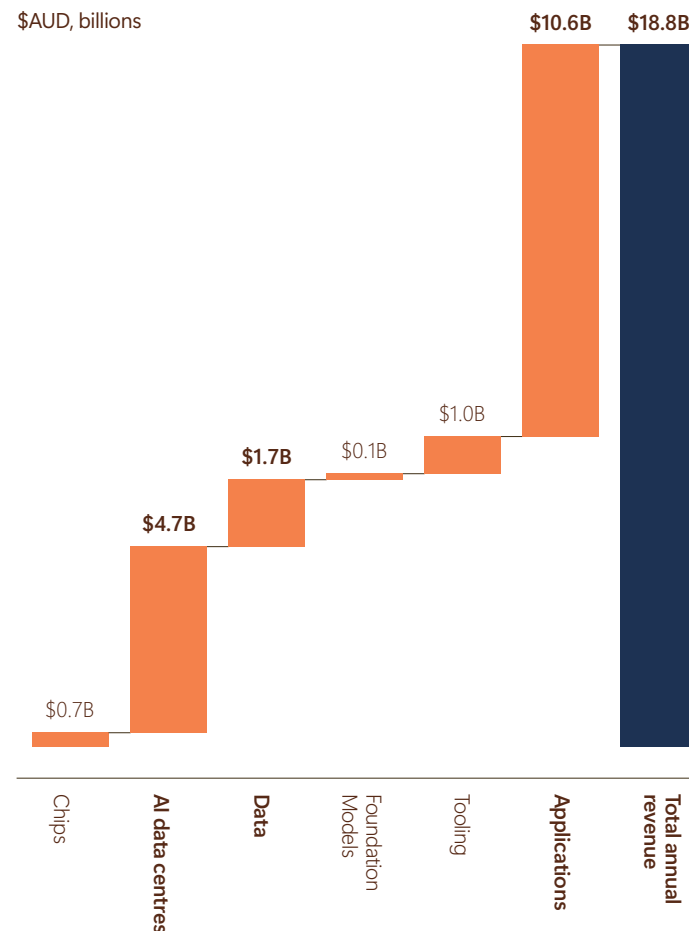
Capability



Attractiveness:
Applications, data
and AI data centres
are fast-growing,
representing 90%
of the total revenue
opportunity of the
new AI economy
in Australia.

Total annual revenue by
AI tech stack component
by 2035 in Australia

\$AUD, billions



PROJECTED GROWTH IN ANNUAL REVENUE FROM 2025-2035

3.2x

6.5x

4.3x

4.3x

7.6x

10.0x

6.7x

Key takeaways

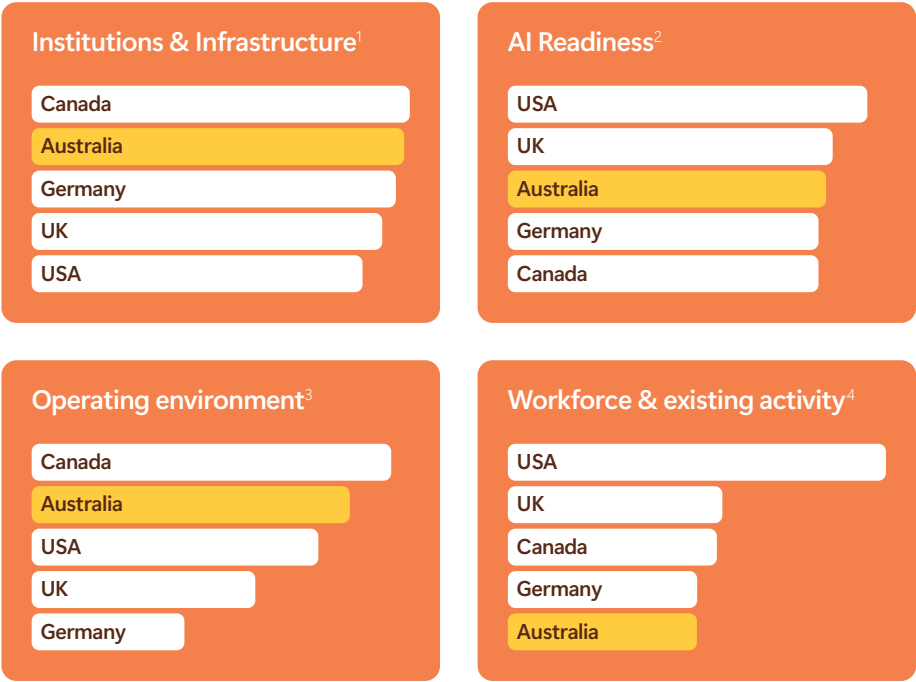
- By 2035, the new AI economy will be generating \$18.8B in annual revenue in Australia alone.
- This includes both Australian-headquartered businesses and global companies with operations in Australia.
- Applications is the largest and the fastest growing component of the AI tech stack for Australia. Australian start-ups can leverage existing foundation models, to build bespoke, industry specific applications.
- In general, Australia is more likely to be a downstream maker of AI, rather than a significant player in more capital-intensive components of the tech-stack.¹ In particular, Australia's development of foundation models is hindered by limited computing infrastructure, AI skills shortages, poor R&D commercialisation, and limited access to training data.

¹ CSIRO (2024) *Artificial Intelligence foundation models*
Source: Mandala analysis

Capability: Australia has strong infrastructure, operating environments and levels of readiness, but falls behind international peers in training its workforce for AI

Key measures of Australia’s AI capability

Index, by country



¹ Includes political stability and digital readiness.
² Includes AI regulations, AI sentiment in community, and AI patents.
³ Includes access to land, construction, electricity and labour costs
⁴ Includes number of AI start-ups, VC funding, demand for AI jobs and presence of AI skills. Source: Clean Energy Council (2024) *Clean Energy Australia*; Energy Institute (2023) *Statistical Review of World Energy*; Oxford Insights (2023) *2023 Government AI Readiness Index*; Lightcast (2023) *Global AI: Who's Leading the Race for Jobs and Skills*; Mandala analysis. See Appendix for further detail on methodology and sources used.

We assessed Australia against four key measures of AI capability

Institutions and infrastructure

The foundations for capturing the opportunity
Australia performs well on sustainability measures and political stability.

AI readiness

The sentiment and support for AI
Australia is on par with leading peers in terms of AI sentiment, research and fit for purpose regulation, which supports AI readiness.

Operating environment

Ease for businesses to start, operate & grow
Australia ranks well in providing a favourable operating environment, especially in access to land and reputation for ease of doing business.

Workforce and existing activity

Skills of workforce and the conditions that may support development of AI
Australia slightly lags leading peers, especially by current demand and availability of AI skills in the workforce.

This assessment helps identify the most promising components of the AI tech stack

Each of the four measures of AI capability have differing levels of importance and relevance for each component of the AI tech stack.

Australia’s strength in institutions and infrastructure is most important for growth in AI data centres.

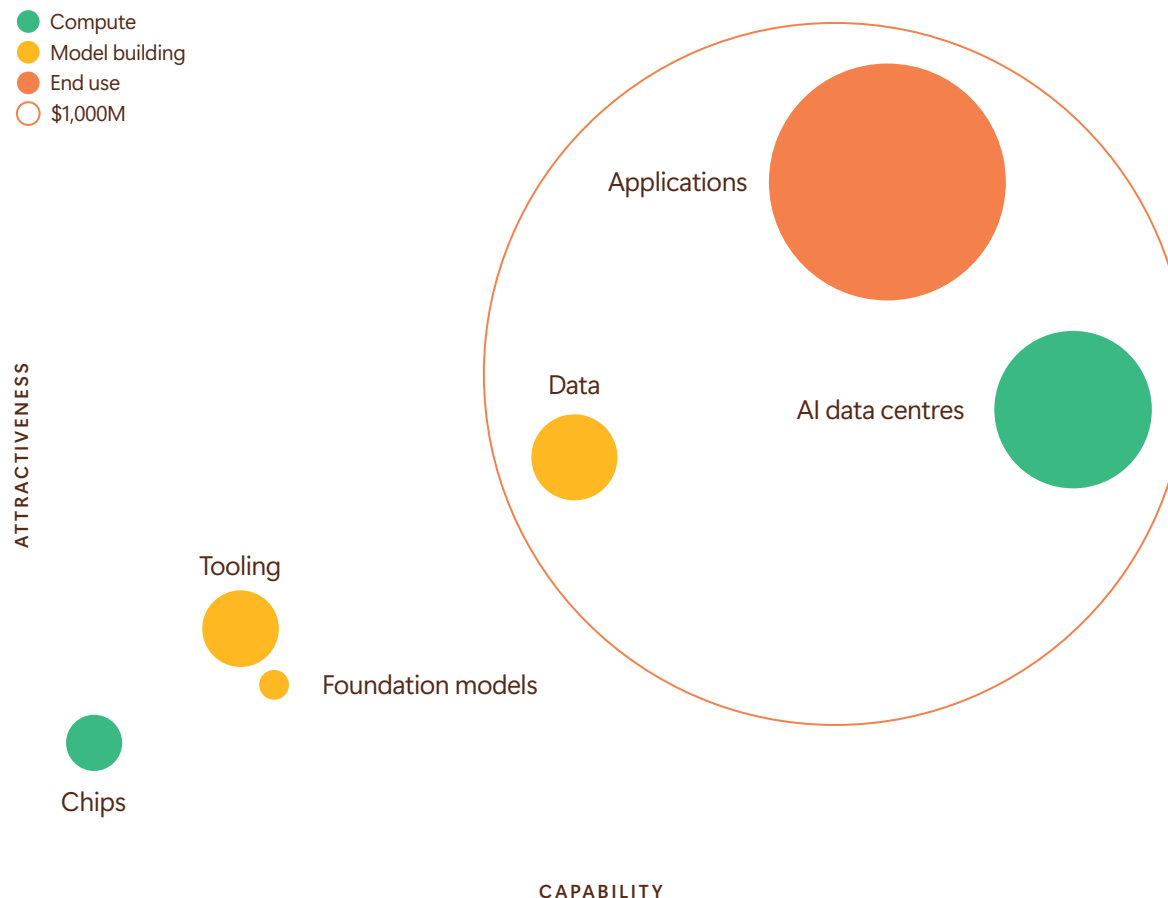
High levels of AI readiness indicate high levels of future adoption of AI. This will drive demand for AI applications, in turn driving induced demand for other components of the tech stack. Importantly, levels of readiness are dependent on the regulatory path Australia adopts; overly restrictive regulation can reduce readiness, while greater clarity can encourage adoption.

A strong operating environment is most important for scaling AI applications and start-ups, as well as firms providing data advisory. Relatively weaker performance on AI skills has the biggest impact on highly technical components of the AI tech stack, including foundation models and tooling.

Applications, data and AI data centres present promising opportunities for Australia, when considering both attractiveness and capability

Attractiveness vs. capability assessment of AI tech stack components

x-axis: capability index, y-axis: attractiveness index, size: 2035 revenue (\$M)



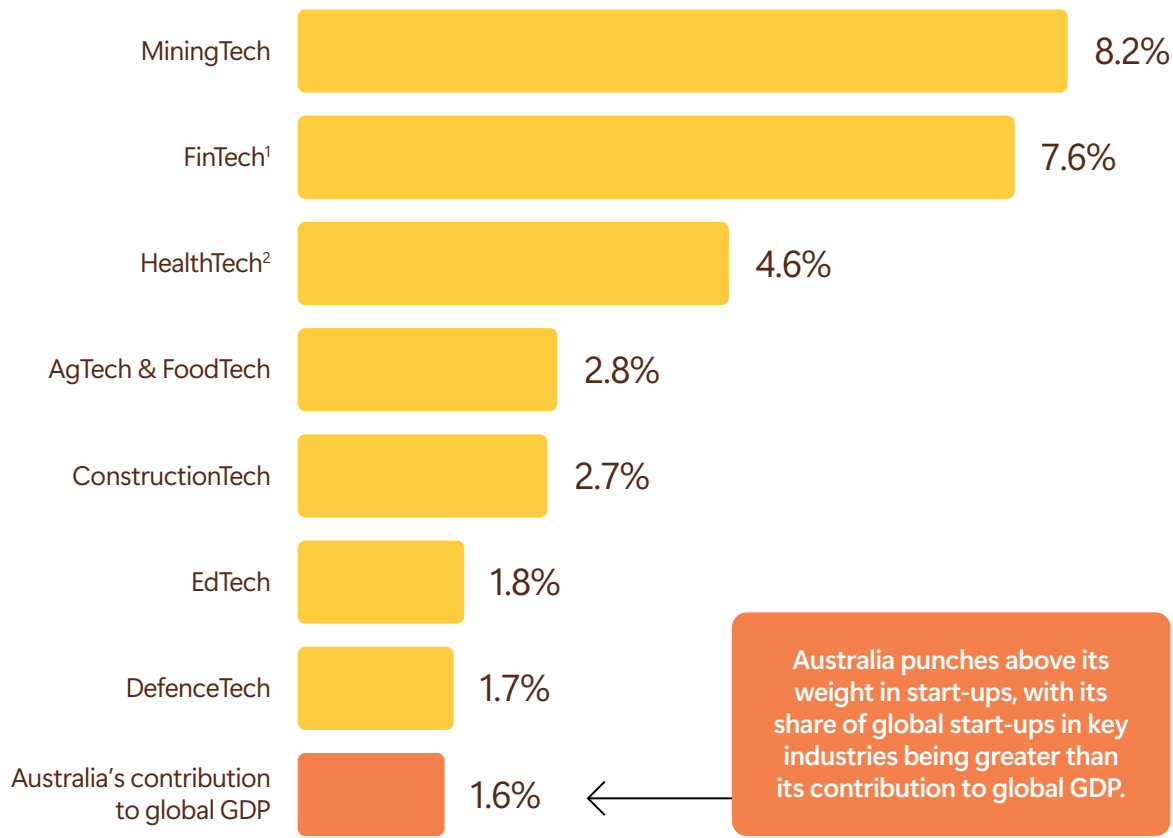
Globally, chips and foundation models represent a significant opportunity, with substantial investments to date across leading tech firms. However, the opportunity for Australia is limited. The scale of investment required to compete, and the need for highly technical expertise are key barriers for Australian growth.

Key takeaways

- Attractiveness measures the most promising components of the tech stack in terms of economic value. Capability measures Australia's ability to capture this opportunity.
- This assessment framework shows that applications, data and AI data centres are areas where Australia could be well positioned to capture opportunities in the AI tech stack.
- Australian businesses are expected to increase their adoption of Generative AI over the next decade, which will drive increased demand for business-to-business AI applications. This growth will support complementary demand for data and AI data centre components of the AI tech stack.
- In particular, Australia's favourable business environment, and strong scores on AI readiness create favourable conditions for applications and data.
- Factors such as strong sustainability credentials, access to land and political stability mean Australia is well placed to support AI data centres.

Applications: Australia’s strong start-up performance and world-leading tech companies will drive growth in applications

Number of start-ups in Australia as a share of total global start-ups
%, 2022



AI is driving revenue growth in leading applications companies

As well as start-ups, existing leaders in applications will continue to drive growth in this component of the AI tech stack. Leading Australian tech companies like Canva and Atlassian are incorporating Generative AI into existing offerings, driving growth.



Canva launched its AI design toolkit 'Magic Studio' in October 2023. It has been used more than 7 billion times to help users make better visual designs across a variety of mediums. With 90% of global business leaders in agreement that AI tools improve the quality of visual communication, Canva's AI toolkit is increasingly important to Canva's competitiveness.



Atlassian launched Atlassian Intelligence in 2023 to augment their cloud suite with Generative AI capabilities. Over 30,000 customers are using these AI features and nearly 80% of users report saving time from them. This has contributed to Atlassian's strong cloud revenue growth of in 2024.

¹ Combines LendingTech, PayTech and E-commerce
² Combines health software, medical devices and wellness & lifestyle tech
Source: Tech Council of Australia (2022) *Turning Australia into a regional tech hub*

Source: Canva (2024) *Welcome to Canva, Leonardo!*; Canva (2024) *The Visual Economy Report*, Canva (2023) *Reflecting on 2023: Canva's 10th and biggest year yet*; Atlassian (2024) *FY24 Investor Day: Our Platform-Powered Big Bets*

CASE STUDY

Annalise.ai is a leading Australian health scale-up, developing AI applications for medical imaging

△ annalise.ai



Annalise.ai helps radiologists detect pathologies like Lung Cancer and Stroke, improving access to high quality care

1 in 2 radiologists in Australia already have access to Annalise.ai, with the solution available in 40+ countries

Annalise.ai is an Australian company that has developed comprehensive AI solutions for chest X-ray and CT Brain trained to detect multiple pathologies including Lung Cancer and Stroke

Annalise.ai is used by radiologists and clinicians to analyse medical images to identify potential pathologies and highlight the region of interest. This speeds up decision-making for radiologists.

With Australia's shortage of healthcare workers and increasing backlog of unreported medical images, this provides much needed relief to healthcare providers and fast and accurate care for patients.

Annalise.ai shows the value in attracting global talent and using partnerships to scale

Brothers Dimitry and Aengus Tran founded Annalise.ai in 2019. Moving to Australia to study business and medicine, the pair realized the nation's medical industry needed more pioneering tech.

The brothers achieved scale by partnering with leading healthcare organizations, securing \$160m in funding from leading VCs, and deploying the software via Microsoft's cloud infrastructure.

Founders Dimitry and Aengus have plans to grow, with a goal to impact a million lives a day

Already, 1 in 2 radiologists in Australia have access to Annalise.ai products. The company has grown from 20 employees in 2020, to more than 150 currently, serving millions of patients globally including, APAC, EMEA, UK and the US.

Annalise.ai will continue to work with radiologists and clinicians globally, ensuring Australia's world-leading AI technology can be used to help patients across the globe.

CASE STUDY

LexX Technologies develops Generative AI co-pilots for industrial maintenance technicians

LEX^X



LexX Technologies' software identifies and solves defects for engineers and technicians.

This saves Australian businesses millions in industrial asset maintenance and helps keep workers safe.

LexX Technologies develops Generative AI applications that spot and resolve defects in industrial assets

LexX Technologies' software can read and now author technical manuals and procedures using Generative AI, creating a self-sustained knowledge ecosystem for maintenance teams.

These insights assist engineers and technicians in identifying and resolving defects efficiently.

The Melbourne-based start-up aims to make the workplace safer, saving Australian businesses millions in costs

LexX Technologies' software enables faster, more accurate defect identification, ensuring assets remain operational with minimal downtime.

By reducing maintenance-related downtime by up to 30%, it contributes directly to business revenue. For instance, an energy client experienced annual savings of \$53 million.

LexX Technologies leverages expertise in airline, wind and maritime sectors

Founded in 2019, LexX Technologies has become an industry leader in AI for industrial asset maintenance.

The company has expanded its presence in the defence sector, securing contracts with Singapore's Ministry of Defence, alongside partnerships with Boeing and UAE's Tawazun Economic Council.

Source: LexX Technologies (2024) *Our Solutions*, Crunchbase (2024) *LexX Technologies*, Oxford Economics (2023) *Industrial spending to drive Australian maintenance activity to new highs*, AFR (2022) *Boeing, UAE's Tawazun tip into start-up LexX Technologies*, *Correspondence with LexX Technologies*

CASE STUDY

Cogniti is harnessing foundational models to build personalised education AI agents



Tailored applications are essential for boosting Generative AI adoption.

Cogniti creates customised learning experiences for educators and students.

Cogniti is a start-up from the University of Sydney, allowing educators to create custom AI agents to assist their students learning

Cogniti's chatbot agents are powered by large language models (LLMs) such as GPT-4.

Educators can provide instructions and resources (e.g. files) to the AI agent to customise its behaviour.

Students can then interact with the chatbot to augment their learning, receiving personalised feedback and support from the agent.

Every Cogniti chatbot is tailored to each unique learning environment

Dr Joanne Hinnit, an educator from the University of Sydney, used Cogniti to create the 'Mrs S' agent.

'Mrs S' helps occupational therapy students learn how to collaborate with clients like teachers in inclusive education contexts.

Joanne provided 'Mrs S' with teaching resources to simulate a real Kindergarten teacher.

Joanne's students were then able to present intervention plans to 'Mrs S', receiving real-time feedback as if it were a real client interaction.

Interactive opportunities like these allow educators to deliver engaging and powerful experiences far beyond their individual capacity.

Cogniti is currently in an early-stage pilot and more classroom applications like 'Mrs S' are being developed.

CASE STUDY

GHD's InsightVision is an AI application providing real time dam monitoring services



InsightVision is a an application from GHD, providing real-time alerts and warnings to dam operators.

A cloud-based application, InsightVision is hosted on Microsoft Azure.

GHD's InsightVision leverages AI to provide dam management services

InsightVision automates sensor data collection and analytics to improve dam monitoring.

This improves safety, efficiency, and compliance of dams, reducing risks and costs associated with dam management.

InsightVision helps protect the environment by spotting potential issues early, preventing failures that could have ecological impacts.

InsightVision is a cloud-based application, able to be tailored to each customer's needs

GHD InsightVision comes with the option of deployment via the Cloud as a SaaS, or on-premise based on the customer's needs.

As a cloud-based application, InsightVision can establish real-time warnings and alerts with predefined thresholds and customer-specific rules.

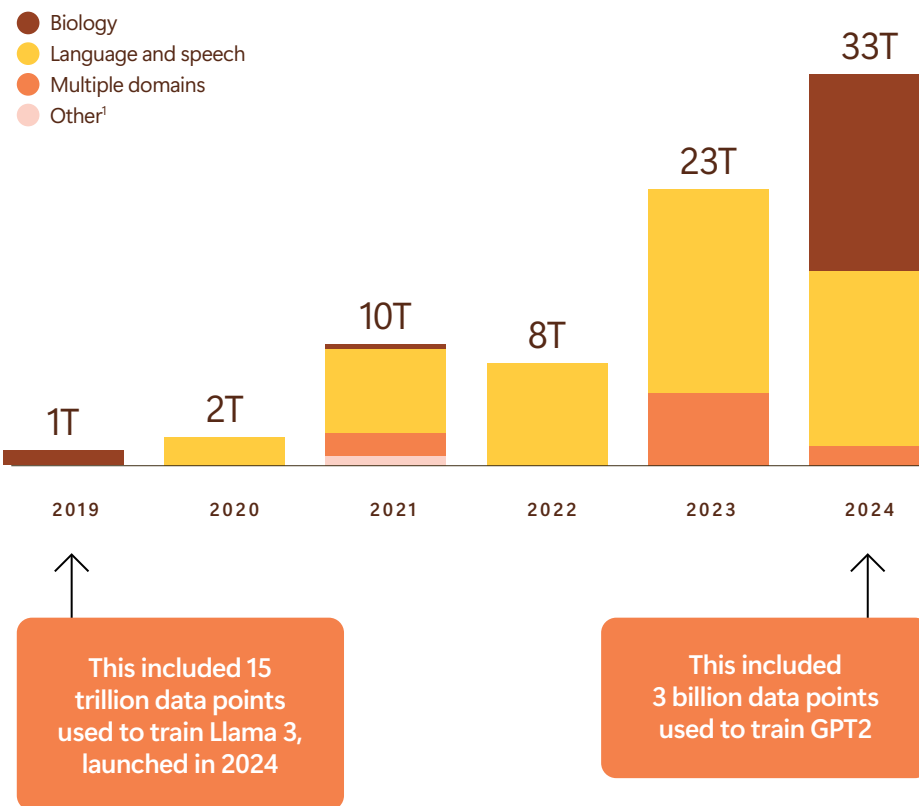
GHD is a story of digital innovation, continually evolving from its foundation almost 100 years ago

Founded in 1928 in Melbourne, Australia, GHD is a global professional services company with over 11,000 employees in 160 offices on five continents specialising in solutions for the water, energy, transport, property, and environmental sectors.

Data: Australia's data opportunity is underpinned by the need for AI systems' to have streamlined access to secure data

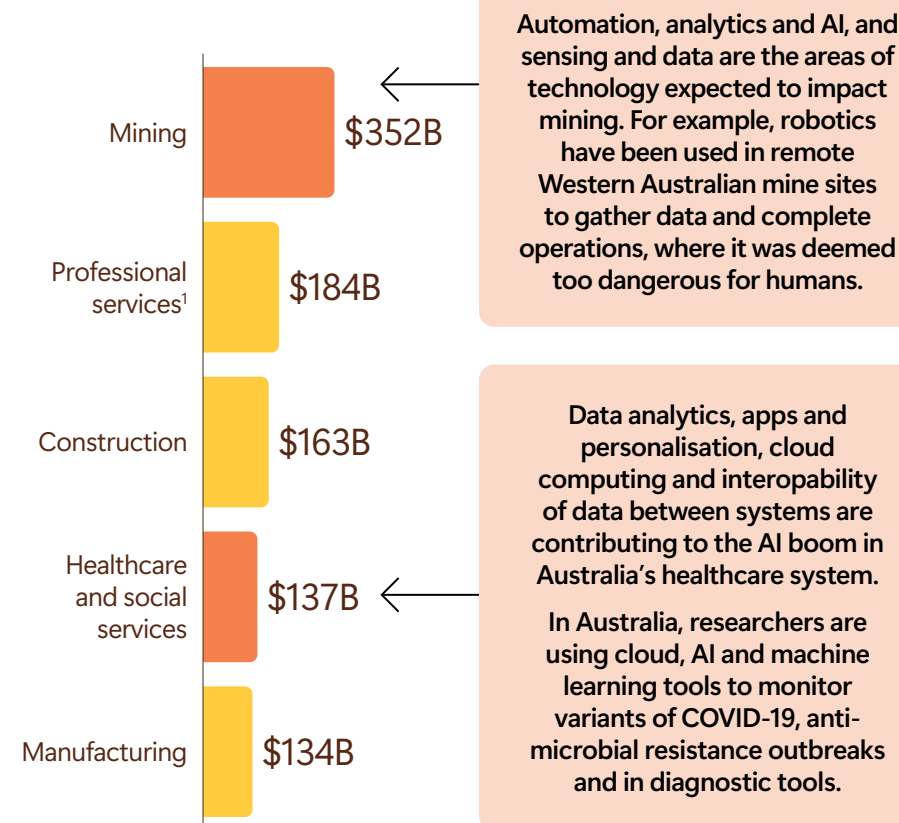
Training data for notable AI systems

Total datapoints used to train notable AI systems, by type, 2019-2024



Australia's highest value-adding industries and their use of data

Industry value-added, 2023



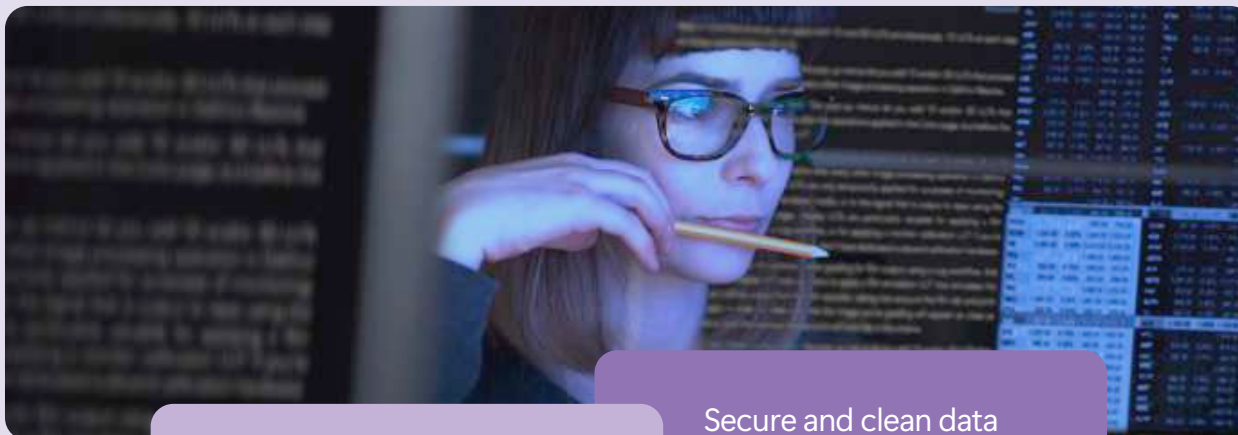
¹ Includes image generation, vision, and games data
Source: Our World in Data (2024) Artificial Intelligence

Source: AROSE (2024) *Robotics in underground mining*, CSIRO (2024) *AI trends for healthcare*; State of Play (2023) *Trends shaping the future of mining*

CASE STUDY

RecordPoint helps organisations manage and protect their data, enabling secure AI adoption

RECORDPOINT 



RecordPoint supports Australian companies and government clients to better manage their data.

Secure and clean data is essential for boosting Generative AI adoption.

RecordPoint is an Australian company helping organisations discover, govern and control all their data

Organisations need secure and clean data in order to adopt AI applications. RecordPoint helps organisations be AI-ready, helping them leverage the data they already collect.

Supporting Australian companies with data is a key component of boosting Generative AI adoption.

RecordPoint is a trusted partner of governments across Australia

RecordPoint has established itself among local, state and federal governments in Australia as a trusted partner.

For example, RecordPoint recently secured a \$7.2M contract with Victoria Police to host its data and records management, compliance and governance platform.

RecordPoint has expertise in Financial Services, Energy, and Government

Highly-regulated markets face additional compliance and security requirements in relation to their data. Executives see this as a barrier to adoption of AI.

RecordPoint's regulatory expertise means it is able to serve such markets.

Importantly, Generative AI in Healthcare and Financial services alone could deliver up to \$26B in economic value to Australia by 2030.

AI data centres: Renewable energy, land and proximity to Asia will underpin growth in Australia's data centres

Partnerships and investment activity in data centres in Australia

MICROSOFT INITIATIVES	DESCRIPTION	PARTNERS
Supporting regional industries and communities	Partnering with NextDC, Vocus and BHP who are delivering a new data centre in the Pilbara, Port Hedland, that will support regional businesses, including mining and resources, with access to digital infrastructure.	  
Upskilling Australian workers across the country	Investing in skills development with 300,000 Australians upskilled in cloud and the AI-enabled economy. This includes establishing the Microsoft Data Centre Academy with TAFE NSW, and establishing partnerships with the Institute of Applied Technology – Digital and Monash College Future Skills Division.	    
Investing in high tech infrastructure and partnering with data centre companies	Microsoft has several partnerships and investments in data centres and has announced it will invest \$5B in Australian data centres by 2026. This investment will grow Microsoft's local datacentre footprint from 20 sites to a total of 29 sites across Canberra, Melbourne and Sydney. Enabling a range of data centres in Australia, through partnerships with data centre companies such as Equinix and AirTrunk.	 

Source: Equinix (2024) *Asia-Pacific Data Centres*; Microsoft (2023) *Microsoft announces A\$5 billion investment in computing capacity and capability to help Australia seize the AI era*; NextDC (2023) *NEXTDC to partner with BHP, Vocus and Microsoft with launch of First Pilbara Data Centre*; Sydney Morning Herald (2024) *Microsoft, Macquarie pump billions into power hungry data centres*; Microsoft; Mandala analysis

CASE STUDY

CDC Data Centres provides the essential infrastructure for Australia's new AI economy



Expanding data centre capacity across Australia unlocks AI potential with low-latency data access.

CDC is the largest Australian data centre owner and operator.

CDC develop, own and operate data centres across Australia and New Zealand

CDC is the largest Australian owner and operator of highly secure data centres, boosting Australia's data capability and security.

In partnership with CDC, Microsoft Azure provides the computing foundations for 40 leading Government departments and agencies.

CDC is expanding capacity to meet AI-driven demand

CDC currently operates 302MW of data centre capacity, with a further 388MW already under construction. CDC plans to expand this capacity by a further 1600MW.

This growth supports the increasing needs of customers embracing AI technologies. These advancements require higher computational power, expanded data storage, and enhanced networking capabilities.

CDC is a leader in data centre sustainability

CDC aims to transition to net zero carbon by 2030 for scope 1, 2 and defined scope 3, including customer ICT load, operational water and waste, business travel and accommodation.

Additionally, 17 years ago CDC introduced a cutting edge closed-loop cooling system design, maximising water efficiency and enabling it to save up to 5 billion litres of water annually.¹

¹ Estimation based on Data Centre Water Consumption (2021) , noting that actual figures may differ depending on efficiencies of scale and operating temperatures. Source: CDC (2024) *Services*, Microsoft (2017) *Canberra Data Centres turbocharges public sector ecosystem with Microsoft Azure*, Infratil (2024) *Annual Report*

Overall, Australian entrepreneurs and partnerships with global technology leaders will be catalysts for growth

Overseas partnerships will power growth

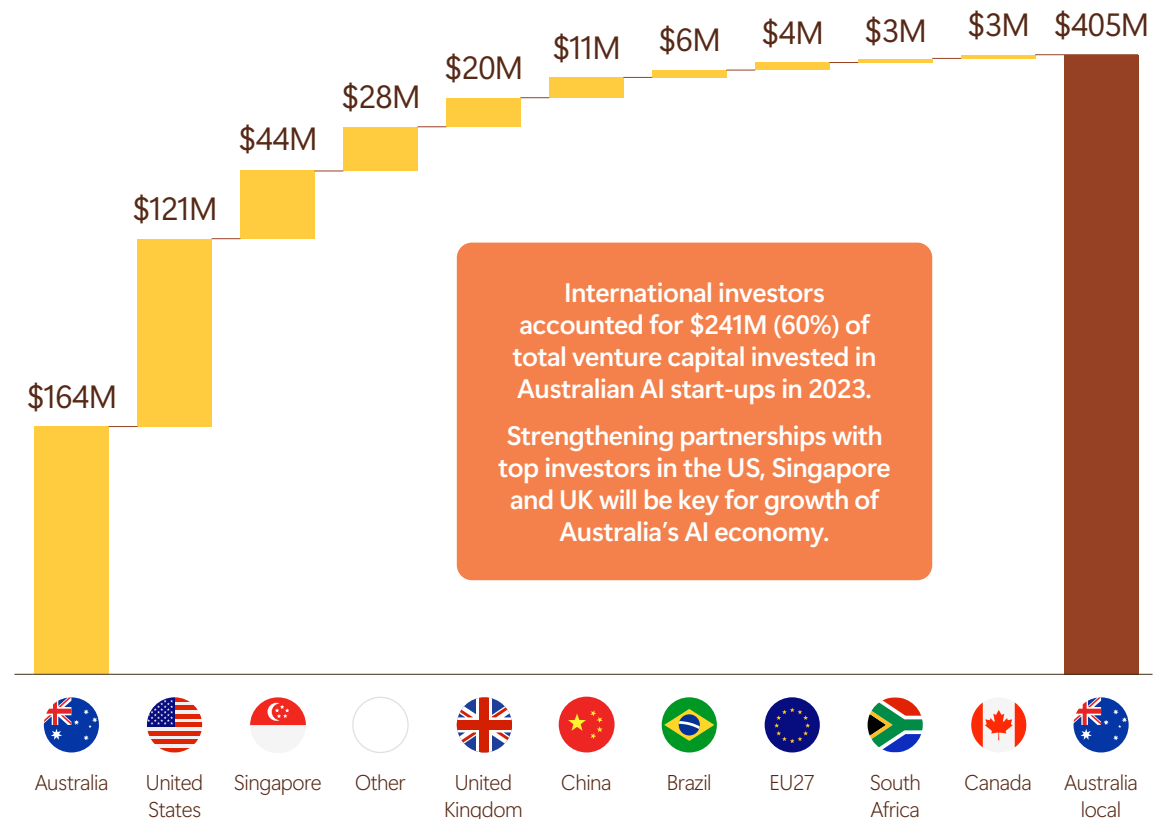
International investors accounted for 60% of total VC investments in Australian AI start-ups in 2023.¹ This indicates international investment and partnerships will play a critical role in the future growth of Australia's new AI economy. In particular, the United States, Singapore and the United Kingdom were the biggest source of VC funds into AI start-ups in 2023, accounting for 46% of VC investment collectively.¹

As well as VC funding, Australia will need to continue to attract world-leading tech companies to establish a presence in Australia. Partnerships with such companies not only brings capital but gives Australia's companies access to advanced research capabilities, talent development programs, and global networks. Additionally, global tech companies' presence can create spillover effects, stimulating local innovation, creating high-skilled jobs, and positioning Australia as a key player in the global AI landscape.

Such international partnerships will be particularly important in the applications, data and AI data centres components of the AI tech stack – the components of most promise for Australia.

Origin of venture capital investments in Australian AI start-ups¹

\$AUD millions, 2023



Note: When an investment deal includes investors from two distinct countries, the amount invested is counted twice due to the Preqin database not providing the exact amount invested per investor when there are multiple investors. Additionally, the OECD definition of 'AI start-up' may differ from other data sources used in this report.

¹ OECD.AI (2024), visualisations powered by JSI using data from Preqin, accessed on 30/8/2024

Industry
and government
will need to take
targeted action

Industry and government can support development of the new AI economy at each point of the AI tech stack

Actions for industry and government by part of the AI tech stack

1 Compute Chips, AI data centres

FOCUS COMPONENT: **AI DATA CENTRES**

- A** Ensure planning and zoning process is fit for purpose
- B** Secure renewable energy and firming technologies
- C** Develop the workforce to support AI data centres

2 Model building Data, foundation models, tooling

FOCUS COMPONENT: **DATA**

- A** Ensure policies regarding data usage and privacy adequately balance risks and opportunities
- B** Continue to support and commercialise research and development activities to new markets and revenue sources
- C** Attract technical, high-skilled workers and investment such as FDI

3 End use Applications, distribution

FOCUS COMPONENT: **APPLICATIONS**

- A** Train and educate individuals and businesses on AI to help unlock development of new applications
- B** Provide necessary investment and VC backing to support start-ups and new technologies
- C** Capitalise on Australia's existing knowledge and strengths in particular industries to develop new AI solutions

THROUGH COLLABORATION, PARTNERSHIP AND COMPETITION

Streamlining approvals, supporting sustainability and developing a skilled workforce are key initiatives that would boost data centres in Australia

1 Compute Chips, AI data centres

FOCUS COMPONENT: AI DATA CENTRES

RATIONALE

WHO SHOULD LEAD?

INTERNATIONAL CASE STUDIES

A

Ensure planning and zoning process is fit for purpose

AI data centres will require significant land, timely planning approval and appropriate zoning processes that are not cumbersome

Government-led,
working with industry



In Prince William County, Virginia (USA), the local council designated 10,000 acres for data centre development in a "data centre opportunity zone" district in 2016. Prince William County is projected to be the one of the world's largest data centre hubs in the next decade.

B

Secure renewable energy and firming technologies

AI data centres are expected to have significant energy demands. Ensuring this energy is sustainable and reliable will be important

Government-led,
working with industry



Virtus is a data centre company that counts private investors (Macquarie Asset Management) alongside public investors (UK Government pension scheme body the London Fund). Virtus is currently building a data centre located adjacent to a wind farm in Germany, planned to rely 100% on renewable energy.

C

Develop the workforce to support AI data centres

Development of new AI data centres will require a supporting workforce to construct, maintain and operate infrastructure

Industry-led,
working with government



Microsoft has committed to partnering with education ministries across the ten ASEAN member states, which will benefit an estimated 644,000 vocational students with AI skills (alongside data and cybersecurity).

Streamlining approvals, supporting sustainability and developing a skilled workforce are key initiatives that would boost data centres in Australia

2 Model building

Data, foundation models, tooling

FOCUS COMPONENT: DATA RATIONALE WHO SHOULD LEAD? INTERNATIONAL CASE STUDIES

A	Ensure policies regarding data usage and privacy adequately balance risks and opportunities	Regulatory certainty around usage and privacy will help ensure safe usage and sharing "of data for AI	Government-led, working with industry	 The National Institute of Standards and Technology’s Cybersecurity Framework (NIST CSF) is a robust regulatory framework for managing cybersecurity risks across various contexts, including AI systems. Mandatory for U.S. Federal agencies since 2017, the NIST CSF is increasingly being adopted in the private sector.
B	Continue to support and commercialise research and development activities to new markets and revenue sources	R&D, as well as the commercialisation of R&D will be important for developing new products and services	Government and industry-led	 Germany has launched its plan to spend a billion euros to support AI research and commercialisation. Germany envisages creating 150 new university labs for AI research and making accessible the kind of complex public data sets from which AI techniques can tease out new insights.
C	Attract technical, high-skilled workers and investment such as FDI	Building AI tools using data requires costly tools, equipment, and skills and will require significant investment and talent	Government and industry-led	 In 2023, Biden ordered prioritisation of visa renewals for “highly skilled talent in AI and critical and emerging technologies, to continue their work in the United States without unnecessary interruption” and establishing programs to attract more high skilled migrants in this area.

Source: Expert interviews; NIST (2024) *Cybersecurity Framework*; Reuters (2023) *Germany plans to double AI funding in race with China and US*; The White House (2023) *Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*; Mandala analysis

Streamlining approvals, supporting sustainability and developing a skilled workforce are key initiatives that would boost data centres in Australia

3

End use

Applications, distribution

FOCUS COMPONENT: APPLICATIONS

RATIONALE

WHO SHOULD LEAD?

INTERNATIONAL CASE STUDIES

A

Train and educate individuals and businesses on AI to help unlock development of new applications

Training and education will support effective adoption across the economy, helping to unlock more new AI application innovation

Government and industry-led



In the Philippines, Microsoft announced its commitment to accelerate AI adoption through a range of programs, working with government agencies to embed AI into public services, and upskilling more than 100,000 Filipino women learners with AI and cybersecurity skills.

B

Provide necessary investment and VC backing to support start-ups and new technologies

Funding, especially in early-stage business, will support innovation and entrepreneurship for AI applications

Government and industry-led



Canada has committed \$405 million to help AI start-ups bring new tech to market, with \$200 million set aside for Canada's Regional Development Agencies to support AI start-ups to commercialize their solutions and uplift adoption.

C

Capitalise on Australia's existing knowledge and strengths in particular industries to develop new AI

Focusing on industries where Australia has existing capability and knowledge may help grow and fast track AI application solutions

Government and industry-led



In Japan, where healthcare is critical for the ageing population, the government has identified key focus areas to integrate AI tools, such as in diagnostic imaging, and launched an AI hospital scheme in collaboration with industry partners including IBM Japan and Hitachi.

Importantly, both industry and government have a role in mitigating the risks and challenges

Risks and challenges facing AI

Responsibilities

TECH

Bias

AI may reflect existing societal biases if not developed with diverse datasets, teams and/or organisations

Opacity

Limited transparency in AI decision-making can reduce trust and understanding

Unpredictability

The rapidly evolving nature of AI can make it challenging to anticipate and manage its impacts

ADOPTION

Digital exclusion

AI technologies might widen the digital divide if access and skills are not addressed

Misuse

AI could be misused for malicious purposes, posing significant ethical and security risks

Job transition

The integration of AI could lead to workforce changes, affecting job roles and employment

MARKET

Concentration

The AI market needs to remain healthy and competitive, to spread the benefits and foster innovation

Security

AI systems, like any widespread technology, can face cybersecurity challenges, such as data breaches and malicious attacks

INDUSTRY

Promote access, choice, transparency and social responsibility

GOVERNMENT

Provide regulatory clarity, support and collaboration

Source: Microsoft (2024) *AI Access Principles*; DISR (2024) *Safe and responsible AI in Australia consultation: Australian Government's interim response*; Mandala analysis

Microsoft's AI Access Principles set out a foundation for how industry should approach the new AI economy

Microsoft's AI Access Principles

Access and support

1

Expand access to AI hardware

Expand cloud computing AI infrastructure to enable more foundation models

2

Expand access to AI software

Make AI models and development tools broadly available to software applications developers

Choice and fairness

3

Support open markets

Support public APIs to enable developers to access and use AI models

4

Facilitate networks between actors

Develop a common public API to enable network operators to support software developers

5

Promote agency and choice

Give developers choice on how to distribute and sell their AI models, tools and applications

6

Respect developer's intellectual property

Large actors, like Microsoft, should continue to not use any non-public information or data from the use of developers' AI models, for the purpose of competing with those models

7

Promote dynamic markets

Support customers to switch to another cloud provider by enabling them to easily export and transfer their data

Social responsibility

8

Strengthen cyber security

Recognise the physical and cybersecurity needs of all the AI models and applications

9

Ensure people-centred design

Keep people at the centre of AI design decisions and respect enduring values, including fairness, reliability and safety, privacy and security, inclusiveness, transparency, and accountability

10

Invest in AI skills

Microsoft are investing in initiatives to spread AI skilling broadly around the world

11

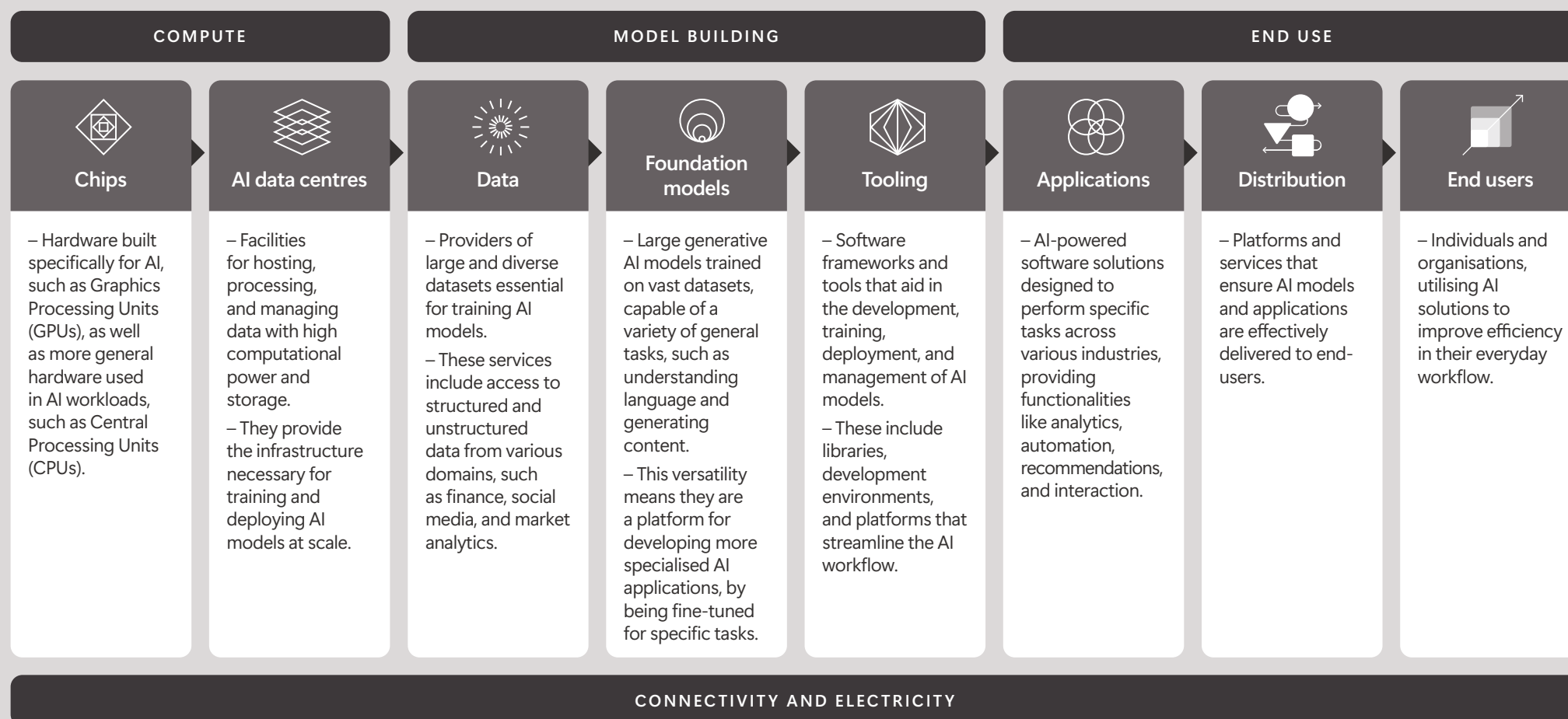
Address environmental impact

Manage AI data centres in an environmentally sensitive manner and use AI to advance environmental sustainability needs

Appendix

The new AI economy is defined along the AI tech stack, from chips manufacturers to end users

Full definition of the new AI economy



We assess attractiveness and capability to identify priority components in the AI tech stack for Australia to pursue

Microsoft's AI Access Principles

		FACTORS	METRIC(S)	SOURCE(S)	
CAPABILITY INDEX	ATTRACTIVENESS INDEX	Current opportunity	Current Australian AI revenue predictions (2025)	Mandala analysis	Factors indexed & weighted based on importance for attractiveness
		Future opportunity	CAGR for Australian AI revenue (2025)	Mandala analysis	
		Differentiator potential	Scoring of differentiator potential of tech stack components	Mandala analysis, consultation	
	Institutions & Infrastructure	Political stability	Political Stability and Absence of Violence/Terrorism index (2024)	World Population Review (2024)	Factors indexed & weighted based on importance for each component of the AI tech stack
		Digital readiness	The Digital Skills Gap Index (DSGI, 2021)	Wiley (2021)	
		Sustainability	Sustainable Development Goal Index (2023)	Sustainable Development Report (2023)	
		IT infrastructure	Median mobile connection speed (2022)	Ookla (2022)	
	AI Readiness	AI regulations	Government AI Readiness Index (2023)	Oxford Insights (2023)	
		AI research	Annual research publications in English/ Chinese (2021)	Center for Security & Emerging Tech (2023)	
		AI sentiment of society	Global Opinions and Expectations about AI – Global Survey (2023)	Ipsos (2023)	
		AI patents	Annual patent applications per M inhabitants related to AI (2023)	Center for Security & Emerging Tech (2023)	
	Operating environment	Access to land	Land (sqm) per capita (2018)	CIA World Factbook (2020)	
		Construction costs	Construction costs/ sqm per country (2024)	Multiple, mainly Arcadis (2024)	
		Electricity costs	Cost per Kwh (2023)	Multiple, mainly CableCo UK (2023)	
		Labour costs	Mean nominal hourly labour cost per employee by economic activity (2011 to 2017 price purchasing dollar, latest data point for AUS)	ILO (2023)	
		Business environment	Ease of doing business ranking (2019)	World Bank (2019)	
	Workforce and existing activity	Industrial industry potential	Real GDP sector composition (2017)	The World Factbook (2017)	
		Service industry potential	Real GDP sector composition (2017)	The World Factbook (2017)	
		Successful start-ups	Number of unicorns per M people (2022)	CB Insights (2022)	
		AI start-ups	Number of newly funded AI start-ups per Country (2013-2023)	Quid (2024)	
		VC fundings	Venture capital investments per M people (2019)	OECD (2019)	
		AI demand	% of jobs requesting AI skills (2022)	Lightcast/ OECD (2022)	
		AI skills	AI Research Capabilities (Publications), 2014-2024 (annualised)	AI ranking (2024)	

Quantifying the attractiveness of each component of the new AI economy for Australia follows four steps

Overview of methodology for calculating the economic opportunity of the new AI economy in Australia

	Identify AI businesses	Categorise AI businesses based on AI tech stack	Quantify revenue	Estimate figures for 2025, 2030 and 2035
	OUTPUT	OUTPUT	OUTPUT	OUTPUT
METHOD	– Generate key search terms, using OECD list and additional terms – Filter search terms through business directories – Cull businesses with insufficient information (e.g., funding information) – Manually add key businesses not included in directories	– Map industries and key terms in company descriptions to new AI economy tech stack components – Run code to automatically segment companies – Verify results across data sources and conduct manual sense checks	– Convert total funding data into approximate valuations, based on valuation / funding ratios  – Convert valuations into annualised revenue using valuation/ revenue ratios for AI companies	– Take average of existing projections of Australian AI spending growth, including from DISR, IDC, IMARC IT Brief, and Statista – Apply CAGR as proxy for growth in 'applications' component of Australia's AI tech stack
			– Pull data on total revenue, and use the proportion of Australian engineers as a proxy for Australian share  – Use Bloomberg modelling to calculate AI related share of revenue	– Index growth rates for other components of the value chain based on Bloomberg modelling of global AI value chain to calculate CAGRs of remaining components
DATA SOURCES	OECD, Crunchbase, CSIRO, Desktop research	ChatGPT, Python, Mandala analysis	Crunchbase, Seeking Alpha, Dealroom, LinkedIn, Aventis Advisors, Bloomberg, desktop research	DISR, IDC, IMARC IT Brief, Statista, Bloomberg Mandala analysis

More resources

Understanding AI at Microsoft

This page provides a comprehensive overview of Microsoft's efforts and vision around artificial intelligence. It covers key AI advancements, responsible AI practices, and how Microsoft is using AI to empower individuals and businesses globally.

VISIT news.microsoft.com/ai/

Microsoft: AI in Action

Discover how AI is transforming industries and solving complex problems through real-life examples. This resource highlights the power of AI across various sectors, showcasing projects that range from healthcare innovations to sustainability efforts.

VISIT news.microsoft.com/ai-in-action

Latest News – AI Developments

Stay up-to-date with the latest AI-related news from Microsoft. This section aggregates stories and updates on AI breakthroughs, partnerships, and new applications that are reshaping industries and communities worldwide.

VISIT news.microsoft.com/source/view-all/?_categories=ai

Australia & New Zealand – AI Innovations

Explore how AI is influencing businesses and industries in Australia and New Zealand. This resource highlights local AI innovations and collaborations, providing insight into how the region is leveraging AI for growth and transformation.

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