



Australian Government

DIGITAL ECONOMY STRATEGY

2022 UPDATE

DIGITAL ECONOMY STRATEGY 2022 UPDATE

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FOREWORD

In the 12 months since the Australian Government first launched the Digital Economy Strategy in Budget 2021-22, Australians have continued to enthusiastically embrace digital technologies. Amidst the challenges and uncertainties of the COVID-19 pandemic, increased digital uptake has supported businesses to continue to operate and grow and helped Australians stay connected.

The Strategy sets an ambitious vision for a digital Australia and charts the actions we are taking towards Australia being a top 10 digital economy and society by 2030.

This vision means improved choice for consumers by having the right settings to help Australians make better informed decisions. It means more agile businesses that can adapt to changing consumer needs and thrive in response to advances in technology. A leading digital economy drives the skills, new products and creativity needed to boost innovation and create new job opportunities. And it will help ensure our use of technology is safe, secure and trusted.

Australia's prosperity and security depends upon us embracing these opportunities and having the flexibility to respond as the world around us changes. Accordingly, the Strategy is a living document, designed to respond to emerging developments in digital technology, our economy and society.

When I launched the first iteration of the Strategy last year, it included a landmark investment of \$1.2 billion. Over the past year we have provided a further \$347 million in funding to bolster the Government's digital economy investment. We are building on these investments in 2022, with a further \$1.1 billion to support the development of Australia's leading digital economy.

We're making good progress and this update details key achievements over the past 12 months. These include the launch of the National Artificial Intelligence Centre with CSIRO's Data61 as part of our AI Action Plan; the expansion of the world-leading Consumer Data Right across the economy; the release of the Digital Readiness Assessment Tool to support small business digitalisation; and the successful uptake of the Skill Finder initiative.

This update also outlines new measures taken since the Strategy's launch that continue momentum towards achieving our 2030 vision. These new measures include funding to shape global critical technology standards; support for more women to take on digitally skilled roles as part of a mid-career transition; and further building our capabilities in critical and emerging technologies, including quantum computing.

In this fast-paced and ever-changing environment there is more to do. We are continuing to focus on establishing strong foundations, building capability in emerging technologies and lifting our ambition through digital growth priorities such as digital small and medium enterprises, modern industry sectors, dynamic and emerging tech sector and digital government services. It has been terrific to see industry embrace and wholeheartedly endorse this Strategy by working alongside Government to achieve these goals together. We won't reach our goals alone and I thank the private sector for their ongoing engagement. I look forward to continuing our work together to progress the Strategy and unlock its benefits for all Australians as we track towards achieving our 2030 vision.



Senator the Hon Jane Hume
**Minister for Superannuation,
Financial Services and the
Digital Economy**
**Minister for Women's
Economic Security**

STRATEGY ON A PAGE



OVERARCHING VISION

FOR AUSTRALIA TO BE A TOP 10 DIGITAL ECONOMY AND SOCIETY BY 2030



Right foundations to grow the digital economy

Putting in place the foundations that enable economic growth and prosperity.

- Digital infrastructure**
- Cyber security, safety and trust**
- Skills and inclusion**
- Systems and regulation**
- Trade and international engagement**



Building capabilities in emerging technologies

Building our capabilities in the emerging technologies we know today and preparing for others we cannot imagine now, including:

- Artificial intelligence**
- Internet of Things**
- Data analytics**
- Blockchain**
- Quantum computing**



Lifting our ambition – Digital Growth Priorities

Identifying the key areas for collaboration and strategic investment across the economy to support digital growth, jobs and investment.

- Digital SMEs**
- Modern industry sectors**
- Dynamic and emerging tech sector**
- Digital government and services**

We will invest in the settings, infrastructure and incentives to grow Australia's digital economy

Our Strategy

Australia's place in the world will be defined by how we adapt to digital technologies and modernise our economy. The next 10 years will determine whether we lead or fall behind.

We are well placed to be a leading digital economy and have strong foundations, but many countries are investing heavily in their digital futures.

COVID-19 accelerated the take up of digital technology and highlighted how it can enhance business and government operations. Australia needs to maintain this momentum to secure our future prosperity and protect our interests.

The Digital Economy Strategy maps the pathways to achieve this, drawing on the Government's previous investments and new actions to meet our ambition.

Sub-goals

All businesses are digital businesses

All Australians have access to digital skills and technology

Frictionless government service delivery

Smart regulation that builds trust

Integrated data and technologies makes life easier

Measures of success



AUSTRALIA'S LEADING DIGITAL ECONOMY

Australia's digital economy is continuing to grow and flourish. A thriving digital economy has been critical to Australia's resilience through the COVID-19 pandemic and will be an important part of our future growth and prosperity.

The COVID-19 pandemic accelerated the adoption of digital technologies in Australia, with many Australians turning online for healthcare, work, learning and staying connected. The private sector adapted and innovated – with around 9 in 10 Australian firms adopting new technologies.¹ Essential government services remained operational and available. In 2020-21, there were 1.4 billion online interactions with government, an increase of 126 million on the previous year.

Digital innovation is driving our recovery and future prosperity through growth in tech sector jobs and record venture capital investment. The potential benefits to the Australian economy through digitalisation have been estimated to be as much as \$315 billion over the next decade, with the potential to create up to a quarter of a million new jobs by 2025.² Digital technology is continuing to change how Australians work, learn and engage.

That is why the digital economy is one of the five core elements of the Government's national economic plan. Together with keeping taxes low and cutting red tape, investing in infrastructure and skills development, a strong digital economy means a strong economy and a better future. It will ensure we grow together and not apart, creating jobs that set Australia up for the future.

The Strategy outlines our vision for Australia's future as a top 10 digital economy and society by 2030. The Government is working to ensure Australia meets this vision. We are making progress on investments under the Strategy and are continuing to unlock new investment.

The Government has invested more than \$3.5 billion in digital initiatives since 2020.

In addition, the Government has invested \$1.67 billion under the Cyber Security Strategy 2020, \$4.5 billion for the NBN upgrade plan, \$1 billion for the JobTrainer Fund and over \$2 billion of further complementary investments in this Budget for connectivity in regional and remote Australia, improving online safety and building skills.

These investments are already helping to deliver a digitalised Australia and achieve progress against the pillars of the Strategy:

- **Foundations** are being laid to ensure Australian businesses, workers and consumers benefit from digitalisation including through resilient digital infrastructure, safety and security online, improvements to Australians' digital skills and engagement with the international community.
- We are investing in building Australian capability and industry uptake of **emerging technologies** like quantum, artificial intelligence (AI) and crypto assets.

- And we are encouraging ambitious, coordinated partnership through our **digital growth priorities** – digital SME's, modern industry sectors, dynamic and emerging tech sector and digital government and services, enabling industry to work alongside government to support the growth of Australia's digital economy.

Australia's ongoing prosperity and wellbeing is now intrinsically linked to digital innovation and adoption continuing over the years ahead.

The quickly evolving nature of our workforce also presents significant opportunities. As we take steps to meet our digital skills challenge, we have the opportunity to shape our future workforce to ensure that it is reflective of Australia's rich diversity. Women are currently under-represented, making up only 29 per cent of technology workers in Australia.³ Encouraging more women to enter into tech roles, which have the potential to be more secure, more flexible and better paid, can support women's economic security. Tapping into this important talent pool will also be critical if Australia is to reach its digital economic ambitions and improve women's economic security.

Nations around the world are also investing in their digital futures, and in new and emerging technologies. Australia must continue its efforts to be a leading digital economy to remain competitive, secure our future prosperity and shape a global digital environment that protects our national interests.

That is why the Strategy is a living strategy, recognising dynamic changes in technology, business models, and the creation of new products and services. The Government continues to invest in the digital economy to ensure Australian businesses and consumers' interests are protected and economic prosperity is secured.

We are maintaining momentum in the 2022-23 Budget with more than \$1.1 billion in digital initiatives and more than \$2 billion in complementary investments.

Action since last Budget includes:



\$1 billion for the technology investment boost



\$70 million to establish a Quantum Commercialisation Hub



\$22.6 million to further support 5G innovation



\$3.9 million for helping women transition mid-career to digital workforce



Reforming Australia's payment system for the digital age



Keeping Australians safe and secure online

How the digital economy is growing

57%

Growth in online ecommerce in 2020-21, to over \$50.5 billion

Australian business tech spending is forecast to grow by 6.3 per cent in 2022 – to \$111 billion



\$109b

Estimated value of digital activity in Australia's economy in 2019-20

100 million telehealth services delivered to 17 million patients (March 2020 – March 2022)



8,675

New domestic university IT graduates in 2020 up over 24 per cent on 2019. IT is now the fastest growing field of education with domestic enrolments

7.8 million Australians are using myGovID to access online services safely



805,500 Australians employed in tech roles – tech jobs are forecast to grow at over 5 per cent per year in the next 5 years

Venture capital funding in Australia reached a record USD \$2.5 billion in 2020-21



800,000

Number of Australians estimated to own cryptocurrency

At least 75 per cent of Australians can already access 5G technology where they live



Sources: Australia Post (2021) *Ecommerce Industry Report*; Gartner (2021) *IT Spending Forecast*; Australian Bureau of Statistics (2021) *Digital Activity in the Australian Economy 2019-20*; Department of Health (2022); Department of Education, Skills and Employment (2021); Digital Transformation Agency (2022); Deloitte Access Economics (2021) *Digital Pulse*; KPMG (2021) *Venture Pulse*; Commonwealth Treasury (2021); Telstra (2021) *Our 5G network now reaches 75% of Australians*.

The Government's investments are delivering tangible benefits

The Australian Government's investments in the digital economy are also helping more Australians and Australian businesses seize the opportunities on offer.

- ✓ Our world-leading reforms in open banking, eInvoicing and digital identity enable Australian businesses to transact quickly and seamlessly online meaning they are being paid more rapidly, boosting cash flows.
- ✓ The NBN is now available to over 99 per cent of all Australian premises, with over 12.1 million homes and businesses able to order an NBN service, and over 8.5 million of these premises currently connected. This is boosting the productivity of businesses and making it easier for Australian families to use multiple devices when they are working and learning from home.
- ✓ Round one of the Australian 5G Innovation Initiative is supporting 19 projects across key sectors of the economy to explore novel uses of 5G. The projects range from tracking the transport of lifesaving medical supplies in remote areas to 5G-enabled livestock counting on farms.
- ✓ The National AI Centre launched in December 2021, with the appointment of its inaugural director, is driving the development and adoption of AI across the economy. It is also positioning Australia as a global leader in AI technology.
- ✓ With over 95,000 enrolments so far, the Skill Finder platform is helping build the digital skills of Australians in areas such as cloud computing, data analysis and digital marketing.
- ✓ The Digital Readiness Assessment Tool has helped almost 1,300 businesses across 20 industries assess their digital maturity and start their digital transformation since the launch of the tool in November 2021.
- ✓ The Digital Directors Training Program is enhancing directors' knowledge and capability in digital governance practices with almost 5,000 enrolments since its launch in December 2021.

These investments, our strong foundations and the vision of the Strategy are unlocking further investment and action across the economy. We are seeing our local tech sector go from strength to strength. From global success stories like Atlassian, Canva and Afterpay, to thriving and dynamic start-up and scale-up businesses such as Finder, FrankieOne and AgriWebb.

This all helps make Australia a more attractive place for investment – growing jobs and skills – ensuring Australia is globally competitive.

The Government's commitment to, and investment in, the digital economy is encouraging action and investment by others across the economy and community who also see the opportunities.

- The Digital Skills Organisation and Tech Council of Australia jointly launched the Digital Employment Forum, which will bring together major tech employers and educators to apply new approaches to attracting and training digital tech workers.
- Google's Digital Future Initiative involves collaboration with Australian universities and the CSIRO to create new digital infrastructure and build digital talent in Australia.

- Telstra's major new joint venture with data science consultancy Quantum will transform Telstra's customer offering through data-driven products and processes.
- The Commonwealth Bank of Australia is using custom-built algorithms to keep track of natural disasters across Australia in order to offer same-day, one-on-one assistance to impacted customers.

A \$1 billion vote of confidence in Australia's digital economy

Google is investing \$1 billion over five years as part of the Digital Future Initiative. The Digital Future Initiative will focus on supporting the foundations of the digital economy, investing in the infrastructure, skills and platforms that Australian businesses and organisations use everyday. It will also invest in research, fostering scientific advancement and skill development through the new Google Research Australia hub. The Hub will work with other Google Research hubs and the Australian research community to explore how AI and machine learning can be used to tackle complex problems. Google will also partner with Australian universities and the CSIRO to solve local and global challenges. Australia is one of only 20 Google Research Hubs.

Independent economic modelling suggests that the Digital Future Initiative will support more than 6,500 new direct jobs and 28,000 total jobs across Australia.⁴ Google's investment in Australia is a vote of confidence in Australia's digital economy and demonstrates the importance of national leadership through the Digital Economy Strategy.



Source: Google Australia⁵

Digital economy policy landscape

Investments made by the Government and the private sector in Australia's digital economy are significant but it's not all the Government is doing to build a leading digital economy and society. The Strategy provides an overarching framework to bring together a range of digital and data strategies across Government to ensure there is a coordinated approach to becoming a top 10 digital economy.

Building on Australia's Cyber Security Strategy 2020 and the International Cyber and Critical Tech Engagement Strategy, launched in April 2021, the Government has released:

- The **Blueprint for Critical Technologies** (November 2021) to maximise the opportunities offered by critical technologies while minimising any risks they may pose
- The **Australian Data Strategy** (December 2021) which sets out how Australia will become a modern data driven society by 2030
- The **Digital Government Strategy** (December 2021) which continues to drive the digitisation of government services.

These complementary initiatives recognise that the digital economy is multi-faceted and evolving in different sectors at different rates. Tailored, targeted and proportionate responses are required to realise the opportunities and challenges presented by the digital economy. The Strategy brings together all relevant action and investment from across Government to ensure a clear and coordinated path to Australia being a top 10 digital economy and society by 2030.



Delivered



In development



Strategic connection

WE ARE MAKING PROGRESS TOWARDS OUR 2030 AMBITION

The Strategy, the investments that underpin it, and the commitment of Australian businesses and communities mean we are well on the way to achieve our 2030 vision.



More Government services are available online – making life easier for businesses and individuals during normal times and facilitating access to support in times of need

- 15 government services are now online through myGov



Australian businesses continue to grow their use of ecommerce tools and consumers continue to take up online shopping

- The number of businesses that have registered for eInvoicing in Australia has doubled in the last 7 months



Starting a new business digitally is making it easier for more businesses to do business – whether it is registration, getting to market or paying tax

- Government facilitates the use of data and software to pre-fill returns and report payments to the ATO and the states and territories – saving businesses time and money.



Digitally skilled workers are an increasing share of the Australian workforce and are the fastest growing area of skills

- Employment in the technology sector is estimated to have grown at twice the rate of other sectors in the economy since 2005. Employment of technology workers grew by 66 per cent between 2005 and 2021, compared to 35% in other sectors.⁵



Australian businesses are continuing to invest and improve their cyber security practices, becoming increasingly aware of growing threats and how they can protect themselves.

- Businesses in Australia spent a record \$4.9 billion on cyber security in 2021.⁶

This early success is delivering positive outcomes to the Australian people and businesses on our way to our 2030 vision.





Right foundations to grow the digital economy

The Australian Government has been working hard to strengthen Australia's existing foundations, deliver on commitments made to date and make further investments to enable economic growth and prosperity.

We are putting in place the whole of economy settings that provide the basis of investment – digital infrastructure, cyber security, safety and trust, skills, systems and regulation, and trade and international engagement. This includes:

- More homes and business are connected to the **National Broadband Network (NBN)** and 5G that has powered Australia's digitalisation through the COVID-19 pandemic.
- We are helping to create a fairer global playing field for Australian businesses to compete and trade on and protecting our national interests in critical and emerging technology standards.
- More Australians are able to access and use the internet and digital technology at home and at work through investment in skills and education.

Digital infrastructure

To build our digital infrastructure, the Australian Government continues to invest in an ecosystem that enables businesses to be competitive and resilient. This includes investment in delivering fast, affordable and reliable connectivity for the regions, supporting digital inclusion, and investing in new and critical technologies like 5G.

We're making progress

Investment in the NBN has been critical to pandemic resilience and our economic recovery. There are now over 8.5 million premises benefitting from their connection to the NBN.⁷ This has supported the shift to working and learning from home made by many Australians during the height of the pandemic.

NBN Co continues to make new investments to provide even better broadband services to Australians. NBN Co is rolling out its \$4.5 billion network investment plan to deliver gigabit capability on demand to 75 per cent of households and businesses in the fixed-line network. This is scheduled for completion in 2023. Already, 42 per cent of premises on the fixed line footprint are benefiting from this investment.⁸ Of the total \$4.5 billion investment, NBN Co will invest more than \$2 billion in the network over the next three years for residents and business in regional areas. These upgrades will help ensure people and businesses in all parts of Australia will have access to capabilities that are central to the modern digital economy, including cloud computing and working from home tools.

The **Australian 5G Innovation Initiative** has 19 projects under round one announced in August 2021. These trials are supporting industry uptake of productivity-enhancing 5G technology, and stimulating private sector investment and new jobs. Projects supported under this initiative explore the use of automated vehicles to enhance mobility for people with a disability and older Australians, using 5G to count livestock with real-time data validation and testing 5G in underground places, such as mines, so operators can realise the benefits of enhanced environmental, safety and productivity outcomes that come with advanced wireless communication.

What's new

The **2021 Regional Telecommunications Review** found there has been a step change in the demand for telecommunications services, and the arrangements for ensuring the needs of regional communities are met must reflect this change.

Off the back of the Government's strong track record of telecommunications investment in regional, rural and remote Australia, the Government is investing \$811.8 million over the next five years in a new **Connecting Regional Australia Initiative**.

The Government is also investing \$480 million to boost the **NBN fixed wireless network**, with the NBN Co joining this investment with a further \$270 million out of its own funds. This investment will mean up to 1 million premises in regional, rural and remote Australia will be able to access faster and more reliable internet, particularly during busy times of day. Funding will enable NBN Co to increase upload and download speeds available for all fixed wireless customers, switch 120,000 premises from satellite to fixed wireless and increase the data allowance for remaining satellite customers in regional, remote and peri-urban areas.

Following the strong response to round one of the **Australian 5G Innovation Initiative**, the Government is investing in a second round to further support businesses to trial new and emerging 5G applications. A total of \$20 million in competitive grants is on offer in round two, of which up to \$2 million is set aside for projects in the Western Parkland City district in New South Wales.

To help inform future regional telecommunications decision-making, the Australian Competition and Consumer Commission (ACCC) will examine appropriate mobile network quality and coverage reporting requirements for mobile network operators, as well as mobile tower access fees.

The **Office for Future Transport Technology (OFTT)** will continue to provide national leadership and coordination to improve road safety and productivity by supporting adoption of automated vehicles and cooperative intelligent transport system technologies. The Australian Government is working with states and territories to deliver a nationally consistent regulatory approach to enable the safe and legal operation of automated vehicles on public roads across Australia. Once fully adopted, automated light vehicles are estimated to provide up to \$64 billion per year in economic benefits,⁹ including through accident avoidance, productivity gains, congestion avoidance, and consumer savings through fuel savings and reduced insurance and parking costs.

The Government has also agreed to actively consider the benefits of embedding digital technology in new Commonwealth-State co-funded transport infrastructure projects.

Connected by 5G

Collaborative robots, or “cobots” are changing the future of industry and our daily life. Supported by the Australian 5G Innovation Initiative, the Connected Cobots project is exploring how the higher speed and lower latency made possible by 5G technologies can enable cobots to interact with their surroundings including nearby humans in real-time. The project is a partnership between Nokia and the University of Technology Sydney.

The project combines the benefits of humans and robots working ‘collaboratively’ together to perform tasks. Cobots can change the way we work across various sectors, including healthcare, farming and manufacturing. Significant progress has been made so far augmenting the cobot with a suite of sensors. Initial tests have demonstrated the significant quantity of data these sensors produce. The outcomes of the project are likely to improve our understanding of how 5G can be harnessed for other autonomous entities such as cars, robots, and drones.

Round one projects under the Australian 5G Innovation Initiative are due to be completed in December 2022. More information on the Initiative and related projects can be found at www.infrastructure.gov.au/5ginitiative



Source: Department of Infrastructure, Transport, Regional Development and Communications¹⁰

Cyber security, safety and trust

Cyber security, safety and trust play a key role in giving businesses and consumers the confidence to fully engage in the digital economy. We are balancing encouraging investment opportunities in the digital economy with ensuring the digitalised world is safe, secure and trusted.

We're making progress

Continued threats to Australia's cyber security makes this a priority for the Government, business and citizens. Under **Australia's Cyber Security Strategy 2020** the Government is investing \$1.67 billion to achieve the Government's vision of a more secure online world for Australians, their businesses and the essential services on which we all depend. This includes a \$1.3 billion **Cyber Enhanced Situational Awareness and Response (CESAR)** package. CESAR will ensure that Australian Signals Directorate can identify more cyber threats, disrupt more foreign cyber criminals, build more partnerships with industry and government, and protect more Australians.

The **Security Legislation Amendment (Critical Infrastructure) Act 2021** represents the first tranche of reforms to uplift the security and resilience of Australia's critical infrastructure, with further legislation before Parliament that will, if passed, give all Australians assurance that our essential services are resilient and protected, by delivering a stronger critical infrastructure security framework. This includes a risk management program, enhanced cyber security obligations for systems of national significance and updated information sharing provisions.

The **Cyber Security Best Practice Regulation Taskforce** is exploring pathways to enable more secure use of internet-connected devices, assist businesses to adopt best practice governance and technical standards, and develop tailored support for small businesses. This reflects the collaborative approach that the Government is taking to uplifting Australia's cyber security posture under Australia's Cyber Security Strategy.

The Government is also taking action to protect the community and economy from ransomware attacks, establishing new criminal offences, tougher penalties, expanded law enforcement powers and a mandatory reporting regime as part of its **Ransomware Action Plan** released in October 2021.

The **National Plan to Combat Cybercrime**, released in March 2022, sets out a framework for enhanced collaboration between the Commonwealth and state and territory partners to combat evolving cybercrime threats. The **National Cybercrime Capability Fund** has been established to support an uplift in national law enforcement capabilities and responses to cybercrime. Projects identified for funding in the first year of the Cybercrime Capability Fund include specialist training activities and enhanced victim support.

The **Surveillance Legislation Amendment (Identify and Disrupt) Act 2021** came into force in September 2021, and introduced new law enforcement powers to identify and disrupt serious crime online, including on the dark web and through the use of anonymising technologies.

Ensuring the safety of Australians online is more than cyber security. The Government is taking action to ensure individuals can feel safe in their interactions online, and that consumers can take control of their privacy.

The **Online Safety Act 2021** came into force in January 2022, providing additional protections for Australians online. The **Online Safety (Basic Online Safety Expectations) Determination 2022** sets out the expectations the Government has for social media services, relevant electronic services and designated internet services. The world leading eSafety Commissioner is continuing to work to protect Australians online.

The Government also developed world-leading reforms to Australia's defamation laws – **Social Media (Anti Trolling) Bill 2021** – to protect Australians from the harm of online trolls. It is also developing a binding Online Privacy Code for social media services and other online platforms to give Australians greater control over their personal information held by these platforms.

The Government is also working through the G20 to ensure we can fully harness the benefits of digitalisation and enhance user confidence online by ensuring the internet is safe.

In its response to the ACCC's *Digital Platforms Inquiry*, the Government committed to undertake a review of the **Privacy Act 1988** to ensure privacy settings empower consumers, protect their data and best serve the Australian economy. Consultation on the Issues Paper and Discussion Paper has now closed, with a final report to be made public after Government consideration.

What's new

The Government has committed to a **\$104 million technology-focused package to keep women and children safe** and prevent devices from being used to perpetrate or facilitate family, domestic and sexual violence. This includes establishing a \$20 million fund for states and territories to trial electronic monitoring of high-risk and persistent family and domestic violence offenders. Up to 30,000 victim-survivors will be able to access support to stay in their own homes through security assessments and upgrades including cameras, bug sweeps and safe phones. \$26.6 million will also be provided for online safety initiatives including supporting the eSafety Commissioner to set up a team of experts to provide victim-survivors with practical and personalised support to address technology-facilitated abuse through referrals from counselling services.

The **Select Committee on Social Media and Online Safety** was established in December 2021 to inquire into the impact of online harms on the mental health and wellbeing of Australians and the effectiveness of the industry's response. The Committee's report found that online harm is rampant on digital spaces, with some elements of digital platforms amplifying the harm and causing further distress to victims. Whilst steps have been taken by industry and government to limit this, the Committee made 26 recommendations. These include educational and awareness campaigns on digital citizenship, civil and respectful online interactions; increased funding to support victim-survivors of technology-facilitated abuse and a digital safety review on the legislative framework in relation to the digital industry.

The Government has announced the establishment of an **Online Safety Youth Advisory Council**. The Council will be coordinated by the eSafety Commissioner and made up of up to 20 young Australians, aged between 13 to 24 years, to provide a direct voice to Government on the challenges and solutions to online safety issues impacting young people.

This year the Government will introduce **legislation to combat harmful disinformation and misinformation online**. This legislation will provide the Australian Communications and Media Authority (ACMA) with new regulatory powers to hold big tech companies to account for harmful content on their platforms.

The **Cyber Hubs Pilot** will be extended and expanded to increase the protection of the government services and data that Australians and businesses rely on. The Australian Taxation Office will join the Department of Defence, Department of Home Affairs and Services Australia in the pilot as a Cyber Hub.

Leading the world in online safety

Online safety is about promoting a more positive online experience by protecting users from content and conduct online which can be harmful. It focuses on protecting and empowering people to increase user confidence and trust in the digital environment.

Australia's world leading *Online Safety Act 2021* (OSA) commenced on 23 January 2022. The OSA provides additional protections for all Australians, including through:

- rapid removal schemes of cyberbullying material and non-consensually shared intimate images
- a new scheme dealing with cyber abuse of adults
- blocking material depicting abhorrent and violent conduct
- enforcing the online content scheme; and
- new codes and standards for the online industry.

The OSA also provides for the Basic Online Safety Expectations (BOSE) which clearly set out Australia's expectations of industry to provide a safe, secure, inclusive and transparent digital environment, and minimise the risk of harm to its users.

Transparency is enhanced under the BOSE, as industry can be required to give the eSafety Commissioner reports about their compliance with the BOSE, including what kind of harm has occurred on their platforms and how they dealt with it.

Transparency builds trust. A sense of trust that industry is doing its best to protect Australians from harm is essential to citizens' continued engagement in the digital economy.



Skills and inclusion

Building the digital capabilities of Australians is essential for the success of Australia's digital economy. New and emerging technologies are driving a need for more advanced digital capabilities across many industries. The National Skills Commission found that in 2021, data and digital skills dominated the fastest growing emerging skills – since 2015 demand for artificial intelligence skills has grown almost 20 times.¹¹

Digital skills are also increasingly part of every job, meaning that Australia will need to upskill and re-skill those already in the workforce to meet our digital skills needs. Building the digital capabilities of Australians also means all Australians can be part of the digital economy. This increasing demand is taking place in a competitive global market-place. Australia is not alone in its digital economy ambitions, nor is it alone in its thirst for talent to achieve that ambition.

We're making progress

The additional 10,000 digital skills training places under the expanded \$2 billion **JobTrainer Fund** are being rolled out – meaning more Australians are upskilling in these high demand areas and helping to build the workforce Australia needs for its digital future.

The **Skill Finder** platform has continued to help build digital skills by connecting job seekers to free online courses. Celebrating its one year anniversary in November 2021, the Skill Finder platform is re-skilling and upskilling Australian workers with over 3,000 courses covering areas such as graphic design, cloud computing, data analysis and management, digital marketing, security, and UX design. There have been over 95,000 enrolments in these courses.

The Australian Government has been working with industry to deliver digital skills training in a more flexible and timely manner. The four **Digital Skills Cadetship Trial projects** have been selected. Together these projects will involve engagement with a range of employers from large enterprises through to small business and start-ups and will support diverse groups including women embarking on a digital career, refugees and humanitarian migrants and Aboriginal and Torres Strait Islander people. Participants in the programs will develop and apply digital skills through a blend of work placements and on-the-job learning and formal training and mentoring.

Additional funding of \$43.8 million is being provided to expand the **Cyber Security Skills Partnership Innovation Fund** for industry and education providers to deliver more projects that meet local requirements to quickly improve the quality and quantity of cyber security professionals in Australia. This builds on the \$26.5 million provided for the Innovation Fund under the Cyber Security Strategy 2020.

The **Next Generation Emerging Technology Graduates Program and Next Generation Artificial Intelligence Graduates Program** will fund at least 480 nationally competitive scholarships to increase the supply of job-ready technology specialists. The first round of applications for universities and their partner organisation closed in March 2022, with student recruitment commencing in April 2022.

The Australian Institute of Company Directors is delivering the **Digital Directors Training Program**. Digital Directors is a 10-topic webinar series that provides critical insights for directors seeking to enhance their knowledge and capability in new and emerging digital governance practices. Although only launched in December 2021, there have been almost 5,000 enrolments in the program to date.

What's new

As Australia's workforce continues to respond to the broader digital economy, the Australian Government is taking further steps to ensure greater diversity in our future workforce. Complementing one of the four Digital Cadetship Trials noted above, the Government is taking further steps to support **more women to take on digitally skilled roles as part of a mid-career transition**.

Under this measure, coaching and mentoring will provide individual advice to women interested in making a career switch or undertaking the transition to the tech workforce. The Government will also co-design with industry an online platform to help match women's skills and experience to tech jobs and navigate different pathways into the technology workforce.

The Australian Government is investing a further \$2.8 million to enable the **Skill Finder** platform to continue to build digital skills through free online courses – showing the strength of partnerships with industry.

The Australian Government is investing \$18.6 million to provide **digital and data training** and employment opportunities for people living in regional areas. This includes piloting data and digital Australian Public Service (APS) Academy Campuses alongside universities to build a stronger pipeline of skilled employees.

Innovative approaches to building Australia's digital capabilities

The breadth and nature of Australia's digital skills needs, which will continue to evolve as technologies evolve, means Australia will need innovative solutions to build the digital capabilities of our future workforce. This is why, in 2020, the Government established the Digital Skills Organisation (DSO) to pilot and test new approaches that align training in digital skills with the skills needs of employers.

The DSO's *Train 100 data analysts* project has trialled a market-driven solution to rapidly train and employ data analysts, a critical skill needed in the digital workforce. Three different types of training providers – a public registered training provider (TAFE Queensland), a private registered training provider (Goanna Education) and another-registered training provider (General Assembly) – were each contracted to develop a new training product or update an existing one to align with a skills-based approach to training. Four different learner cohorts were targeted – new entrants, mature-aged learners, Aboriginal and Torres Strait Islander learners and people seeking specialist data analyst skills who were already tertiary-qualified.

The project has proved successful, achieving an overall 86 per cent completion with 57 per cent of participants securing employment in data analytics roles. For those participants already employed, the training has successfully enabled them to expand their digital skills. Significantly, the project has provided important insights that will inform broader digital skills pathways to create a more diversified talent pool with employer-required skills.



Source: Digital Skills Organisation¹²

Systems and regulation

Smart and modern settings will help drive Australia's digitalisation and enable people, businesses and government to realise the full benefits of the digital economy. New technologies are challenging established regulatory frameworks and systems, which can lead to outdated or uncertain regulation. This can be a barrier to the development and adoption of technologies or weaken existing systems and protections.

We're taking steps across a range of new and emerging technologies to ensure regulation in Australia is fit-for-purpose in the digital age and able to respond to future digital developments – positioning Australia as a leader in digital economy regulation.

We're making progress

The Australian Government is reforming Australia's **payments system** to improve regulatory certainty for businesses, better protect consumers and investors and support competition by making it easier for innovative new entrants.

The Government is consulting on modernising the ***Payment Systems (Regulation) Act 1998***, a new payment system designation power for the Treasurer, and a list of payments functions to underpin the introduction of a single, tiered payments licensing framework for payments.

The Government is also taking a forward-leaning approach to **crypto asset regulation** that includes consultation on the establishment of a licencing framework for digital currency exchanges, consultation on a custody or depository regime for businesses that hold crypto assets on behalf of consumers, considering the issue of de-banking through the Council of Financial Regulators and commissioning a report from the Board of Tax on the taxation of digital transactions and assets.

Reforms will modernise the rules governing how Australians transact every day, including through new forms of payment like digital wallets and buy now pay later. The Australian Government will also investigate the feasibility of a Central Bank Digital Currency and seek to address the complex issue of de-banking.

Temporary measures introduced in response to COVID-19 have been made permanent allowing companies the ability to make better use of technology to hold meetings, send meeting-related materials and validly execute documents electronically.

eInvoicing can save businesses time and money. To support the uptake of eInvoicing in Australia, more than 80 per cent of Australian Government invoices are now receivable via eInvoicing. This is a significant increase since the Australian Government mandated that all Commonwealth agencies must be able to receive eInvoices by 1 July 2022. The Australian Government is also working with large businesses such as Woolworths and BOC Gas to deliver eInvoicing pilots. These pilots have helped test and drive adoption across supply chains while also supporting improved payment times for businesses.

The **Modernising Business Registers Program** is establishing a new and modern registry service to make it easier for businesses to meet their registration obligation and make business information more trusted and valuable. As part of the Program, Director IDs are providing directors with a unique identifier they can keep forever.

What's new

Positioning Australia as a leader in digital economy regulation will enhance public trust and confidence and ultimately facilitate the greater uptake of emerging technologies. Regulatory reform can also be a useful tool to increase the availability of data, encouraging a new wave of start-ups and fintechs to explore innovative uses of this information.

The Government is consulting widely to ensure regulation and our regulatory systems remain fit-for-purpose as technology like AI and automated decision-making develop to maximise the opportunities and manage the risks.

The Australian Government is expanding the world leading data portability regime – the **Consumer Data Right (CDR)** – to make it easier for consumers and small businesses to undertake everyday tasks such as making payments, opening and closing accounts and applying for a home loan.

The Government will implement its response to the **Inquiry into the Future Directions for the Consumer Data Right**. This will enhance the functionality of CDR and consumer benefits to enable consumers to direct accredited and trusted third parties to act on their behalf in relation to their data. This will help consumers identify more personalised products and services and support effortless switching, opening and closing of accounts, updating of personal details and directing payments be made.

The CDR continues to expand to new sectors and data sets, with sharing of energy data set to commence in October 2022. Telecommunications was designated in January 2022 to allow consumers to access more accurate information about their internet and phone bills so they can more easily choose products and bundle solutions that suit their needs.

The Government also announced, in January 2022, that Open Finance is the next area for CDR expansion. This will cover targeted datasets in superannuation, general insurance, non-bank lending and merchant acquiring services. Open Finance will support whole-of-life financial and wealth management providing consumers with a comprehensive picture of their finances, and spurring the creation of apps that will help consumers in both important life decisions and day-to-day budgeting.

The Government is continuing to invest in the **Digital Identity** system to improve online access to government services and payments. Around 7.8 million Australians and 1.4 million businesses have now created a Digital Identity via the Commonwealth's identity provider myGovID, giving users access to over 100 government services.

Cash flow support and red tape reduction will generate an annual compliance saving every year by making better use of data to pre-fill payroll tax returns, allowing businesses to use software to report taxable payments and lodge trust income tax returns electronically. Businesses will also save time and money by being able to use accounting software to submit some ABS surveys.

The Government will implement reforms to modernise the execution arrangements for statutory declarations, deeds and agreements so that they can be made using digital technology. Reforms to modernise document execution could deliver over \$400 million a year in savings for small businesses and consumers.

Making separation simpler and smarter

amica.gov.au is a digital platform that guides separating couples to make agreements about their parenting arrangements and dividing their property. It uses AI to make a suggestion about how to divide assets fairly.

The AI takes the couple's circumstances into account and enables them to be confident that the division of money and property is comparable to other similar circumstances. Users can enter their information at their own pace, in their own space, using a desktop or a mobile device.

amica makes positive suggestions about what needs to be covered in a parenting agreement, enabling couples to find common ground with ease.

The online platform enables users to keep communication open by sending messages and documents to each other as they move through the process. It offers the ability to access further information and support services at each step, breaking down complexity by explaining rights and responsibilities in plain language.

Couples can generate written agreements, or a joint application for a court order, to reflect what they have agreed on amica.

amica's guided pathway for separating couples has the potential to ease pressure on more formal pathways such as courts, to save users thousands of dollars in costs, and reduce emotional stress, improving outcomes for families going through separation. It is not suitable for situations where there are already existing court orders or ongoing cases.



Source: *Legal Services Commission of South Australia*¹³

Trade and international engagement

By opening markets and setting global standards, Australian businesses, workers and consumers can benefit from access to safe and secure critical technologies and digital trade. Australia is also helping to shape the global digital order to secure our future prosperity and protect our national interests.

We're making progress

The **Australia-UK Free Trade Agreement** is Australia's most recent FTA that works to reduce barriers to digital trade. Signed in December 2021, the A-UKFTA provides an important signal of our shared commitment to global trade and the rules-based international order.

The Agreement addresses restrictive practices such as requirements for paper-based trade administration documents and makes a commitment to accept electronic contracts, except in specific circumstances. Australia and the UK are aiming to establish interoperable eInvoicing frameworks and ensure that electronic transaction regulations are implemented in a manner consistent with international frameworks. The Agreement also maximises opportunities for digital trade across all sectors, and includes strong rules promoting data flows and prohibiting data localisation in most circumstances. These rules create a more certain, open and secure online environment, while ensuring appropriate consumer protections.

Australia's Services Exports Action Plan is promoting an internationally competitive services sector that boosts Australian exports. The Government is continuing to work with a range of sectors under the Action Plan to identify further opportunities to strengthen the competitiveness of Australian service suppliers into the future.

The Government continues to support the growth of the Australian fintech sector to drive fintech adoption. The Government has supported 76 Australian fintechs to enter new markets and export their fintech solutions, plus delivered 443 capacity building services to Australian fintechs getting ready for international expansion. In partnership with Fintech Australia, more Australian fintechs are being supported to scale globally, including into Singapore, the United States and Vietnam.

In November 2021, the Government released the **Critical Technology Supply Chain Principles** to help governments and businesses make decisions about suppliers and the transparency of their own products. The Principles are voluntary for industry and the Australian Government will use them in its own decision making practices.

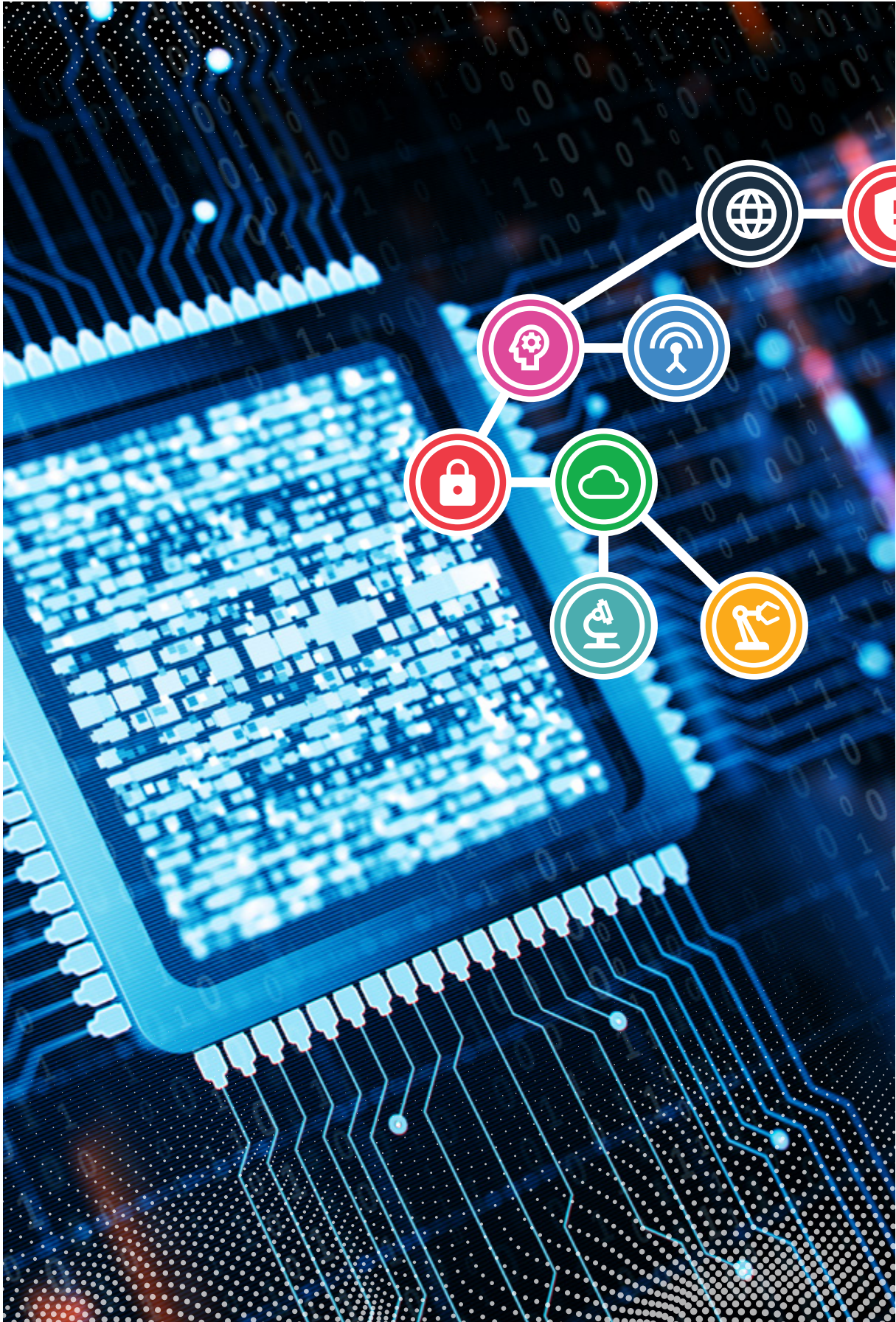
Australia is actively engaging in international dialogues, such as through the G20, United Nations, Association of Southeast Asian Nations (ASEAN), Organisation for Economic Co-operation and Development (OECD), the Quadrilateral Security Dialogue (Quad), and with the G7 to foster partnerships with like-minded nations on the digital economy. Work is also being done to influence global standards through Australia's interaction with the international community. Australia is currently standing for re-election on the International Telecommunications Union Council. In an increasingly global world, Australia's international engagement to influence the development of international rules and standards for digital trade and technologies ensures Australian businesses, workers and consumers are able to benefit from an open, reliable and interoperable environment for digital trade which reflects our values.

Australia is chairing (with Singapore and Japan) the **Joint Statement Initiative on E-commerce (JSI) negotiations at the World Trade Organization (WTO)** to develop the first set of global digital trade rules. JSI negotiations have achieved significant progress since launching in 2019 and the initiative now has 86 WTO signatories including the US, EU, and China.

What's new

The Australian Government is investing \$18.6 million in **protecting Australia's national interest in critical and emerging technologies standards**. Through stronger partnerships with international counterparts and a Business Standards Development Capability Program, Australia's work will help create a fairer global playing field for Australian business to compete and trade. Consistent with Australia's International Cyber and Critical Technology International Engagement Strategy this investment will also support Australia to shape how new technologies are built and ensure standards promote liberal-democratic values that foster innovation and economic collaboration across nations, rather than divide them.

The Government will release Australia's new **Digital Trade Strategy** which will help maximise economic growth by shaping an enabling environment for digital trade. It will guide Australia's practical action as a leader in digital trade, informing our work to develop digital trade rules to deliver commercial benefits and push back against digital protectionism. The strategy will set out Australia's digital trade commitments which focus on trade facilitation, trust, location of computing facilities and cross-border flows of data. The strategy will also set out how Australia advocates for these rules, whilst ensuring legitimate public policy objectives are met, such as in the areas of privacy, consumer and data protection.





Building capabilities in emerging technologies

Enabling new technology solutions and uptake across all Australian sectors will unlock productivity gains and create new products, markets and industries. In turn this will grow Australia's jobs, income and export opportunities. By prioritising Australia's national interests, including its prosperity, security and social cohesion, the Government aims to maximise the opportunities of critical and emerging technologies, while managing the risks. Building Australia's capabilities in critical and emerging technologies will better prepare us to seize the opportunities they offer today and tomorrow.

Key priorities and investments include the Quantum Commercial Hub, improving regulation of cryptocurrencies and the establishment of the National AI Centre to establish world-class capabilities in emerging technologies.

We're making progress

In November 2021 the Australian Government launched the **Blueprint and Action Plan for Critical Technologies** which set out a vision and strategy for protecting and promoting critical technologies in our national interest. The Blueprint for Critical Technologies articulates Australia's strategy for maximising the opportunities offered by critical technologies as well as managing the risks. The **Action Plan for Critical Technologies** practically demonstrates Australia's value-add in critical technologies to industry, academia, and our international partners.

Launched in June 2021, Australia's **AI Action Plan** sets out a vision for Australia to be a global leader in developing and adopting trusted, secure and responsible AI. A key initiative of the AI Action Plan, the **National Artificial Intelligence Centre** was launched in December 2021 to help unlock the potential of AI for business by coordinating Australia's AI expertise and capabilities. The Centre has been established within CSIRO's data and digital specialist arm Data61.

Applications for round one of the **Catalysing the AI Opportunity in Our Regions** program are being assessed, with grants of \$250,000 to \$500,000 on offer to support AI projects that offer solutions to challenges in regional areas. The first round of applications for universities and their partner organisations under the **Next Generation Artificial Intelligence Graduates Program** have now closed, with the first cohort of students commencing in Semester 2 2022, following an artificial intelligence symposium and masterclasses in March 2022.

Round one projects of the **Australian 5G Innovation Initiative** are currently being delivered and include a mix of 5G enabled technologies, including Internet of Things (IoT) devices, virtual and augmented reality, autonomous vehicles, edge computing and artificial intelligence. An example from the education and training sector is Liminal VR. Using 5G virtual reality (VR), artificial intelligence and edge computing technology, Liminal VR is developing Interchange, a 5G-enabled VR soft skills training program, which will generate real time, animated responses by high fidelity virtual humans. Animated responses will be determined by real time emotional analysis of verbal statements made by trainees, using IBM's Watson cloud-based cognitive computing system. Interchange will demonstrate the capabilities of commercially available 5G networks to a range of industries across Australia – made possible by huge innovation leaps driven by 5G, edge computing, AI and VR.

In December 2021, the Government delivered Australia's first **Data Strategy** setting out the Government's vision for Australia to become a modern data and digital-driven society by 2030 and a national approach to data as a key driver of the future economy. The Government is inviting the public to submit their feedback on the Data Strategy by the end of June 2022, with a refreshed Data Strategy to be released by the end of 2022.

The Government is continuing to progress the **Data Availability and Transparency Bill 2020 (DAT Bill)**. The DAT Bill would provide Australians with improved access to Australian Government data and establish appropriate safeguards and governance mechanisms to support enhanced sharing of this data.

The **National Research Infrastructure Roadmap** outlines the national research infrastructure required over the coming decade to maintain research excellence, increase innovation and address emerging research challenges, including in resources technology, frontier technologies in modern manufacturing and a National Digital Research Infrastructure Strategy.

What's new

The Government is continuing to implement its **Blueprint and Action Plan for Critical Technologies** to achieve its vision and strategy for protecting and promoting critical technologies in our national interest.

The List of Critical Technologies in the National Interest includes 63 technologies that the Government has identified as critical for Australia's national interest today or within the next ten years. The List is just one part of the suite of materials being developed to assist in the management of critical technologies across all sectors in Australia. The short list of critical technologies contains nine technology areas for initial focus, covering 23 critical technologies.

A key initiative under the Action Plan for Critical Technologies, the **Australia-India Centre of Excellence for Critical Technologies** in Bengaluru, India will bring together Australian and Indian technologists, policy practitioners, academics, researchers and thought leaders and promote stronger investment opportunities and cutting-edge innovation in cyber, critical and emerging technologies.

The Australian Government is investing \$111 million to secure Australia's quantum future, supporting the commercialisation, adoption and use of quantum technologies. This includes \$70 million over ten years for a **Quantum Commercialisation Hub** to commercialise Australia's quantum research and help Australian businesses access new markets and investors. The Government will also develop Australia's first **national quantum strategy** to unlock greater private sector investment in quantum technologies.

Growing Australia's quantum industry has the potential to add \$4 billion and 16,000 new jobs to the economy by 2040.¹⁴ Australia and the US have also signed a **Joint Statement on Cooperation in Quantum Science and Technology**. The statement aims to enhance each country's quantum industry capabilities through improved market access and knowledge sharing.

The **Australian Data Strategy's Action Plan** sets out tangible measures the Government is implementing to improve our data settings across the economy. This includes **enhancements to data.gov.au**, with the intention to transition it to a front door for Australian Government data, consistent with existing data access policies by 2025, as well as measures to improve data capability across the Government. The Government is also investing \$27.1 million to enable the **Office of the National Data Commissioner** to improve the sharing of and promote the greater use of public sector data.

From little things big things grow

Green Atlas is dedicated to assisting tree-crop growers in managing the life-cycle of each fruit on every tree in their orchards. Its product, Cartographer, uses an innovative combination of hardware and AI software that allows buds, flowers, fruitlet and fruit counts to be quickly and accurately mapped over entire orchards. Growers and agronomists can access an unprecedented level of detail, unmatched by manual methods, allowing crop management to be tailored to every tree. This means processes can be made 6,000 times faster, helping to increase the profit per acre received by growers.



Source: *AI Action Plan*¹⁵





Digital growth priorities

Our digital growth priorities identify four key areas where we are encouraging ambitious and coordinated partnerships with business and the community. The priorities recognise the Government's enabling role to help the private sector drive digital growth, jobs and capability.

Key recent investments include the Technology Investment Boost to support business to go digital, the University Research Commercialisation Action Plan and the expansion of the Digital Games Tax Offset that will make Australia a more competitive investment destination.

Digital SMEs

Digital technology has been crucial to the survival of many small businesses throughout the COVID pandemic and set them on a path for future success. Lifting digital capability and adoption across the economy will support new ways to work and do business, increasing profitability and saving time.

In December Xero reported that small business digital adoption has accelerated during the COVID-19 pandemic. Compared to pre-pandemic levels, ICT expenditure is up 13 per cent in Australia following a prolonged period of relative stability.¹⁶

We're making progress

Launched in November 2021, the **Digital Readiness Assessment Tool** is helping businesses identify what they are doing well and where they can improve when it comes to digital maturity. The free online tool enables businesses to measure and upgrade their digital capability, compare themselves against their peers, and access government support programs.

The **Digital Solutions – Australian Small Business Advisory Services (ASBAS)** program continues to provide small businesses with access to low cost, high quality advice on a range of effective digital solutions. Digital Solutions – ASBAS has helped almost 17,000 small businesses in the year to 30 June 2021 and 32,000 small businesses to date. A pilot is underway with not-for-profit organisations that are commercial in nature, including Indigenous organisations, to help organisations deliver services more effectively and better support communities in need. This includes the program helping Indigenous organisation First Hand Solutions to maximise digital opportunities through the Blak Market, a micro-business hub for Indigenous businesses providing economic development opportunities to Indigenous people.

In February 2022, the Government introduced legislation into Parliament to allow taxpayers to **self-assess the effective life of depreciating intangible assets**. Reforms are planned to take effect from 1 July 2023, after the temporary full expensing measure concludes.

The Government continues to support the adoption of **eInvoicing** by more businesses. Virtual information sessions, online materials and engagement with key business intermediaries are helping to raise awareness of eInvoicing, which can save businesses up to \$20 in cost savings per invoice when they choose to use eInvoicing in place of traditional paper or emailed PDF processes.

A key goal of the **National Artificial Intelligence Centre** and the accompanying AI and Digital Capability Centres is to address the barriers that SMEs face in adopting and developing trusted, secure and responsible AI. The Centre will work to connect businesses with the talent, knowledge and tools to succeed. Ensuring SMEs can take advantage of these technologies, will help position Australia as a leader in developing and adopting artificial intelligence products and services.

The Government is using data to make life easier for small business. Changes to pay-as-you-go instalments will assist small businesses to manage their cash flow, improvements to Single Touch Payroll are reducing reporting burdens and the Modernising Business Registers program is making it cheaper and easier to register and maintain a company.

What's new

The **Technology Investment Boost** will provide a further \$1 billion to small businesses that digitalise their operations with a new bonus tax deduction. This will encourage investment in digital assets and services. Businesses with an aggregated annual turnover below \$50 million per annum will be able to deduct an additional 20 per cent of the cost incurred on business expenses and depreciating assets that support their digital adoption, such as portable payment devices, cyber security systems or subscriptions to cloud-based services. The bonus deduction applies for expenditure incurred between 29 March 2022 until 30 June 2023 and in relation to qualifying expenditure up to \$100,000 per annum.

The digital upskilling of Australia's small businesses will also be supported through the Government's broader \$550 million **Skills and Training Boost**. Small business will be eligible to deduct an additional 20 per cent of expenditure incurred on external training courses provided to employees. This complements the Technology Investment Boost by providing additional support to small businesses to train their staff in the use of new digital technologies being adopted by the small business.

The Government is investing \$53.9 million in a third round of the **Manufacturing Modernisation Fund** to back technology uptake among high-potential small and medium manufacturing businesses across the National Manufacturing Priorities. To date, the Government has invested almost \$100 million alongside private sector investment of approximately \$460 million to help businesses develop new products, enter new markets and improve their productivity.

The Government is considering how tech solutions can make it easier for SMEs to comply with modern awards to ensure that employees are paid correctly and employers have more confidence to hire and invest.

The Government's continued investment in the **Skill Finder** platform means more small businesses will have access to the extensive catalogue of courses to build their digital skills and skills of their employees.

Regional small businesses will benefit from the more than \$1.3 billion investment in regional communications and resilience through the **Connecting Regional Australia** initiative and upgrade to NBN Co's fixed wireless and satellite services.

Through the **Modernising Business Registers Program** the Government is returning the benefits of digitalisation to business by removing the retail search fees on registry data. This is estimated to deliver \$32 million in financial savings for businesses and individuals. The Government will also encourage businesses to keep registry information up-to-date by removing the company late review fee and some lifecycle fees. This is expected to deliver \$32.9 million in financial savings and give more than 35,000 hours back to business. These changes will commence from September 2023 when company registration moves to the new registry platform.

Crafting an online business

Stocking a unique variety of handmade baby and children's gifts, candles, ceramics, artwork, DIY kits and more – House of Handmade was established in 2016. It's been under new ownership since 2021, when Stefanie, a former banker, took the reins.

Stefanie – who has endured many challenges since taking ownership, including COVID-19 – says she loves running the store. House of Handmade went online when the pandemic hit in 2020, and Stefanie moved the site to an online platform in June 2021 when she took over.

"I hadn't had any experience with running an online store and I didn't fully appreciate the amount of work that goes into it. But it allowed the business to continue during the lockdowns and I was able to expand my reach to customers around Australia."

Stefanie joined the Digital Solutions - Australian Small Business Advisory Services program. She found the mentoring sessions extremely valuable – it provided practical advice which is already making a difference. Stefanie has implemented a new Search Engine Optimisation strategy that has helped House of Handmade rank in a more effective way for the business.

"My website has changed to make sure my value proposition is clear. Social media is more planned and consistent. I'm using some new tools to help keep me on track. I still have a lot of changes to make, but I am much more confident in getting there."



Source: Australian Small Business Advisory Services Program¹⁷

Modern industry sectors

Every sector can benefit from the adoption of digital and technology solutions. As the global digital economy grows, Australian businesses will also need to increase their use of digital technologies, infrastructure and services to remain internationally competitive. Globally competitive export sectors, including manufacturing, mining, agriculture and construction are investing to ensure they are operating at the digital frontier.

We're making progress

Through Australia's **Modern Manufacturing Strategy** the Government is making strategic investments to back Australian businesses to boost manufacturing capability and supply chain resilience. Under the first round of the **Modern Manufacturing Initiative's** translation and integration streams, seven Australian food and beverage companies will share in \$33 million to help unlock new manufacturing opportunities, boost production, and create more jobs across the country.

The \$2.2 billion **University Research Commercialisation Action Plan** sets out reform priorities to supercharge Australian research commercialisation and innovation. This includes \$243 million for the Trailblazer Universities program to boost prioritised R&D and drive commercialisation outcomes with industry partners with the establishment of the **Australian Economic Accelerator** program, as well as a \$150 million capital injection to expand the CSIRO Main Sequence Ventures program, which backs start-ups and supports research commercialisation.

The Government will also look to embed digital technology in new Commonwealth–State infrastructure projects, such as Internet of Things (IoT) sensors and use of digital twins. This will promote efficiency and innovation and unlock productivity gains in the infrastructure network, delivering benefits across the economy but particularly for our modern industry sectors such as mining and agriculture that rely heavily on the network.

The Government is investing \$68.4 million in agricultural traceability. The **National Agricultural Traceability Alliance** will foster national leadership and a National Traceability Summit will support information exchange. A National Agricultural Traceability Hub will deliver common data standards and harness emerging technologies such as blockchain to demonstrate provenance while reducing compliance burdens.

The Government is investing over \$33 million on technology to save farmers and SMEs time and money, and boost investment opportunities through greater use of regtech. More than 500 SMEs participating in the **Renewable Energy Target** will save over \$24 million annually by eliminating time sapping manual reporting. A smart phone app will provide farmers with the digital tools to help them identify areas of carbon potential and report on progress of their carbon projects.

What's new

The Australian Government is investing \$111 million to secure Australia's quantum future, supporting the commercialisation, adoption and use of quantum technologies through a **national quantum strategy** and \$70 million over 10 years for a **Quantum Commercialisation Hub** to commercialise Australia's quantum research and help Australian businesses access new markets and investors. Advances in quantum may improve our mining and manufacturing precision sensors, communication networks and quantum computing capacity.

Scanning to Safety

Brisbane-based company Emesent, a spin-out from CSIRO, specialises in drone autonomy, LIDAR mapping, and data analytics. Their flagship product, Hovermap, is a smart mobile scanning unit that automates the collection and analysis of data in challenging, inaccessible environments, such as underground mines. Data collection creates significant safety and operational challenges in underground mines. People and equipment are regularly sent into hazardous areas, which poses a significant risk to their safety. Hovermap enables a drone to navigate into these areas to map them, keeping personnel away from danger and improving the quality of data collected to unlock new insights.



Source: Department of Industry, Science, Energy and Resources, Australia's National Resources Workforce Strategy¹⁸

Dynamic and emerging tech sector

Australia's technology sector is helping to build Australia's skills base and support innovation and productivity across other sectors of the economy. We have seen amazing growth – at home and on a global scale – with successful fintech businesses such as Zeller and Immutable.

We're making progress

The **Business Research and Innovation Initiative (BRII)** provides Australian startups and SMEs with grant funding to develop innovative solutions for government policy and service delivery challenges. Five rounds of the program have launched to date with 23 government challenges supported by 16 APS agencies. The latest rounds of the program have focused on improving occupational licencing information sharing and uptake of the automatic mutual recognition scheme to decrease regulatory burden, reducing unnecessary regulatory compliance and streamlining regulatory processes.

The Government has invested \$6.9 million through the **Blockchain Pilot Grants** program to investigate the capability of blockchain to enhance the productivity and competitiveness of Australia's critical minerals and food and beverage sectors.

Queensland company Everledger is investigating how blockchain can be used to create a 'digital certification' for critical minerals throughout the extraction and movement phases. This will help companies in the sector to ensure adherence to compliance regulations, while also simplifying the process and lowering costs.

Victorian-based Convergence.tech is leveraging blockchain technology to help automate key reporting processes under the excise system, a commodity-based tax on goods including beer and spirits. This will help companies in the sector to reduce compliance costs associated with the creation, storage and transportation of their products.

What's new

The Government has confirmed that the previously announced **Digital Games Tax Offset** will be available in relation to qualifying expenditure on developing games after their official release – more commonly known as 'live ops'. The Digital Games Tax Offset is a 30 per cent refundable tax offset for eligible businesses expenditure on developing eligible games. This expansion will make Australia a more attractive and competitive destination of international games development, supporting investment and highly-skilled, transferrable jobs.

The Government is expanding access to **Employee Share Schemes** and further reducing red tape so employees at all levels can directly share in the business growth they help to generate.

A dynamic and emerging tech sector is increasingly powered by data. Recognising this, the Government is taking steps to ensure that Australian businesses have access to high quality and affordable data. That is why the Government is expanding the **CDR** to new sectors and data sets, including energy, telecommunications, and targeted datasets in superannuation, general insurance, non-bank lending and merchant acquiring service as part of Open Finance.

As company registration and lifecycle management moves to the new registry platform, retail search fees through the new registry website will be removed. This will further increase Australian businesses access to data.

The Government is also investing \$16.5 million in the Data Discovery Initiative to promote greater use of our national data assets for public benefit. This initiative will make the Australian Government's data assets discoverable and support whole-of-economy reuse.

Digital Revolution in Trade

Founded in Melbourne in 2015, Airwallex uses technology to help businesses manage payments and expenses across borders. Its success is global. By late 2021, Airwallex had a market valuation of over US\$5.5 billion.

Airwallex was inspired by founders, Jack Zhang and Max Li's, experience running a café in Melbourne. As small business owners, they recognised the impact of high foreign transaction fees and banking costs on their bottom line. Together with friends Lucy Liu and Xijing Dai, Max and Jack sought to build a better solution for businesses operating cross-border with Airwallex.

Airwallex allows businesses to take advantage of the new opportunities emerging from the shift to a borderless, contactless and cashless world, without the constraints of the traditional banking system. With technology at its core, Airwallex's digital infrastructure can help businesses transact, collect and pay in over 50 currencies and across more than 130 countries without the constraints of the traditional global financial system.

Airwallex believes the Australian fintech ecosystem around them played a key role in its growth. With operations in Melbourne and Sydney, the company sees and taps into the depth of talent available in Australia.

Having benefited from this environment, Airwallex's founders are now investing in it. In 2021, they set up Capital 49. This is a new venture capital fund that aims to raise US\$200 million.



Source: Australian Trade and Investment Commission¹⁹

Digital government and services

Digital technology is changing how people and businesses interact with government to access essential services. Investing in these technologies, the Government is delivering simple, secure and trusted services making it easier for Australians to access services from any location and at any time.

We're making progress

myGov continues to provide Australians with a front door to access a range of government services online and in one place. There are now over 24.6 million active myGov accounts allowing the community to access services including Medicare, the Australian Taxation Office, National Disability Insurance Scheme, My Health Record and My Aged Care. Testing of a myGov app for Android and iOS devices is underway to provide Australians with greater access when they need it.

The next wave of **My Health Record** has already made COVID digital certificates accessible and downloadable to a smart phone digital wallet. COVID-19 immunisation reminders are letting people know when they are eligible for a booster shot. And there are partnerships with states and territories for certificates in check-in apps. Further enhancements will support innovation in health technology and better outcomes for older Australians.

In line with its refocused mandate in the central portfolio of Prime Minister and Cabinet, the **Digital Transformation Agency** is providing Government with enhanced strategic advice, oversight and assurance across the breadth of government's entire digital estate.

What's new

The **Digital Government Strategy** released in December 2021 is providing clear direction to government departments and agencies on the digital transformation needed to be one of the world's top three digital governments by 2025.

The Australian Government is investing \$26.9 million in the development of the second pass business case for the **'tell us once' trade system** to make cross-border trade easier and less costly for business. The Simplified Trade System Implementation Taskforce will continue to engage closely with business to co-design reforms that deliver better regulations, business processes and solutions to simplify border systems and services.

The Government is also investing \$21.1 million to modernise Australia's core trade ICT system as part of the first step towards delivering a world class cross-border trade system for Australia. This builds on the Government's investment in the 2021-22 Mid Year Economic and Fiscal Outlook to simplify cross-border trade for business by developing a whole of government **cross-border trade data sharing standard and framework**.



BRINGING DIGITAL POLICY TOGETHER – A WHOLE OF GOVERNMENT APPROACH

The investments in this update are only part of Government's actions across a range of policy areas to support the digital economy. The diagram below shows how other government policies and programs support the pillars of the Strategy to ensure a clear and coordinated path to Australia being a top 10 digital economy and society by 2030.

Right foundations to grow the digital economy



Trade and international engagement

Strategies & policies

- Defence Export

Programs

- Asialink Business
- Busting Congestion for Agricultural Exporters
- Third Open Govt National Action Plan

Acts/Bills

- CLOUD Act negotiations
- Defence Trade Controls Act 2012 reforms

Systems and regulation

Strategies & policies

- National Disability
- National Freight and Supply Chain

Inquiries and reviews

- Digital Advertising Services
- Digital Platforms Services

Programs

- Online Employment Services Gateway
- Regional Data Hub
- National Freight Data Hub
- Single Touch Payroll

Skills and inclusion

Programs

- Industry 4.0 Apprenticeships
- Job Ready Graduate
- Employing Your First Person
- MySkills

Inquiries and reviews

- Indigenous Digital Inclusion Plan

Funds / Grants

- Regional Collaborations (COVID-19 Digital)
- National Priorities and Industry Linkage

Digital infrastructure

Strategies & policies

- 5G Strategy
- Universal Service Guarantee

Programs

- Satellite Based Augmentation
- Microgrid Feasibility
- Mobile Black Spot

Grants

- Alternative Voice Services Trials

Cyber security, safety and trust

Strategies & policies

- Critical Infrastructure Resilience

Programs

- Cyber Security Business Connect and Protect
- Cyber Security Assessment
- Defence Cyber Gap

Reviews

- Consumer Safeguards

Bills/Legislation

- Identity-Matching Services Bill
- Security Legislation Amendment (Critical Infrastructure Protection) Act

Frameworks

- Protective Security Policy
- APEC Cross Border Privacy Rules

Building capability in emerging technologies



Strategies & policies

- 5G Strategy
- Advancing Women in STEM

Funds/Grants

- Defence Next Generation Technologies

- Australia-India Cyber and Critical Tech Partnership
- Australia-UK Cyber and Critical Tech Partnership

Frameworks

- Artificial Intelligence Ethics

Digital growth priorities



Strategies & policies

- APS Digital and Data Professional
- Defence Transformation
- Whole of Government Hosting
- National Digital Health
- Secure Cloud
- MyGov
- My Health Record
- My Aged Care
- Australia's Critical Minerals
- Modern Manufacturing
- Cooperative Research Centres
- National Hydrogen
- National Policy Framework for Land Transport Technologies

- Digital Directors Training

Programs

- Adoption and Innovation Hubs
- Defence Industry Capability
- Small business digital champions
- Empowering Business to Go Digital
- Research and Development Tax Incentive
- Technology Investment Roadmap
- Venture Capital Partnerships
- Electronic pharmaceutical prescribing
- Health Delivery Modernisation

Grants

- Future Fuels Fund
- Advanced Manufacturing
- Technology Co-Investment

TAKING THE STRATEGY FORWARD

The overarching message from a wide range of stakeholders is that while the latest trends or technologies may draw the focus, the Government needs to get the basic foundations right for Australia's digital economy to succeed. This means the Government needs to ensure that regulation keeps up with technology, infrastructure provides for safe and rapid online connectivity, and businesses have access to skills and capital in order to innovate and grow.

As this update demonstrates, the Government is committed to the Strategy adapting and evolving to the dynamics of the digital economy and maintaining momentum across the pillars to ensure Australia is able to achieve its vision of a top 10 digital economy by 2030. The Government will continue to enable, incentivise, build capabilities and deliver services to help Australians and our businesses realise the benefits of the digital economy.

TOTAL INVESTMENT

2022-23 Budget

Measure	Investment (\$m)
Right foundations to grow the digital economy	
Protecting Australia's National Interest in Critical and Emerging Technologies Standards	18.6
Supporting Women's Mid-Career Transition to the Tech Workforce	3.9
Accelerating Digitalisation of the Transport Sector	13.6
Positioning Australia as a Leader in Digital Economy Regulation	6.6
Cyber Hubs - sustainment	30.2
Continue the Digital Technology Taskforce for a further two years	5
Continuing Digital ID	1.9
Building capability in emerging technologies	
Government Response to the Inquiry into the Future Directions for the Consumer Data Right	51
Lifting our ambition - Digital Growth Priorities	
Technology Investment Boost	1,000
TOTAL	1.1 billion

2021-22 MYEFO

Measure	Investment (\$m)
Right foundations to grow the digital economy	
5G Innovation Initiative – Round Two	22.6
Continuing the Digital Identity system to improve online access to government services and payments	160.9
Identifying interventions to meet Australia's digital skills and inclusion needs	0.8
Building capability in emerging technologies	
Driving growth of Australia's quantum industry ^a	111

Measure	Investment (\$m)
Improve the sharing and promote greater use of public sector data	27.1
Scoping enhancements to the data.gov.au	2.8
CDR – Victorian energy reference data	1.8
Australian Data Strategy	0
Lifting our ambition - Digital Growth Priorities	
Digital Games Tax Offset – Expansion	19.6
TOTAL	347 million

2021-22 Budget

Measure	Investment (\$m)
Right foundations to grow the digital economy	
Peri-Urban Mobile Program to fund new mobile solutions	16.4
Continuing Measuring Broadband Australia	7.7
Securing Australia's future mobile networks	31.7
Delivery of a National Data Security Action Plan	1.8
Expanding the Cyber Security Skills Partnership Innovation Fund	43.8
Strengthening Australia's national system of identity settings	2.8
Cyber Hubs pilot	18.8
Digital Skills Cadetship trial	10.7
Accelerating the adoption of eInvoicing	15.3
Accelerated rollout of the Consumer Data Right	111.3
Delivering a Digital Atlas	40.2
Enhanced management of Government data assets	16.5
Ambitious Digital Future - Taskforce	3.2
Building capability in emerging technologies	
Establishing a National AI Centre and AI and Digital Capability Centres	53.8
AI-based solutions to solve national challenges grants	33.7
Catalysing AI in our regions grants ^b	12
Next Generation AI Graduates Program ^c	24.7

Measure	Investment (\$m)
Next Generation Emerging Technology Graduates Program ^c	22.6
Emerging Aviation Technology Partnerships grants	32.6
New Drone Rule Management System	1.6
Developing a National Drone Detection Network	1.5
National Emerging Aviation Technology Policy Statement	0
Artificial Intelligence (AI) Action Plan	0
Lifting our ambition - Digital Growth Priorities	
Allowing taxpayers to self-assess the effective life of depreciating intangible assets	170
Expanding and enhancing the Digital Solutions - Australian Small Business Advisory Services program	12.7
Introducing a digital games tax offset	18.8
Enhancing myGov	200.1
Enabling next-wave My Health Record	301.8
TOTAL	1.2 billion

2020-21 Budget – Digital Business Plan

Measure	Investment (\$m)
Right foundations to grow the digital economy	
<i>Digital Trade and Infrastructure</i>	
Australian 5G Innovation Initiative	22.1
5G Acceleration	7.2
<i>(NBN investments - \$4.5 billion)</i>	
<i>Skills and inclusion</i>	
Digital Skills Finder Platform	2.5
<i>Systems and regulation</i>	
Expanding digital identity	256.6
Mandatory adoption of eInvoicing	3.6
Modern and responsive payments architecture	0
Stored value facilities	0

Measure	Investment (\$m)
Virtual meetings and electronic document execution	0
Trade and international engagement	
Boosting Australia's influence in international standards	6
Boosting Fintech trade and investment	9.6
Building capability in emerging technologies	
Implementing the Consumer Data Right (CDR)	28.6
RegTech Innovation Challenges	11.4
Lifting our ambition - Digital Growth Priorities	
Accelerating the digital capability of Australian businesses	3
B2B partnerships to lift digital capabilities of SMEs	0
Implementation of Modernising Business Registers Program	419.9
Reducing business compliance costs through Blockchain	6.9
Supporting small businesses to go digital	19.2
TOTAL	797 million

a measure reflects investment to 2032-33

b measure reflects investment to 2025-26

c measure reflects investment to 2026-27



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