Northern Territory Digital Industry: Interim Report 2025

NORTHERN TERRITORY GOVERNMENT

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Acronyms	Full form
AI	Artificial Intelligence
ACC-1	Asia Connect Cable - 1
ACCS	Academic Centre for Cyber Security
ACS	Australian Computer Society
ACSC	Australian Cyber Security Centre
AISA	Australian Information Security Association
ANZSIC	Australia and New Zealand Standard Industrial Classification
B2B	Business to Business
BVLOS	Beyond Visual Line of Sight
CDU	Charles Darwin University
CGI	Computer-Generated Imagery
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCDD	Department of Corporate and Digital Development
DCMC	Department of Chief Minister and Cabinet
DEA	Digital Economy Agreement
DIH	Darwin Innovation Hub
DJSC	Darwin-Jakarta-Singapore Cable
DTBAR	Department of Trade, Business and Asian Relations
GDP	Gross Domestic Product

ICT	Information and communications technology
IGEA	Interactive Games and Entertainment Association
IoT	Internet of Things
IT	Information Technology
JSCS	Joint Cyber Security Centre
NACA	North Australian Centre for Autonomous Systems
NT	Northern Territory
NTG	Northern Territory Government
R&D	Research and Development
RPA	Remotely Piloted Aircrafts
SaaS	Software as a Service
SME	Small to Medium-sized Enterprise
STEM	Science, Technology, Engineering, and Mathematics
TAFE	Technical and Further Education
TGI	Territory Growth Initiative
VET	Vocational Education and Training

Contents

Executive summary

The Northern Territory's digital industry is both a key standalone economic sector and a critical enabler of traditional and emerging industries. From telecommunications and traditional information and communication technology (ICT) to cutting-edge innovation and data-driven technologies, the digital industry is becoming increasingly important to our economic future – driving innovation, productivity, and accelerating growth.

In line with the priority to rebuild the Territory economy, the NT Government is committed to developing a capable and sustainable digital industry that supports key Territory sectors, drives innovation and investment, and capitalises on strong digital and diplomatic ties with Asia and other global regions.

To support and inform the development of a new digital strategy, this Interim Report has been developed to capture and synthesise studies, reviews and stakeholder feedback over recent years to better understand the industry's operating context, challenges and opportunities.

Four key themes critical to the industry's growth and long-term sustainability have emerged:

1. Industry capability and capacity: The digital industry is small but diverse, with over 500 technology businesses[1]—from multinational branches to local small and medium enterprises (SMEs) and niche specialists—contributing an estimated $425 million to the economy and employing around 5,300 people, many outside traditional ICT roles[2].

NT Government is the largest customer and employer in the NT digital sector, providing stable demand, revenue certainty, and capability and capacity-building opportunities, as well as helping to create skilled jobs. Additionally, key industries such as defence, mining, energy, agriculture, and tourism increasingly depend on digital solutions, providing opportunities for local businesses to access their supply chains. There are also opportunities for the provision of digital services and solutions to emerging industries like renewables, drones, advanced manufacturing, gaming and e-sports, ed-tech and health-tech.

While the sector is growing and showing strong employment trends, it faces significant capability and capacity constraints. Stakeholders expressed consistent concerns that the NT Government's current procurement model limits innovation, workforce development, and SME participation, with complex processes and risk-averse practices creating barriers for local businesses. They recommended shifting to more flexible, outcome-focused procurement, improving transparency, and enhancing Small and Medium-sized Enterprise (SME) engagement to better support local industry growth and inclusion.

Stakeholders acknowledged the NT's strategic advantages for digital innovation—including its geography, climate diversity, and small, agile government—but raised concerns about limited industry visibility, workforce shortages, and difficulty competing with larger interstate firms. To build capability and competitiveness, they recommended increased government support for SMEs, investment in Research and Development (R&D), targeted talent attraction, export expansion, and stronger alignment between digital solutions and local needs.

The NT is also strengthening its cybersecurity ecosystem through initiatives such as the Darwin Joint Cyber Security Centre and university training pathways, however stakeholders raised concerns about the limited role of local digital businesses in delivering cybersecurity services due to low industry maturity, lack of awareness, and reliance on interstate providers. Recommendations included targeted education,

[1] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023
[2] FSO, Consultation Paper, A case study of the finance, technology and business workforce in the NT, 2024

stronger government collaboration, practical resources, and dedicated support to build local capability, improve data privacy practices, and strengthen the NT's overall cybersecurity resilience.

2. Investment attraction and strategic infrastructure: The NT's strategic location and expanding infrastructure position it as a digital hub for northern Australia and the Indo-Pacific. New subsea cables from Darwin will deliver Australia's fastest links to Southeast Asia and North America, driving growth in the digital industry—especially in low-latency sectors such as e-sports, financial trading, and online gambling. Stakeholders see data centres as offering significant benefits, including enhanced security, scalability, and attractive low-latency connections for South-East Asian businesses seeking data sovereignty, with potential to support emerging tech sectors and create local jobs. However, some are concerned that without stronger collaboration between NT digital businesses and subsea cable providers, large multinational corporations may overshadow local SMEs.

Upgrades to terrestrial networks are also improving national and regional connectivity. However, regional and remote communities still face significant digital challenges and exclusion. While satellite options offer improved access, there are continued challenges with reliability and redundancy. Stakeholders call for telecommunications to be treated as essential infrastructure, underscoring the need to prioritise robust terrestrial cables as essential for long-term digital resilience.

3. Innovation and artificial intelligence: Innovation and artificial intelligence (AI) are emerging as key drivers of growth in the NT's digital industry, offering significant opportunities to address local challenges and unlock economic potential. The NT benefits from unique geographic and digital infrastructure advantages—including low-latency connectivity via subsea and terrestrial cable networks, vast land, and access to renewable energy—which positions it well to develop AI-enabled solutions in areas such as remote healthcare, land management, agriculture, and emergency response.

Stakeholders view AI as a major global opportunity but expressed concern that the NT is lagging in adoption due to a lack of skills, timely strategies, and focus on practical applications. They recommended a structured approach that includes identifying local challenges, investing in AI research and training, and developing solutions tailored to the NT's unique conditions, with potential to export innovations globally, and ensure the inclusive, ethical adoption of emerging technologies.

A growing innovation ecosystem, supported by government programs, research institutions, and hubs like the Darwin Innovation Hub, Charles Darwin University and The Array, is fostering collaboration and experimentation in the Territory. However, stakeholders highlighted a critical funding gap for established SMEs seeking to scale innovations and called for targeted support—such as milestone-based grants and a stronger culture of experimentation and risk-taking—to build a thriving technology and innovation ecosystem whilst ensuring the inclusive, ethical adoption of emerging technologies.

4. Workforce capacity, skills and diversity: A skilled and inclusive digital workforce is essential to the Northern Territory's long-term success, yet the sector continues to face severe shortages—particularly in mid-to-senior roles and positions outside Darwin—alongside limited specialised training and low workforce diversity. Stakeholders identified the lack of career pathways, challenges in attracting and retaining talent, and competition from higher-paying government and interstate roles as major barriers to growth.

While the NT Government and CDU are addressing some of these issues through initiatives like fee-free VET courses, travel subsidies, and digital inclusion programs, further investment is needed in industry-aligned training, skilled migration, and support for underrepresented groups—including women, Aboriginal Territorians, people with disabilities, veterans, and neurodiverse individuals.

Stakeholders also emphasised the importance of greater alignment between education and industry needs, expanded access to in-person micro-credentials, wraparound support for international students,

and enhanced digital literacy in regional and remote communities. Building a resilient, future-ready workforce will require sustained collaboration between government, industry, and education providers, underpinned by inclusive policies, infrastructure investment, and flexible pathways into digital careers.

1. Purpose of report and next steps

This Interim Report has been prepared to provide context, research findings and discoveries from a series of targeted stakeholder consultations conducted in 2024 with over 35 NT digital businesses, industry associations, education institutions and Government representatives.

These findings, paired with accompanying analysis of the digital ecosystem in the NT, will guide further engagement with digital stakeholders and be a key input into the NT Government's new digital strategy 2025. The strategy will be a holistic document, supported by annual action plans, that aims to ensure that businesses, residents, and public services in the NT can access and benefit from digital technologies and advancements, improving digital inclusion, connectivity, and government service delivery.

The NT Government will engage with stakeholders to seek their input about how the strategy can help develop the local digital industry, foster innovation, and expand the sector's size, capability, and capacity.

2. Strategic context

2.1. International

The digital industry has become a fundamental driver of global economic development, significantly contributing to gross domestic product (GDP), employment, and innovation. Traditional industries are undergoing rapid transformation through the integration of artificial intelligence (AI), cloud computing, and the Internet of Things (IoT). These advancements are unlocking new opportunities for innovation, efficiency, and scalability. By 2030, the global digital industry will have added an estimated US$13 trillion to global GDP with figures expected to grow exponentially as businesses further harness the power of emerging technology[3].

The rapid growth of the digital industry has boosted international connectivity allowing businesses to streamline supply chains and offer digital services across borders. The information technology (IT) services sector grew twice as fast as the global economy between 2000 and 2022, averaging 8% annual growth and created jobs at 6 times the rate of the global economy during the same period. Between 2010 and 2022, IT services exports outperformed all other service export types with 12% annual growth globally[4]. As companies seek to enhance operational efficiency and remain competitive in global markets, IT services play a critical role in supporting the continued evolution of the digital economy.

However, as the digital industry's value increases and the world becomes more interconnected, the risk of cyber threats also intensifies. Cybercrime is becoming increasingly sophisticated, with targeted attacks posing significant risks to both public and private sector organisations. The world can't afford to underestimate the impacts of cyber-attacks when it is estimated to have had a global cost of US$9.5 trillion in 2024[5]. Governments and industries are faced with the challenge of implementing robust regulatory frameworks and cybersecurity measures to combat these threats while ensuring that economic and digital growth continue unimpeded.

[3] McKinsey Global Institute, Twenty-five years of digitization: Ten insights into how to play it right, May 2019
[4] World Bank, Digital Progress and Trends Report 2023, 2024
[5] Hays, Global Cyber Security Report 2024, 2024

2.2. Indo-Pacific

The transformative power of the digital industry is poised to unlock substantial economic opportunities for the Indo-Pacific region, with Southeast Asia's digital economy alone projected to reach US$1 trillion by 2030[6]. With Darwin and the Top End strategically located in close proximity to over 500 million people in the Indo-Pacific region, there is significant potential for the Territory's digital economy to benefit through exports, investment, talent attraction and strategic partnerships[7].

The Indo-Pacific region was home to over 23,000 digital and tech startups in 2021, a 77% increase since 2018. Singapore and Indonesia have the highest concentration of startups in the region, with many expanding regionally and globally. Indonesia has 13 digital and tech companies valued over US$1 billion. The region has a rapidly growing pool of talent; in Vietnam approximately 80,000 Information and Communication Technology (ICT) students graduate from universities each year[8]. This growing talent base is a key driver behind the region's flourishing tech startup ecosystem.

Singapore is Australia's largest trade and investment partner in the Indo-Pacific region and is leading the way in the digital economy of the region. In 2020, Australia and Singapore signed a Digital Economy Agreement (DEA) establishing new global benchmarks to reduce barriers to digital trade and economy digitisation[9]. The DEA will ensure Australian businesses and consumers can continue to benefit from the growing digital trade opportunities available in the Indo-Pacific region. Given the region's rapid technological advancements, the Indo-Pacific digital economy represents a significant opportunity for Australia's digital industry to expand its influence and leverage new growth potential.

2.3. National

Australia's $167 billion digital industry expanded by 80% in the five years leading up to 2023.[10] Growing at an average annual rate of 16%, the digital industry is expected to contribute $250 billion to the economy by 2030. Australia's thriving tech ecosystem is being fuelled by venture capital investment and homegrown global tech giants, including over 21 digital and tech companies valued over US$1 billion, positioning the country as a regional digital leader[11].

Australia's advanced digital infrastructure supports world-class connectivity and innovation, providing a strong foundation for further growth. Strategically located as a gateway to the Indo-Pacific, Australia offers an ideal base for businesses looking to expand in the region. With a tech-savvy population that rapidly adopts digital technologies and a talented, diverse workforce, Australia is primed for technological advancement. The Australian government plays a crucial role in driving digital innovation through robust incentives, research and development (R&D) support, and strategic initiatives, creating abundant opportunities across the tech landscape for businesses and entrepreneurs.

Collaboration between universities, research institutes and business has led to the creation of an active innovation ecosystem, driving digital advancement in medicine, advanced manufacturing, mining, and agriculture. Australia is among the top 10 nations globally in 5G connectivity, data centres, telecom investments, and digital cities. Globally, Australia ranks 6th for human capital with the digital skills needed to support tech innovation and 9th for its startup friendly environment[12]. The country's significant investment

[6] Australian Government, Invested: Australia's Southeast Asia Economic Strategy to 2040, 2023
[7] Northern Territory Government, Digital infrastructure, 2024
[8] Australian Government, Invested: Australia's Southeast Asia Economic Strategy to 2040, 2023
[9] Australian Government, Australia-Singapore Digital Economy Agreement, 2020
[10] Austrade, Why Australia – Digital Technology, 2023
[11] Austrade, Why Australia – Digital Technology, 2023
[12] Austrade, Why Australia – Digital Technology, 2023

in digital capability has propelled it to a high level of digital readiness. Industry can rely on Australia for a robust and transparent regulatory environment to protect intellectual property, encourage investment and safeguard data[13].

2.4. Northern Territory

The Northern Territory is uniquely positioned as a strategic gateway for digital connectivity between Australia and the Indo-Pacific, functioning as both a provider of international, national, and local ICT services and an emerging centre for digital innovation in Northern Australia. Its geographic advantage, coupled with substantial public and private investment in critical infrastructure—including data centres and subsea and terrestrial cables—positions the Territory as a compelling hub for digital, data, technology, and telecommunications enterprises. Darwin offers a secure and stable environment, making it an attractive location for businesses seeking to establish, expand, or relocate operations between Australia and the Indo-Pacific region. According to forecasts from the International Data Corporation, technology investment in the Northern Territory is expected to grow from $1.5 billion in 2022 to $2 billion by 2030[14].

The digital industry encompasses a wide range of businesses and activities centred around the creation, management and delivery of digital products, services, and technologies. For this report, the digital industry is defined *as a group of organisations that provide information, media, telecommunications services, as well as computer system design and related services*[15]. This definition was created by analysing and comparing 3 well-established definitions of the ICT and digital sectors, resulting in a list of Australia and New Zealand Standard Industrial Classification (ANZSIC) codes that best represent the core activities of the digital industry. It also spans emerging fields like AI, big data analytics, cloud computing, cyber security, advanced manufacturing, Internet of Things (IoT), and advanced networking technologies like 5G.

The digital industry plays a pivotal role in enabling digital transformation across all sectors, including manufacturing, healthcare, finance, education, and government services. Digital platforms, cloud services, and AI-powered tools are transforming traditional industries by improving processes, reducing costs, and unlocking new revenue streams. This integration of digital technologies into other sectors is often referred to as the "digital economy," which increasingly shapes the global marketplace.

The Territory's digital industry provides services ranging from traditional ICT services, such as infrastructure support and application development to emerging digital services such as web development and content management, audio-visual services, social media services and customer experience design[16]. It also encompasses businesses dedicated to the provision of digital products, services and solutions, along with businesses who require and rely on digital skills within their workforce.

Activating the Territory's digital ecosystem involves driving collaboration and innovation among existing members, while also attracting new participants to expand the industry's reach and enhance its diversity.

As identified in a 2022 supply and gap analysis[17], the NT digital industry can be divided into 3 categories:

[13] Austrade, Why Australia – Digital Technology, 2023
[14] ACS, Australia's Digital Pulse, A new approach to building technology skills, 2023
[15] Northern Territory Government, Digital Industry Baseline Report, 2022
[16] Northern Territory Government, Digital Industry Baseline Report, 2022
[17] Douglass-Savage, V., Rozo, A. and O'Brien, J., 2022 Digital Industry Capability Report, GWI

National ICT Provider with local Darwin Headquarter	Established local Darwin ICT product and service provider	Local Darwin single service provider

• Approximately 5 companies
• Company revenue of more than $20 million
• Main services provided:
  ○ IT consulting
  ○ Overall program management
  ○ Enterprise management end-to-end solutions
  ○ Cloud and data services
	• Approximately 60 companies
	• Company revenue of $5–20 million
	• Main services provided:
	  ○ Niche capabilities in cyber
	  ○ Data Analytics
	  ○ SaaS implementation and maintenance
	  ○ IT and network support
	  ○ Computer and software sales (resellers)
		• Less than 100 companies
		• Company revenue of less than $5 million
		• Main services provided:
		  ○ Web services
		  ○ Digital marketing
		  ○ Computer and software sales services
		  ○ IT and network support
		  ○ B2B small business IT support

3. Key themes

The below key themes have emerged from analysis of research and stakeholder feedback:

1. Industry capability and capacity
2. Investment attraction and strategic infrastructure
3. Innovation and artificial intelligence
4. Workforce capacity, skills and diversity

The below discussion includes summarised feedback from consultations undertaken in 2024. **All content within the Stakeholder Feedback tables is the (abridged) opinions, concerns and advice direct from stakeholder respondents**. Stakeholders included 17 NT digital businesses and 20 industry associations, education institutions, Australian Government, local government and NT Government representatives.

3.1. Industry capability and capacity

The NT Government is committed to supporting the capacity and capability of digital businesses, while encouraging innovation and enabling the adoption of emerging technologies. This support extends to entrepreneurs, start-ups, and new enterprises, while also assisting established businesses in scaling their operations and remaining competitive in an increasingly dynamic market.

NT Government procurement

The NT Government is the largest customer of the local digital industry, providing a stable source of demand, supporting revenue certainty, building the capability and credibility of local businesses, and contributing to the creation of skilled jobs across the NT digital sector. However, as the dominant purchaser and largest employer of ICT workers, the NT Government may also contribute to tensions in the market, shaped by workforce constraints, procurement challenges, and broader economic and business pressures. Balancing

the need for effective government ICT delivery while enabling and supporting the growth of local industry remains a major challenge for the NT Government[18].

Since late 2019, the NT Government has operated a centralised model for ICT procurement through the Department of Corporate and Digital Development (DCDD), who procure common ICT services on behalf of the government. These services are delivered through approximately 30 contracts which cover hardware, telecommunication, network management and the central service centre[19]. In recent years, DCDD's digital procurement and digital management has significantly expanded to encompass multiple highly complex ICT programs to support and improve frontline service delivery for the NT's health services, policing and child protection services. Benefits to centralised ICT delivery and digital project management include a more consistent approach to ICT management and practices, and the ability to leverage greater economies of scale for time and cost efficiencies.

Given that the NT Government represents the largest source of demand in the NT, the digital industry is significantly dependent on government contracts. Some businesses exist primarily to serve the NT Government, while others have entered the NT market specifically to pursue or fulfil these contracts. The most successful providers in this space are generally mid-sized companies with 100–200 employees, who strengthen their service delivery by partnering with local digital firms to enhance their reach and capability[20].

However, for many years, members of the Territory's digital industry have expressed regular and consistent concerns about impediments to the growth of their sector, including of the government's procurement model. In July 2020, an independent review of Government ICT procurement was commissioned, which identified a series of economic challenges facing the Territory's ICT industry:

- major industry reliance on NT Government ICT expenditure to maintain baseline commercial viability
- boom-and-bust investment cycles
- limited ICT workforce capability and capacity
- NT Government employing temporary contractors to manage projects and mitigate delivery risks, as opposed to outsourcing full solutions to the private sector.

The review presented several recommendations to address these challenges, including to:

1. *undertake an independent assessment of the ICT Industry capacity and capability in the NT*

    - *Outcome:* DCDD delivered an independently produced industry capability baseline report in 2022 that identified the industry's supply capability, benchmarked its maturity and provided a view of its capability, which has informed ongoing industry development initiatives such as this Interim Report.

2. *develop a Digital Industry Growth Strategy to prioritise capacity and capability areas, identify ways to fill gaps, and to map a path to grow the industry*

    - *Outcome*: DTBAR conducted extensive stakeholder engagement in 2024 and delivered this Interim Report in collaboration with DCDD in 2025, which will inform inclusion of digital industry strategic actions within the NT Government's new digital strategy 2025.

[18] NT Government, Review of Information Communication Technology (ICT) Contracting, 2020.
[19] NT Government, Review of Information Communication Technology (ICT) Contracting, 2020.
[20] Douglass-Savage, V., Rozo, A. and O'Brien, J., 2022 Digital Industry Capability Report, GWI

Stakeholder feedback – NT Government procurement

The predominant stakeholder feedback indicated that the current service-based "body shopping" procurement model hinders the growth of the local digital industry. Specifically, it:

- limits solution-driven innovation, restricting the development of services and products tailored to government needs, which could be commercialised and exported nationally and globally,
- strains private sector talent pools and constrains the development of a skilled, diverse local workforce by reducing opportunities for businesses to upskill and advance staff into mid- and senior-level roles.

However, some stakeholders cited that the model is justified – a necessary approach to manage procurement risks (although others noted that the model can still result in significant cost overruns).

Stakeholders expressed that many local businesses, particularly SMEs, face challenges in accessing government contracts. Factors such as the government's approach to risk, limited transition timeframes, high tendering costs, and complex procurement requirements create barriers to participation.

Addressing these challenges—by creating more SME-friendly processes—could help build more sustainable business models, support local capability development, and encourage broader industry participation. Suggested improvements included designing procurement models that break down large contracts into smaller, solution-focused opportunities and adopting more flexible, outcome-driven approaches that better support SME participation and workforce development.

Stakeholders recognised that consortiums can be a pathway for smaller businesses to participate in larger contracts, but noted they are often resource-intensive and may not always deliver equitable outcomes for all partners. In some cases, smaller local businesses gain limited experience or visibility, with the lead organisation receiving most of the credit and opportunity. A few stakeholders raised concerns about partnerships that appear to meet local procurement requirements but do not provide meaningful engagement or work for local firms.

Stakeholders advocated for increasing transition periods between digital service contracts, which would lead to more equitable and inclusive opportunities for SMEs.

Stakeholders suggested that government procurement processes could better balance efficiency and risk management with a stronger focus on outcomes and industry development. They noted that tenders are often structured around predefined solutions, which may limit opportunities to harness industry expertise and innovative approaches.

Several stakeholders reported difficulties obtaining meaningful feedback on unsuccessful applications, limiting their ability to improve future submissions. Suggested improvements include greater transparency in assessment criteria and outcomes, reducing administrative barriers for SMEs, and fostering open engagement with industry through EOIs and market feedback.

Some quarters of the local industry raised concerns that the application of the Buy Local Policy insufficiently considers the realities of the Territory's labour force, and penalises local companies that, due to labour shortages, have no choice but to employ interstate workers to address skills gaps. Solutions include providing clarity in the tender process regarding what qualifies as 'local', considering local content in the supply chain, and verifying claims to ensure local benefits are realised.

Several stakeholders observed that new businesses (or businesses wanting to expand) may face challenges in joining the NT Government's ICT professional services panel. They suggested it may be timely to review the current panel model to assess how effectively it supports industry growth and inclusion. Exploring alternative approaches—such as a multi-use list—could provide greater flexibility and enable more consistent opportunities for new and emerging providers to participate in government work.

Suggested improvements included:

- increasing transition periods between digital service contracts
- shifting to solution-based procurement
- increasing government risk tolerance to foster industry growth
- engaging industry experts during the planning phase
- encouraging innovation by allowing alternative solutions
- removing prescriptive tender specifications
- enhance industry engagement by increased promotion of Digital Industry Updates and the Digital Government Roadmap, and via Small Business Champions to enhance SME involvement.

Key markets

Apart from the public service, the NT's economy is driven by the established and expanding key sectors of defence, agriculture, mining, oil and gas, and tourism—all of which depend on secure digital services and innovative solutions. However, many large organisations, such as Defence and mining companies, tend to use digital suppliers outside of the NT which creates an impediment to local growth. Nevertheless, there are opportunities to service local contractors to these large companies, along with smaller market segments in local government, education, and the not-for-profit sector. The market then quickly narrows to small and medium-sized enterprises, which generally have less complex digital needs.

Defence: The NT, as a key Defence command hub in Northern Australia, offers a strategic opportunity for the local digital industry to enter the Australian Defence Force supply chain. However, this is challenged by the NT's smaller digital sector, competition from multinational ICT firms, strict compliance requirements—particularly in cybersecurity—and shortages in specialised digital skills. Despite these barriers, there is substantial potential for the NT industry to upskill and deliver digital solutions both directly to Defence and to local Defence suppliers.

Oil and gas, mining, and renewable energy: The NT's resources sector is rapidly adopting digital technologies to boost efficiency, sustainability, and safety, with innovations such as AI-driven exploration, automated vehicles, and drone inspections improving operations across mining, oil, gas, and renewables. Projects like SunCable's Australia-Asia PowerLink project demonstrate the role of AI in optimising energy systems, while INPEX's partnership with SKYMAX demonstrate the potential of drone-based solutions. However, procurement often favours established national or global providers, posing challenges for local businesses unless they offer niche expertise, strategic partnerships, or proven capabilities. Targeted workforce development in areas such as data analytics, robotics, and IoT will be key to supporting this digital transition.

Agriculture: The NT's agriculture sector is embracing digital technologies to boost productivity, sustainability, and biosecurity, with innovations like drone-based monitoring and robotic harvesting addressing remote challenges and labour shortages. Advances, such as Agricultural Robotics' AI-powered mango harvester, are supported by targeted government and private investment, including the Australian Government Entrepreneur's Program and the NT Government and Paspalis Innovation Investment Fund's Croc Pitch events. Ongoing R&D investment is essential to drive ag-tech growth and the sector's digital transformation.

Tourism: The NT's tourism sector increasingly depends on digital technologies to attract visitors, enhance experiences, and streamline operations, with data-driven marketing and emerging tools like virtual reality and AI improving reach and efficiency. Despite strong growth, untapped potential remains across regions, particularly in Aboriginal tourism, which accounted for 18% of NT tourism consumption ($383 million in 2021–22). Realising this potential requires improved telecommunications infrastructure to support tourism businesses and visitor services in remote areas.

Opportunities and government support

The digital industry is often referred to as the golden thread that runs through and enables all other industries. Emerging technologies strengthen the thread and provide opportunities for the digital industry to partner with organisations to innovate, diversify and create entirely new products and services. Emerging industries such as drones, advanced manufacturing and renewable energy are closely aligned with and reliant on digital advancements. As these sectors grow and new investments in digital and data infrastructure are realised, the Territory's digital industry can capitalise on these opportunities.

Developing advanced technological solutions to address the unique challenges faced by Territorians offers significant opportunities for digital businesses to grow, innovate, and diversify. Challenges include a low population base, harsh climatic conditions, immature markets, access to talent and skills, distance from interstate markets, limited connectivity in regional and remote areas, and remoteness itself. These present the digital industry with an opportunity to provide innovative, tech-based solutions that can be effectively implemented locally and scaled for national and global markets. Additionally, digital businesses who diversify their business outside of NT Government contracts will be best placed for future growth[21].

Despite these opportunities, the market opportunity in the NT is limited by its population base. A key starting point for strengthening the NT's digital industry is expanding both the actual and perceived size of the addressable market. Doing so would encourage existing providers to scale their operations and help attract new entrants into the sector. Increasing the number of digital opportunities physically located in the NT, such as attracting regional head offices or digital-intensive enterprises, would expand the actual market. At the same time, supporting NT-based businesses to grow and diversify outside the Territory would enhance their perception of the opportunities available, effectively enlarging the perceived market[22].

The NT Government aims to shape a competitive environment that activates industry and business, attracts investment and drives growth to sustain a vibrant Territory economy and lifestyle. A key focus is to foster an environment where business can thrive by championing advanced technologies, manufacturing and digital services to enhance business operations and innovation. NT Government support includes:

- a range of funding and business support programs and initiatives to help develop, collaborate, and commercialise new ideas[23]. These efforts aim to strengthen the local innovation ecosystem, encourage partnerships at the local, national, and international levels, and align with key government priorities.
- promotion of private investment opportunities in the NT to national and international markets, including facilitating digital, data, technology and telecommunication companies to start-up, relocate or expand their operations to Darwin. This includes supporting private investment in subsea cables from Darwin to key locations in Indonesia, Singapore, the Philippines and the United States, providing the best latency to Singapore from any other Australian capital city. Additionally, support is focused

[21] Douglass-Savage, V., Rozo, A. and O'Brien, J., 2022 Digital Industry Capability Report, GWI
[22] Douglass-Savage, V., Rozo, A. and O'Brien, J., 2022 Digital Industry Capability Report, GWI
[23] NT Government, Innovation Territory

on the network of terrestrial cables linking Darwin to the rest of Australia and new data centre operations such as the NEXTDC D1 data centre in Darwin CBD[24].

- the Territory Growth Initiative (TGI) offers financing for major business expansion in the Territory through the provision of a range of financial support including infrastructure loans, business concessional loans, equity co-investments and priority sector collaboration grants[25]. The TGI is industry agnostic, and digital companies are eligible to apply.
- support for local businesses to start and grow their enterprises; provide advice and support to businesses and organisations in the regions; and identify projects and ideas that support regional development. Whilst these are not dedicated resources for the digital industry, they can include tailored one-on-one business support where digital enhancement and efficiencies are identified, or broader industry support where information and resources are shared. Examples include the Business Growth Program[26] and the 2024 Ready, Steady, Scale Symposium.
- support for businesses to attend trade missions and events internationally. With digital as a major focus sector for South-East Asia, numerous Territory based digital businesses have been supported in recent years to develop their export opportunities. A Global Trade Scheme is also open to digital businesses[27].

Stakeholder feedback – key markets, opportunities and government support
Stakeholders highlighted several unique strengths of the NT digital industry, including its strategic proximity and similarity to Southeast Asia, its diverse climate—spanning tropical and arid conditions—which offers valuable environments for testing and innovation, and the availability of land to support large-scale research and development initiatives.
Several stakeholders noted that the relatively small size of NT Government departments presents a strategic advantage for the digital industry. It enables more efficient data management, such as the centralisation of medical records, which can facilitate faster implementation of digital solutions, support integrated service delivery, and enhance the potential for innovation in areas like data analytics and artificial intelligence. This streamlined environment positions the NT as an agile testing ground for scalable digital initiatives.
Stakeholders identified significant potential for the NT to lead in emerging technology sectors such as agtech, healthtech, and edtech. These areas offer strong alignment with the Territory's unique environmental, demographic, and geographic challenges. By leveraging technology to develop tailored solutions, the NT can not only improve local outcomes but also position itself to export innovative products and services to interstate and international markets, enhancing both economic diversification and digital industry growth.

[24] NT Government, Investment Territory – Digital infrastructure
[25] NT Government, Investment Territory – Local Jobs Fund
[26] NT Government, Business Growth Program
[27] NT Government, Global Trade Scheme

Most stakeholders recognised that low latency between Darwin and the Indo-Pacific, particularly in comparison to other Australian states and territories, provides opportunity for sub-industries such as e-sports, online gambling and fintech.

Stakeholders noted that the NT digital industry faces several systemic challenges that limit its growth and competitiveness. These include limited promotion and visibility of local capabilities, low levels of business maturity and scalability, workforce shortages, and difficulty competing with larger, more established interstate providers.

They recognised that addressing these barriers is essential to building industry confidence, attracting investment, and positioning NT businesses to take on more complex and higher-value opportunities.

Stakeholders proposed a range of solutions to build the industry's capability and capacity:

- increase government support for SMEs, including improved access to procurement and digital-focused development programs
- advocate for a targeted national innovation visa to attract digital talent and entrepreneurs to regional areas of Australia, including the NT
- expand export opportunities to help local businesses scale and access new markets
- maintain a balance between multinational and local businesses, ensuring local capability
- foster a solution-based, innovation-driven digital ecosystem
- invest in research and development to support innovation and commercialisation
- align digital solutions with key NT industries and community needs, ensuring relevance, social benefit, and local impact.

Cybersecurity and data privacy

The Northern Territory's digital sector is progressively strengthening its capacity to deliver cybersecurity services, supported by government-led initiatives, education and training programs, and collaboration across industry stakeholders.

Despite these support mechanisms, digital businesses face ongoing challenges in maintaining and advancing their cybersecurity capabilities in response to the increasing complexity and frequency of cyber threats. Furthermore, the regulatory landscape is evolving rapidly, with governments introducing more stringent compliance requirements and industries adopting higher standards of best practice. To remain competitive both nationally and internationally, digital businesses must commit to continuous upskilling and capacity-building to deliver high-quality, compliant cybersecurity services.

Northern Territory Government initiatives: The NT has a series of initiatives aimed at bolstering cybersecurity, both within the Territory's digital industry and for the NT business community more broadly, including the Darwin Joint Cyber Security Centre (JCSC) Outreach Service. The Outreach Service is free for businesses and the ICT sector to access cyber threat information and seek advice from experts, and ICT enterprises can collaborate to share information across the sector and access workshops and resilience building activities[28]. The NT Government's Be Cyber Smart website also provides information and tips about how businesses can recognise cyber threats and implement practices to mitigate risk.

[28] Northern Territory Government, Be Cyber Smart, Darwin JCSC Outreach Service and ACSC Partnership Program

Partnership with the Australian Government: The Outreach Service is a key component of the Australian Cyber Security Centre's (ACSC) Partnership Program which enables ICT companies, cyber security vendors, organisations and researchers, and government agencies with a cyber security role eligible to join as an ACSC Network Partner, and then access:

- threat intelligence, news and advice to enhance situational awareness
- collaboration opportunities
- resilience-building activities (e.g. exercises, discussions, workshops)
- the JCSC network[29].

Educational initiatives and programs: Charles Darwin University's (CDU) NT Academic Centre for Cyber Security and Innovation (ACCI) brings together over 25 research-active staff to advance innovative research in Cyber Security, Data Science, and AI. ACCI is building collaborations between industry, government and researchers to solve real-world problems and to meet emerging digital needs in Australia and globally, ensuring success in a thriving digital economy. ACCI's funding is derived from a mix of NT and Australian Government support and collaborative research initiatives, reflecting its role in advancing cyber security research and education in the NT.

The NT Government understands the importance of building a strong local workforce by providing opportunities to upskill in cyber security locally, and partners with the Australian Government and CDU to provide 2 VET courses in Cyber Security and Cyber Management, and several scholarship places for Higher Education students.

Events and conferences: The Australian Information Security Association (AISA) has an NT branch that works to advance the digital security and safety of Australia. As the peak body for cyber security professionals, AISA develops and supports the workforce that underpins the nation's cyber security. In 2023, AISA hosted a Cyber Security Conference in Darwin to enable collaboration between all business groups and all cyber and information security practitioners.

Stakeholder feedback – cyber security and data privacy
Stakeholders identified a key challenge in the limited opportunity for the digital industry to deliver cybersecurity services, as many NT businesses have low cybersecurity maturity and lack awareness of cyber threats, leading to minimal investment in appropriate systems and practices.
Stakeholders noted that while larger businesses in the NT typically demonstrate more mature cybersecurity practices, they often engage interstate providers to deliver these services. As a result, the opportunity for local digital businesses to service the cybersecurity needs of the Territory's larger organisations remains largely unrealised, further limiting the development of the local cybersecurity industry.
Some stakeholders highlighted the need for enhanced engagement between the NT Government and the digital sector to collaboratively address cybersecurity needs, strategic planning, and emerging threats.
One stakeholder reported that some remote communities have demonstrated stronger cyber security practices than some urban areas due to stringent federal government requirements for programs such as the Community Development Program (now the Remote Jobs and Economic Development Program) which have led to broader security benefits.

[29] Australian Government, Australian Signals Directorate, Partner Hub

Data privacy was highlighted by stakeholders as a major concern. To address these gaps, stakeholders recommended increased collaboration between the NT Government, CDU and digital businesses to develop AI-driven data solutions tailored to the Territory's unique challenges. Targeted data initiatives—such as analysing remote service delivery—could uncover valuable insights, while efforts to educate digital businesses on secure, privacy-conscious data sharing would promote responsible and ethical data use. Stakeholders did point out however, that local industry capabilities in this area need further development.

Stakeholders proposed the following key recommendations to enhance cyber security in the NT while supporting the growth of the cyber security industry:

- **Facilitate targeted education and training:** collaborations between governments, universities and business associations to deliver tailored risk mitigation and incident response workshops for SMEs emphasising the critical importance of cybersecurity systems and support.
- **Provide practical guidance:** develop and promote resources focused on practical responses to cyber incidents—such as scams and hacking attempts—highlighting how local digital service providers can assist businesses during and after such events. Stakeholders noted a preference for actionable, scenario-based training over general introductory sessions.
- **Support local industry capability:** establish dedicated funding programs to support the capacity building of digital SMEs, enabling them to implement and deliver services aligned with the Australian Cyber Security Centre's Essential Eight framework.
- **Conduct a Territory-wide cybersecurity review:** undertake a comprehensive review of cybersecurity vulnerabilities across the NT business sector, with strategic recommendations to mitigate identified risks. This would improve the cybersecurity posture of Territory businesses and create opportunities for growth within the local digital industry.

3.2. Investment attraction and strategic infrastructure

The NT offers a secure and stable location for digital, data, technology and telecommunication companies to start-up, relocate or expand their operations to service the local, Australian and Indo-Pacific markets.

World-class digital infrastructure is vital for establishing an environment for the digital industry to confidently grow, innovate, and thrive. Securing investment in this strategic infrastructure, as well as attracting proponents for its utilisation, is a key enabler of success. The NT Government is committed to partnering with the private industry to drive economic development for technology capabilities in the Territory.

Table 1 – Investment in digital infrastructure in the NT

Project	Location	Investment	Status	Target completion
VOCUS - Terrabit Territory	Darwin	~$18M ($7.9M NTG, $10M Vocus)	Complete	2021
Vocus Darwin-Jakarta-Singapore Cable (DJSC)	Darwin	$100M	Complete	2023
NEXTDC D1 Darwin Data Centre	Darwin	$80M	Complete	2024
Inligo Network's Asia Connect Cable-1 (ACC-1)	Darwin	$700M	Underway	2026
BW Digital Hawaiki Nui Cable	Darwin	US$300M	Underway	2027
Inligo Unite Cable system	Darwin to Adelaide	$225M	Underway	2027
Telstra InfraCo - Intercity Dark Fibre Network	Darwin to Adelaide	$1.6B	Underway	2027

Subsea and terrestrial cables

New subsea cables from Darwin will provide high speed network capacity to key locations including Indonesia, Singapore, the Philippines and United States. These connections will provide the best latency to Singapore from any other capital city, offering speeds 2.4 times faster than from Sydney and 1.2 times faster than from Perth.

New international digital connections linking Darwin to the commercial and population centres of South-East Asia and North America include:

- Vocus Darwin-Jakarta-Singapore Cable (DJSC) the first direct fibre link between Darwin and Singapore. Completed in 2023.
- Inligo Network's Asia Connect Cable-1 (ACC-1) linking Indonesia, Timor-Leste, the Philippines, Guam, Japan and the United States. Expected to be operational by 2027.
- Hawaiki Nui 1 will connect Australia, Indonesia and Singapore. It connects with the existing Hawaiki cable, providing connections to New Zealand, the south pacific and North America, as well providing direct links between Darwin and Sydney and Darwin to Singapore. The cable connection is expected to be operational by 2027.
- Australia Connect - Bosun subsea cable part of the Australia Connect subsea cable system, partnering with Google, Vocus, SODA and Next DC to connect the United States, Southeast Asia and Australia.

Inligo Networks have also commenced building a Cable Landing Station in the vicinity of these 4 new international subsea cables, in Darwin. The station is expected to be ready for service late in 2026.

The NT is connected to the rest of Australia via a network of terrestrial cables. Recently completed and planned upgrades to this trans-Australia connectivity include:

- Terabit Territory – upgrade of Vocus fibre backbone between Darwin, Adelaide and Brisbane to world-class 200 gigabit per second technology, completed in 2021.
- Inligo Unite Cable system connects Darwin to Adelaide, and through Melbourne and Canberra linking to Inligo's ACC-1 subsea cable.
- Telstra Intercity Fibre Network – new dual fibre connections between Darwin and Adelaide, and through other capital cities.

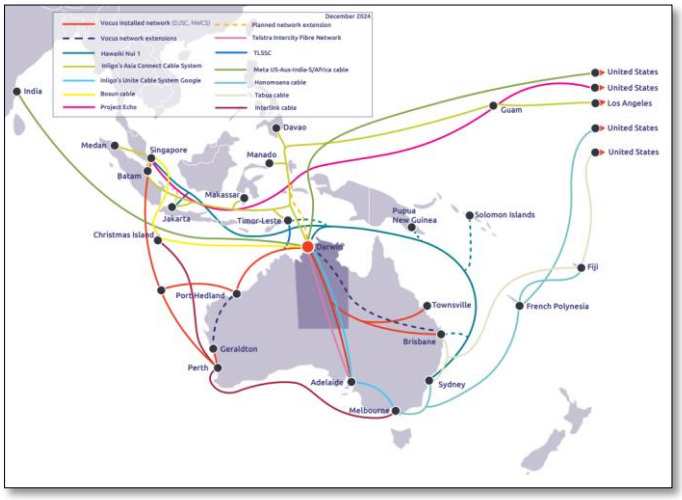

Image 1: Subsea and terrestrial cables into and out of the NT

Stakeholder feedback – Subsea and terrestrial cables
Many stakeholders highlighted that low-latency connectivity could support industries that rely on real-time data processing, such as online gambling, financial trading, and e-sports. Some stakeholders called for NT Government to facilitate partnerships or, at the very least, conversations between cable providers and the local digital industry to explore ways to leverage the increase in subsea and terrestrial cables.
Some stakeholders noted that existing telecommunication providers are failing to deliver adequate connectivity services to regional and remote areas. This shortfall has led some organisations to install and manage their own satellite internet service, such as Starlink, for customers who cannot rely on traditional providers. Stakeholders note that satellite internet services have proven beneficial for improving connectivity, providing an alternative where data cables are unavailable and redundancy where they exist. As a result, stakeholders highlight that system downtime has been significantly reduced.

However, despite its advantages, stakeholders pointed out that satellite internet services are weather-dependent and may not be viable for high-bandwidth applications. Furthermore, they believe that terrestrial cable infrastructure remains critical for redundancy and long-term digital resilience.
Regarding terrestrial cables, several stakeholders noted that local and regional councils continue to struggle with connectivity issues, which hampers their ability to implement digital strategies effectively. They would like to see telecommunications and digital connectivity prioritised at the same level as essential infrastructure such as power and water in regional and remote communities.

Data centres

NEXTDC launched its flagship D1 Darwin Data Centre in 2024. Located in the Darwin CBD, the data centre delivers up to 7 megawatts of IT load with 100% uptime. In partnership with Vocus and the NT Government, NEXTDC are committed to driving economic development for technology capabilities in the region.

The growing global demand for data storage capacity is fuelling additional interest in the NT by data centre developers, which offers:

- Abundant renewable energy resources
- Ample land for expansion
- High speed international connectivity
- Dedicated land – Wishart Estate Digital Hub
- Growing network of international and terrestrial connectivity.

In particular, the NT has an opportunity to be a green data centre hub by using renewable energy sourced from within the Territory. The rapid uptake of AI is changing the data centre landscape. Generative AI requires five times the processing power and storage of traditional data centres[30]. Green data centres will be sought after as essential in reducing the environmental impact of digitisation, helping meet sustainability goals, environmental regulations and community and customer expectations, along with reducing energy costs.

Stakeholder feedback – Data centres
Most stakeholders recognise that data centres offer significant advantages, specifically citing the opportunity for enhanced security, scalability, and reduced downtime.
Most stakeholders noted employment opportunities in data centre facility management but pointed out that the number of jobs is likely to be limited.
Some stakeholders believe data centres could support the development of emerging technologies and sub-industries, such as e-sports, gaming, fintech, CGI and post-production in the film industry.

[30] Green Square DC, The environmental challenges of AI-driven data centres, 2024

Several stakeholders highlighted that Australian data centres provide valuable opportunities for South-East Asian companies holding Australian contracts. And likewise, that Australia is a reliable partner for international companies to store their data when looking to enter Asian markets. These stakeholders pointed out that by storing data in Darwin, these companies can ensure data sovereignty, which is a highly attractive feature. Also, that subsea cables linking South-East Asia to Darwin enable low-latency connections, particularly when compared to routes through Melbourne and Sydney, which makes Darwin an appealing location for South-East Asian businesses.
Stakeholders recognised that Australia's stable and well-regulated market further enhances its attractiveness to Asian businesses. However, some did point out that, to fully capitalise on these opportunities, NT digital businesses need stronger relationships with sub-sea cable companies to maximize their potential benefits.
Some stakeholders were sceptical about the impact of data centres on the local digital industry. There were concerns that large multinational corporations and hyper-scalers may enter the market and compete with local SMEs.

3.3. Innovation and artificial intelligence

Innovation and AI are crucial for the growth of the digital industry because they drive efficiency, competitiveness, and new economic opportunities, allowing businesses to expand and adapt to market needs.

Artificial Intelligence

AI is the dominant global digital megatrend, transforming industries, government, and society by automating tasks, enhancing decision-making, and optimising services. Its rapid adoption is reshaping businesses and unlocking economic opportunities while raising ethical and regulatory challenges. Organisations are leveraging AI to help improve data-based predictions, optimise products and services, augment innovation, enhance productivity and efficiency and lower costs[31]. The NT digital industry can capitalise on AI's growth by fostering innovation, attracting investment, and developing AI-driven solutions for sectors unique to the Territory like land management, emergency response, and remote healthcare.

With its geographic and infrastructural advantages—including a vast landmass, renewable energy access, and strong digital connectivity—the NT has the potential to develop specialist applications for AI and other emerging technologies such as robotics, cloud computing, and cybersecurity. For instance, the use of AI and drones for crocodile detection and management, and the use of robotics for enhancements to mango harvesting. However, AI's expansion also presents risks, including privacy concerns, bias, job displacement, and cybersecurity threats, necessitating responsible AI governance.

[31] Gillespie, N, Lockey, S, Curtis, C, Pool, J & Akbari, A, Trust in Artificial Intelligence: a Global Study, The University of QLD and KPMG, 2023

AI's potential to create positive human impact will depend on a responsible, human-centered approach that focuses on creating value for all[32]. Governments worldwide are introducing AI regulations to mitigate risks while maintaining innovation.

National framework for the assurance of artificial intelligence in government: The Australian Government has introduced a national framework for the assurance of artificial intelligence in government[33], based on Australia's AI Ethics Principals[34]. The framework was agreed to by all states and territories, providing a national approach that aligns with Australian, state and territory government frameworks.

NT Government AI Assurance Framework: The NT Government has introduced an AI Assurance Framework and accompanying Ethics Principles to ensure that AI used by the NT Government meets ethical and assurance standards and is clearly focused on customer needs, while carefully managing potential risks[35].

Guardrails for AI systems in high-risk settings: The Australian government is developing a regulatory framework to ensure the safe and responsible use of AI across industries, particularly in high-risk settings. In September 2024, 10 mandatory guardrails for AI systems deployed in high-risk settings were proposed. These guardrails are designed to address risks and harms from AI, build public trust and provide businesses with greater regulatory certainty[36]. The government continues to engage with stakeholders through consultations to refine these regulations.

Voluntary AI Safety Standard: Complementing the mandatory guardrails, the Australian Government has introduced Voluntary AI Safety Standards[37]. These standards offer practical guidance to all Australian organisations on how to safely and responsibly use and innovate with AI. While compliance is not compulsory, adherence is encouraged to promote responsible AI development.

Balancing regulation and innovation remain a challenge, as some advocate for stricter controls while others warn against overregulation stifling progress. Despite these challenges, AI offers immense potential to revolutionise healthcare, boost productivity, drive scientific advancements, and enhance sustainability. An example is the collaboration between Microsoft, Kakadu National Park rangers, and CSIRO, where AI-powered drone technology assists Indigenous rangers in environmental conservation. This partnership demonstrates AI's role in solving complex challenges and highlights the NT's opportunity to participate in AI-driven innovation.

Stakeholder feedback – Artificial Intelligence
Most stakeholders highlighted AI as the globe's most significant technological megatrend but were concerned that Australia—particularly the NT—has been hesitant in its adoption, initially focusing on perceived risks, rather than opportunities. Several examples were provided around under-utilised opportunities to apply AI in remote and regional areas to address challenges such as food security, logistics, and agriculture.
It was noted by numerous stakeholders that many NT digital businesses lack the knowledge and training to incorporate AI into their operations and lack strategies to monetise AI. They also noted that many digital businesses don't have the capability to deliver value to customers using AI. As one stakeholder stated, "the real trick is learning how to apply AI and then bring value to the customer. We're just not there yet."

[32] EY Global, Artificial Intelligence regulation, global trends, 2024
[33] Australian Government, National framework for the assurance of artificial intelligence in government, 2024
[34] Australian Government, Australia's AI Ethics Principles
[35] NT Government, Artificial Intelligence Assurance Framework, 2024
[36] Australian Government, Introducing mandatory guardrails for AI in high risk settings, 2024
[37] Australian Government, Voluntary AI Safety Standards, 2024

Stakeholders noted that emphasis should be placed on AI applications tailored to the NT's unique conditions, such as remote healthcare, tropical and arid climates, and geographic distance, while also advocating for increased AI integration within NT Government departments.

Stakeholders noted that the NT has the potential to export AI-powered solutions globally, such as using AI and drones for crocodile detection to reduce human interaction, which could then be deployed in Southeast Asian jurisdictions like Malaysia or the Philippines.

Stakeholders recommended that a structured and focused approach to AI adoption by industry is necessary. Suggestions included:

- identifying local challenges that could be addressed with AI
- securing funding for research and innovation
- developing the skills needed to implement AI-driven solutions.

Stakeholders suggested that to build local expertise, funding and promotion of AI-focused courses at CDU and other registered training organisations should be prioritised.

A technology and innovation ecosystem

A technology and innovation ecosystem is essential to the growth and success of the digital industry. It fosters collaboration between startups, established businesses, research institutions, and government entities, driving the development of new technologies and solutions. A thriving ecosystem promotes knowledge sharing, accelerates the adoption of emerging technologies, and supports the commercialisation of innovative ideas.

By attracting investment, nurturing talent, and creating an environment conducive to experimentation, it helps businesses scale, adapt to market changes, and stay competitive. Furthermore, a strong ecosystem encourages the integration of digital solutions across industries, enabling economic growth, improving productivity, and addressing complex challenges in sectors like healthcare, education, and sustainability.

The NT Government develops and supports the NT innovation ecosystem via a series of programs and projects to empower Territorians to innovate and commercialise, to collaborate locally, nationally and internationally, and to deliver innovation to support priority NT Government objectives. Programs and projects are often centred on, or directly support, the start-up, growth and commercialisation of digital businesses and digital entrepreneurs. Examples of programs include:

- Territory Innovation Challenges Program[38]
- Business Innovation Program[39]
- Business Acceleration Program[40]
- Grant funding for the NT school E-Sports competition delivered by The Array[41]

[38] NT Government, Territory Innovation Challenges Program
[39] NT Government, Business Innovation Program
[40]NT Government, Business Acceleration Program
[41] NT Government, Grant funding for the NT school E-Sports

- Support for industry initiatives (e.g. Digital Excellence Awards, Big Day In, GovHack).

The Territory's growing innovation ecosystem include associations, educational institutions, businesses and individuals, such as:

Darwin Innovation Hub

Darwin Innovation Hub (DIH) was established in 2017 and is owned and operated by Paspalis. As a centre of innovation in the NT, it was the first recipient of the Australian's Government's Incubator Support Initiative. DIH has been a successful launching pad for global deep-tech founders seeking to test-bed their innovation in industries found in the NT, and locally runs a Start NT program which provides commercialisation pathways for companies looking to scale and become investment-ready[42]. They also provide supported co-working spaces and host events and conferences.

Charles Darwin University

Charles Darwin University (CDU) is the Territory's largest training provider, offering higher education, TAFE, short courses and micro-credentials. It is a research-intensive university with a portfolio that aims to have real-world impact, within and beyond the NT.

- CDU is home to an advanced nanofiber manufacturing facility based on Novel Electrospinning Technology. This is a state-of-the-art nanofiber fabrication facility that joins the league of just a few global universities that lead this research. The facility aims to develop material and technologies to support the decarbonisation plans for energy-intensive future demands of industries in the NT, Australia and the world.
- The Advanced Manufacturing Alliance is a joint initiative between CDU and SPEE3D to use world-first 3D metal printing technology. Through collaboration, the Alliance engages with industry partners, trades and academics to develop real-world applications, create industry procedures and standards and drive material development.
- CDU have opened a new STEM exploration space, the Radicle Centre, in its newest Darwin city campus. The Centre aims to be a beacon of excellence in STEM engagement and training pathways, capturing the NT's brightest minds, reaching First Nations peoples, creating opportunities for young Territorians and celebrating science and technology engagement of NT-based industry, government and outreach practitioners.

The Array

The Array supports tech education, interactive entertainment entrepreneurship, video games and esports, delivering focussed upskilling and support for the community with the aim of empowering Territorians to reach a spot on the global stage. They are dedicated to guiding tech-driven startups and emerging entrepreneurs through the critical stages of growth and market readiness, providing mentorship and collaboration opportunities to help entrepreneurs and start-ups sharpen their ideas, build solid business models, and navigate the path to market.

The Array also offer a co-working space which aims to be a hub for like-minded creators and entrepreneurs, who share a deep understanding of tech, creativity, education, app and video game development, investment strategy and start-up culture.

Industry innovators

[42] Darwin Innovation Hub, 2025

Many businesses are leading the way in ingenuity, competitiveness, profitability and sustainability. Below are just a few examples:

- **Kraken Coding,** founded in Darwin, grows and maintains the software 'Clinical Branches', a decision support sharing hub which replaces text-based procedures and ward lists, reducing risk by accessing the most structured medical information quickly. Kraken Coding impressed the expert panel members at the Croc Pitch 2022 event with their scalable innovation and was awarded $500,000 in investment from Paspalis Innovation Investment Fund.
- **Go Locum.,** founded in the Territory in 2022, received funding from the NT Government's Business Innovation Program in 2024 and went on to secure $350,000 in seed funding from Paspalis Innovation Investment Fund later the same year. Go Locum is a medical staffing platform designed to connect doctors with temporary roles in regional and remote areas. It has quickly built a network of over 2,500 health professionals through social media and uses AI to automate credentialing and match healthcare workers to roles in under-served regions.
- **Raindrop,** a Darwin-based tech startup has developed an AI-powered platform that translates complex insurance policies into easy-to-understand language. The project is supported by NT Government's innovation program, which provides grant funding and advice to help businesses commercialise their innovation.
- **Venus Health Co,** founded in Alice Springs, received funding from the NT Government's Business Innovation Program in 2021 and has successfully commercialised a new telehealth 'Venus Pregnancy & Birth' app that creates a digital solution for women during their reproductive care journey.

Innovating digital solutions for Aboriginal economic development and to overcome disparities in health and education also presents a unique opportunity for the digital industry. For example:

- **Carbon abatement and nature positive innovations**: tech-based solutions that support environmental sustainability and create Aboriginal jobs on Country, such as carbon abatement technology that supports the growth and development of the Territory's carbon market industry [43] and drone-based solutions using AI and GPS for land management innovations.
- **Remote education:** tech-based solutions to overcome the significant digital divide between students and teachers who have access to necessary technology and those who do not, particularly regional and remote Territory communities[44]. Digital innovations focused on affordable connectivity, teacher training, technical support, and culturally appropriate e-learning are crucial to overcome educational inequality.
- **Regional and remote health**: med-tech, health-tech and medical research and innovation are all growing sub-sectors of the health industry. Cutting edge technologies benefit thousands of Australians each year and the digital industry in the Territory has the capability to partner with medical professionals, research organisations and health-based businesses to foster innovation and support the growth of the health sector.

Stakeholder feedback – a technology and innovation ecosystem
Stakeholders noted that businesses in the Northern Territory face significant challenges in securing funding to move innovations beyond the conceptual stage. While start-ups and early-stage ventures

[43] Northern Territory Government, Climate Change Response: Towards 2050, 2020
[44] Australian Government, House of Representatives, Standing Committee on Employment, Education and Training, Education in remote and complex environments, 2020

benefit from several different support and funding programs, a notable funding gap exists for established SMEs seeking to scale their innovations.

Stakeholders also noted that large-scale investors, including multinational corporations such as Microsoft, tend to focus on supporting major projects, making it difficult for smaller businesses to achieve the scale required to attract such investment.

One proposed solution is the establishment of a grant program specifically designed for established SMEs, offering an initial grant of $20,000, with the potential to increase to $50,000–$100,000 contingent on the achievement of defined milestones.

Many stakeholders were strong in advocating for a culture that encourages experimentation, innovation, and risk-taking, advising that it would further enable the development of new technology and digital solutions. A number of stakeholders advocated for a supportive environment for failure in R&D to enable continuous improvement, de-risk long-term innovation, and to ultimately lead to stronger, more resilient outcomes.

Stakeholders broadly agreed that fostering a robust innovation ecosystem is critical to creating employment opportunities beyond traditional ICT roles. Supporting start-ups and entrepreneurial activity was seen as a key strategy for retaining CDU graduates by offering them clear and viable career pathways outside of the ICT service sector.

Some stakeholders highlighted the need for targeted support for digital start-ups in areas such as business operations, soft skills development, access to funding, marketing and business growth.

Some stakeholders emphasised the importance of equitable support for innovation, cautioning against the concentration of resources within a single entity.

Additionally, the establishment of a not-for-profit innovation cluster—bringing together key players across the innovation and technology landscape such as CDU, The Array, Drones Network and Darwin Innovation Hub —was proposed as a means to address needs and strengthen coordination across the ecosystem.

Other recommended initiatives to stimulate innovation included digital meetups, competitions, hackathons, and industry-led challenges.

Emerging sub-industries

Video games and esports

The video games industry falls within a broader creator economy that is transitioning and harnessing the explosion in technologies and digital platforms[45]. In 2024, the revenue from the worldwide gaming market was estimated at AUD$723 billion[46] and by 2027 the number of video game users is expected to reach 1.47 billion[47].

[45] Australian Financial Review, Culture Disrupted: Growth in Australia's digital creative industries, 2023
[46] Statista Market Insights, Video game industry – Statistics & Facts, 2024
[47] Statista Market Insights, Number of digital gamers worldwide 2017-2027, 2024

The Australian video game development industry generated $339.1 million dollars for the Australian economy in the 2023-24 financial year, with 93% of this revenue generated from exports. Since 2016, revenue from Australian games development has increased by 200% and according to the Interactive Games and Entertainment Association, 53% of Australian games studios are predicting continued income growth over the next financial year[48].

Global consumers are hungry for Australian content and there is a growing number of NT based developers creating innovative and culturally relevant games. In fact, the NT has a thriving independent games industry with emerging studios, collaborations and solo developers working across desktop, console and mobile, and supported by local creatives working in animation, design and soundtrack production. The video games industry has the potential to drive jobs, providing options for IT graduates, gamers and digital entrepreneurs outside of the traditional ICT service sector.

E-sports has also experienced unprecedented growth around the world, transforming video game competitions into globally recognised sports where professional players or teams compete in various multiplayer video games. The e-sports market worldwide is projected to reach a revenue of $7.2 billion in 2025 and almost $221 million within Australia[49]. The rise of e-sports, and particularly professional e-sports teams in Australia, has seen a surge in local talent and increased international recognition.

The NT's proximity to the thriving South-East Asian gaming and e-sports market, combined with its comparative low latency, provides a competitive edge over Australia's southern states—particularly for hosting or participating in Asian competitions. This strategic advantage positions the Territory as a prime location for future investment in the video game and e-sports industry.

Acknowledging the gaming sector's significant potential, Screen Territory launched Games Development funding in 2023, recognising the opportunity which exists in building on existing games development and information technology skillsets within the NT; through facilitating the generation of intellectual property in the form of digital games here in the NT and in fostering digital economy skillsets via the support of game development activities.

One Territory success story is Salty Games with their game *Pasture: Livestock Simulator*. The game has garnered interest from large scale international publishing platforms as well as from key stakeholders in the NT livestock industry who have identified its potential training uses in upskilling pastoral station staff. Salty Games secured $1.5 million in seed-stage funding, led by the Paspalis Co-Investment Fund – a partnership between Paspalis and the NT Local Jobs Fund. Salty Games were further supported by Screen Territory with both Games Development funding to continue developing their game product, in addition to travel funding to attend games markets in the United States to facilitate export sales[50].

Drones

The Australian drone industry has experienced significant growth over recent years, and it is estimated that Australia could reap an economic dividend of $15 billion by 2040 from the increased use of drones and expansion of the drone industry[51]. The NT drone ecosystem is growing strongly as drone technology becomes more advanced, accessible, and affordable. As an emerging location for drone research development and testing, the Territory has recently attracted investment from several interstate and international drone companies.

[48] NT Government, NT Screen Industry Achievements, 2025
[49] Statista Market Insights, Esports – Worldwide, 2024
[50] NT Government, NT Screen Industry Achievements, 2025
[51] Deloitte Access Economics, Economic Benefit Analysis of Drones to Australia Final Report, 2020

Traditional industries like agriculture, oil and gas, mining, defence, and tourism stand to benefit significantly from drone adoption, leading to increased efficiency, cost savings, and safety improvements. Drones are already revolutionising agriculture by enabling farmers to monitor crops, manage livestock, and assess soil and water conditions efficiently. In defence, law enforcement, and disaster management, drones offer enhanced capabilities for surveillance, reconnaissance, and search-and-rescue missions, while reducing risks to personnel. The mining and oil and gas industries also leverage drones for mapping, surveying, inspections, and environmental monitoring, enhancing both operational planning and sustainability. In tourism, drones provide new opportunities for aerial photography, marketing, and visitor experiences.

Drone technology is one of the emerging digital technologies that will play a critical role in growing and diversifying the NT economy and solving problems of Territory and national importance. For example, CDU's North Australia Centre for Autonomous Systems (NACAS) is using remotely piloted aircrafts (RPA) and AI to enhance remote environmental monitoring in the NT. By using drones to capture imagery over vast landscapes and applying AI technology, the detection of invasive species, man-made objects and wildlife is being optimised. The Australian Government recently funded a project as part of the Ghost Nets Innovative Solutions Grants to use drones and AI software to identify and quantify the volume of marine debris within remote and difficult to access coastlines[52].

NACAS has also developed a new airspace corridor for drones that stretches from Katherine to 30 kilometres north of the town, above 250 square kilometres of tropical savannah and semi-arid country. The drone corridor is being created specifically for Beyond Visual Line of Sight (BVLOS) drones – a category of the technology that operates outside the direct visual range of the pilot. CDU researchers plan to use the airspace to build capacity in BLVOS operations as part of a trial program exploring the potential for drone technology to deliver life-saving medical supplies to remote First Nations communities in the West Arnhem region.

Screen industry

The NT's thriving screen industry has the potential to significantly boost the local digital sector by creating demand for a broad range of digital skills and services. Film and television productions require expertise in areas such as visual effects, animation, sound design, post-production, and digital editing—fields that align closely with the Territory's growing pool of creative and technically skilled workers. A strong film sector also encourages collaboration between local industry, education providers, and international partners, fostering innovation in emerging technologies such as virtual production, AI-assisted editing, and immersive media.

Between the period of 2018-19 to 2024-25, the NT Government's investment in screen has propelled the industry's rapid expansion. In that time, direct NT production spend in the NT has surged by 468%, fuelling new business growth and solidifying the Territory's position as a key player in the Australian and international screen landscape[53].

Recent productions, including *Territory* and *Deadloch Season 2*, by major streaming services Netflix and Prime Video have showcased the Territory's distinctive landscapes and creative talent. With strategic support aimed towards the digital sector, the film industry could become a key driver of growth for the NT's broader digital ecosystem, offering long-term opportunities for regional employment, training, and business sustainability.

[52] Charles Darwin University, Drones the latest weapon being used to combat the spike in ghost nets across NT coastline, 2023
[53] NT Government, NT Screen Industry Achievements, 2025

Digital healthcare

Digital health technologies play a growing role in improving healthcare access and outcomes, and addressing health disparities, particularly for remote and Indigenous communities across the NT. Key technologies include:

1. **Telehealth Services**: expanding virtual consultations and remote monitoring to reach isolated areas.
2. **Electronic Patient Records**: the Acacia Digital Health system is progressing and will deliver a single, secure, electronic health record across hospitals, primary health care centres and community health services.
3. **Digital Health Platforms**: a multitude of platforms are emerging, such as:
    a. **NT Health Pathways -** Northern Territory PHN and Rural Workforce Agency NT have locally developed this website to help clinical teams navigate complex variations in local referral pathways and manage their patients' health conditions
    b. **Digital Stay Strong Plan -** Menzies School of Health Research have launched on online resource which blends evidence-based treatment with First Nations world views. Accessed via the Stay Strong app or through their website, the interactive document prompts the user to fill out a four-step mental health care plan.
    c. **Lung Health for Kids** - Menzies have also developed an interactive app about asthma, to raise awareness among Aboriginal and Torres Strait Islander families and health practitioners.

The Drones for Health project, funded by the Australian and NT Governments, looks at using drone technologies for medical delivery in remote communities in northern Australia. NACAS has partnered with the NT Department of Health and the iMOVE Cooperative Research Centre to solve the logistical and regulatory barriers limiting RPA integration into the NT healthcare supply chain. Their goal is to supplement existing medical transport infrastructure across northern Australia with a low-cost fleet of on-demand drones.

The NT Health Virtual Care Strategy guides the continued expansion of virtual care in the NT, to support Territorians to receive the right care, at the right place, at the right time. Virtual care is a broad term that refers to digitally enabled healthcare delivery that supports NT Health to compliment, elevate and extend traditional healthcare delivery models to cater for and increase accessibility for all Territorians.

Stakeholder feedback: emerging sub-industries

Most stakeholders identified the e-sports and gaming sector as an emerging area of opportunity for the NT, citing the recent success of NT-based game developers and the advantage offered by Darwin's comparatively low-latency digital infrastructure.

It was acknowledged however, that e-sports participants, game developers, and other professionals in the sector often require additional support in business and commercial skills to effectively transform their technical expertise into sustainable enterprises. Targeted business development support was recommended to drive the growth of the sector and strengthen its integration with the broader digital economy.

Stakeholders also advocated for initiatives to support Territory-based video game developers and e-sports players, such as the establishment of a Darwin-based digital games and e-sports development centre. Such an initiative could provide a launch pad for Territorians to engage with one of the world's fastest growing

industries, while creating new, socially and economically meaningful pathways for young people across the NT.

In addition, at least one stakeholder recommended that the NT Government engage with subsea cable investors to explore direct access to infrastructure linking Darwin with South-East Asian e-sports competitions and markets.

Several stakeholders voiced strong support for establishing a film studio in Darwin, highlighting the NT's growing profile in the global screen industry. While recent successes have generated momentum, the lack of purpose-built infrastructure for production and post-production continues to limit the sector's potential and leads to missed economic opportunities.

A dedicated studio is seen as a critical enabler, offering shared facilities that could also support game developers, podcasters, e-sports organisers, and digital content creators—thereby opening employment pathways across a wide range of digital and technology-related fields.

Stakeholders suggested that the studio could serve as the foundation for a broader creative precinct and recommended that the NT Government develop a business case to explore its feasibility. Such a precinct could accommodate film and television production, visual effects, gaming, podcasting, e-sports events, advertising, and other forms of digital content creation, helping to build a diverse and resilient creative economy in the Territory.

3.4. Workforce capacity, skills and diversity

A skilled workforce equipped with up-to-date knowledge and expertise drives innovation, enhances productivity, and ensures that digital solutions are effectively developed and implemented. As technology rapidly evolves, continuous skill development is essential to meet the demands of emerging trends like AI, cybersecurity, and data analytics. Diversity within the workforce brings varied perspectives, fostering creativity and problem-solving, and helps create inclusive technologies that meet the needs of a broader range of users. By prioritising workforce capacity, skill-building, and diversity, the digital industry can build a resilient, adaptive, and forward-thinking workforce that drives sustainable growth and competitiveness.

Workforce challenges, opportunities and support

The NT is undergoing rapid digital development, with a growing demand for a skilled digital workforce to meet the evolving needs of local industries. The digital sector, which employs over 5,300 people, has seen significant expansion, with annual growth rates exceeding 7% between 2017 and 2022. However, more than half of the workforce employed in digital roles work outside traditional ICT sectors[54], reflecting the increasing importance of digital skills across diverse fields such as mining, healthcare, and public administration.

The NT faces several challenges in developing a sustainable digital workforce. A primary obstacle is the shortage of critical technology skills. By 2030, the region will need an additional 13,700 skilled professionals[55] to support the adoption of new technologies and to meet industry demands. Key roles such as cyber security analysts and software developers are currently difficult to fill, and businesses are

[54] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023
[55] FSO, Digital Workforce Plan, NT case study, 2024

experiencing delays in project completion and service delivery due to a lack of qualified candidates[56]. This shortage is compounded by high salary expectations, relocation costs, and limited access to specialised training programs within the NT. Furthermore, outdated skills are costing businesses $14 million annually, underscoring the urgency for upskilling and reskilling of the workforce[57].

The Territory's digital industry is adapting to critical technologies including digital twins, edge computing, advanced robotics, the IoT, and particularly the application of AI. The Australian Computer Society's (ACS) Digital Pulse 2023 report identifies that these critical technologies will impact 130,000 NT workers, who will need to reskill as new tech will affect 20% of their work time[58].

To address these issues, the NT Government is focused on several key initiatives. One approach is enhancing vocational education and training (VET) programs, aligning them with industry needs and emerging technologies. Another is to support technology and innovation training providers such as The Array (e.g., funding for the NT school E-Sports competition delivered by The Array).

Diversity and inclusion are critical to the sustainable growth of the digital industry in the NT. A diverse workforce brings fresh perspectives, drives innovation, and enables companies to meet the varied needs of their customers and communities. However, significant challenges remain in ensuring that women, Aboriginal Territorians, and people with disabilities have equal access to opportunities in the digital sector.

For women, there is an increased focus on promoting diversity within the technology sector, where only 31% of workers are women, compared to 49% in the broader professional services sector[59]. This gender disparity is reflected in educational pathways, with the NT reporting the second-lowest share of female IT university enrolments nationally, at 25%[60]. To address these challenges, targeted actions such as supporting women's networks and gender-inclusive education opportunities are essential. Encouraging female participation in STEM education and promoting leadership opportunities within the sector will be crucial in closing the gender gap and fostering a more inclusive industry.

For Aboriginal Territorians, the barriers to participating in the digital economy are complex and multifaceted. Infrastructure challenges in remote areas are compounded by the lack of culturally relevant digital education and training programs. The First Nations Digital Inclusion Advisory Group emphasises the importance of on Country solutions that align with local needs, ensuring that Aboriginal Territorians can participate meaningfully in the digital economy and access essential services online[61]. Initiatives such as digital literacy programs and the promotion of First Nations entrepreneurship offer a pathway to greater inclusion. Additionally, representation at decision-making levels within the digital sector is critical to fostering long-term inclusion and empowering Indigenous communities to shape their digital futures[62].

A major challenge is the geographic concentration of digital jobs. Nearly 80% of the NT's technology workforce is in Darwin, leaving other regions, particularly remote and Indigenous communities, under-resourced[63]. This imbalance creates challenges for equitable access to digital employment opportunities, contributing to economic disparities across the Territory. Remote areas also struggle with insufficient digital

[56] FSO, Digital Workforce Plan, NT case study, 2024
[57] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023
[58] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023
[59] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023
[60] FSO, Digital Workforce Plan, NT case study, 2024
[61] Australian Government, A roadmap for First Nations digital inclusion, 2024
[62] Australian Government, A roadmap for First Nations digital inclusion, 2024
[63] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023

infrastructure and connectivity, limiting residents' ability to access online education and participate in the digital economy[64].

NT Government is working to strengthen First Nations participation by supporting Indigenous entrepreneurship and improving digital literacy in remote areas. These efforts aim to bridge the digital divide and unlock the economic potential of Indigenous communities, contributing to sustainable growth across the Territory.

For people with disabilities, there are significant barriers to inclusion in the NT's digital workforce. Despite the increased focus on diversity, only 0.6% of technology workers across Australia identify as having a disability[65]. For many individuals, flexible work arrangements and adaptive technologies are essential enablers of employment. Promoting inclusive hiring practices and ensuring that vocational education and training programs are accessible to all are key to increasing participation among people with disabilities in the digital industry. Furthermore, employers in the technology sector can play a pivotal role by offering mentorship opportunities and creating a supportive work environment for people with disabilities.

Building a diverse and inclusive digital workforce in the NT is vital for addressing the region's skill shortages and achieving sustainable growth. Ensuring equal access to opportunities for women, Aboriginal Territorians, and people with disabilities will require coordinated efforts from government, industry, and educational institutions. Investments in infrastructure, education, and inclusive policies will not only help bridge existing gaps but also unlock the full potential of the NT's digital economy. By fostering diversity and inclusion, the NT can create a technology sector that reflects the richness of its communities and is equipped to meet the challenges of the future.

Fee-free places are available for VET courses in IT and Cyber Security for eligible participants, particularly those under-represented in the workforce which includes:

- First Nations Australians
- People out of work or receiving income support
- Young people (17-24)
- Unpaid carers
- Women facing economic insecurity
- Women undertaking study in non-traditional fields
- People with a disability
- Certain categories of visa holder.

For some courses, including Cyber Security, students from a regional area will be eligible for travel subsidies to attend intensives at CDU.

With digital investments projected to reach $2 billion by 2030[66], the Territory is well-placed to harness the benefits of digital transformation if it can overcome existing workforce challenges. Building a resilient and diverse digital workforce will require continued collaboration between government, industry, and educational institutions, as well as strategic investments in training, infrastructure, and inclusion initiatives. By fostering a diverse and skilled digital workforce, the NT can unlock new economic opportunities and ensure sustainable growth across all regions.

[64] FSO, Digital Workforce Plan, NT case study, 2024
[65] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023
[66] ACS, Australia's Digital Pulse, A new approach to building technology skills, NT Edition, 2023

Stakeholder feedback – workforce challenges, opportunities and support

Stakeholders confirmed that the availability of a skilled workforce as a significant barrier to scaling businesses and expanding the digital industry in the NT. They highlighted severe workforce shortages, advising that skilled IT professionals are scarce in the NT and that recruitment remains a major challenge. Skilled workers who develop expertise at mid-to-senior levels often leave the NT for more lucrative and engaging opportunities on the eastern seaboard, citing career advancement and lifestyle factors as key reasons for relocation.

Stakeholders emphasised the need for digital professionals to possess strong soft skills and industry-specific knowledge. They suggested that hiring employees with expertise in key sectors (e.g., healthcare) and training them in digital skills may be a more effective approach than hiring IT professionals without subject matter expertise.

The NT Government was identified as the largest competitor to the digital industry for skilled talent, offering higher salaries than many private-sector employers are willing, or have the capacity to match.

Local recruitment remains particularly difficult for experiences and skilled workers; however, most stakeholders described an oversupply of entry-level graduates exceeding the number of available positions in the job market.

Several stakeholders described the COVID-19 pandemic as having significantly disrupted the NT's digital workforce. Businesses were forced to downsize, and rebuilding to pre-pandemic capacity has been challenging. The post-pandemic period saw a surge in career changes, leading to a skills shortage. Additionally, the retirement of baby boomers has further exacerbated the workforce gap.

Skilled migration was considered by stakeholders as a viable solution to workforce shortages, with many stakeholders reporting significant success recruiting internationally.
Some concerns were raised regarding the compatibility of migrant qualifications with Australian standards.

Liveability was cited by most stakeholders as a key factor in workforce attraction and retention challenges. Stakeholders suggested that improved support is needed to encourage workers to stay in the NT, including accommodation incentives and broader community integration programs for migrants.

Other solutions suggested by stakeholders included to:

- foster an environment that attracts digital talent by promoting flexibility, travel opportunities, and engaging work.
- increase NT Government investment in graduate programs and industry-ready training initiatives, with a focus on regional and remote employment, youth, women, and Aboriginal Territorians.
- strengthen partnerships with organisations like YouthWorx NT to deliver job readiness programs, internships, and professional development opportunities.
- improve employment pathways for neurodiverse individuals and people with disabilities in the digital industry.

Some stakeholders also suggested that retaining Defence veterans presents an opportunity to strengthen the local digital workforce. Currently, many veterans leave the NT due to a lack of clear employment pathways, despite possessing valuable mid-level skills in project management, communications, and

related fields. Expanding training opportunities in digital skills through CDU and extending upskilling funding to include veterans and their families could encourage more to stay.

Stakeholder feedback – education and training

Most stakeholders acknowledged the important role of CDU in delivering IT and cybersecurity education, and its contribution to building digital skills and workforce pathways in the NT. While the value of these programs was widely recognised, some stakeholders expressed a desire for greater alignment between course content and current industry needs.

There were mixed views on graduate readiness, with several stakeholders noting opportunities to enhance the practical skillsets of students to better match workplace expectations. While CDU's emphasis on producing well-rounded graduates was appreciated, some stakeholders suggested that a stronger focus on specific technical skills and industry-relevant platforms could further improve outcomes.

Stakeholders expressed strong support for international students, describing them as motivated and valuable contributors to the local workforce. However, it was also noted that many face liveability challenges in Darwin, particularly in relation to housing, social connection, and access to support services.

Stakeholders identified a gap in the availability of in-person micro-credential courses in the NT. Employers emphasised the need for access to short, targeted training programs—particularly those offering vendor certifications and covering non-technical skills such as business analytics and project management for IT professionals. There was a strong preference for these programs to be delivered in-person within the NT to better meet local workforce development needs.

To address these challenges, stakeholders proposed:

- Strengthening partnerships between CDU, the NT Government and industry to promoting digital career pathways to NT school students.
- Incorporating more practical units into higher education programs.
- Enhancing wraparound support for international students.
- Subsidising in-person micro-credential training and vendor certification programs.

Stakeholders noted that students in regional and remote areas continue to face substantial barriers, including unreliable internet connectivity and limited infrastructure. In addition to technical challenges, low levels of digital literacy remain a key obstacle to economic participation in regional and remote communities. Many regions require improved access to digital devices, training opportunities, and tailored literacy programs.

To address these issues, stakeholders proposed expanding digital literacy initiatives in partnership with CDU's VET program, building on successful models such as the digital literacy training previously delivered in Central Australia.

Remote communities were identified as an underutilised workforce which, with appropriate training and structured career pathways, could make meaningful contributions to regional economies through both employment and entrepreneurship.