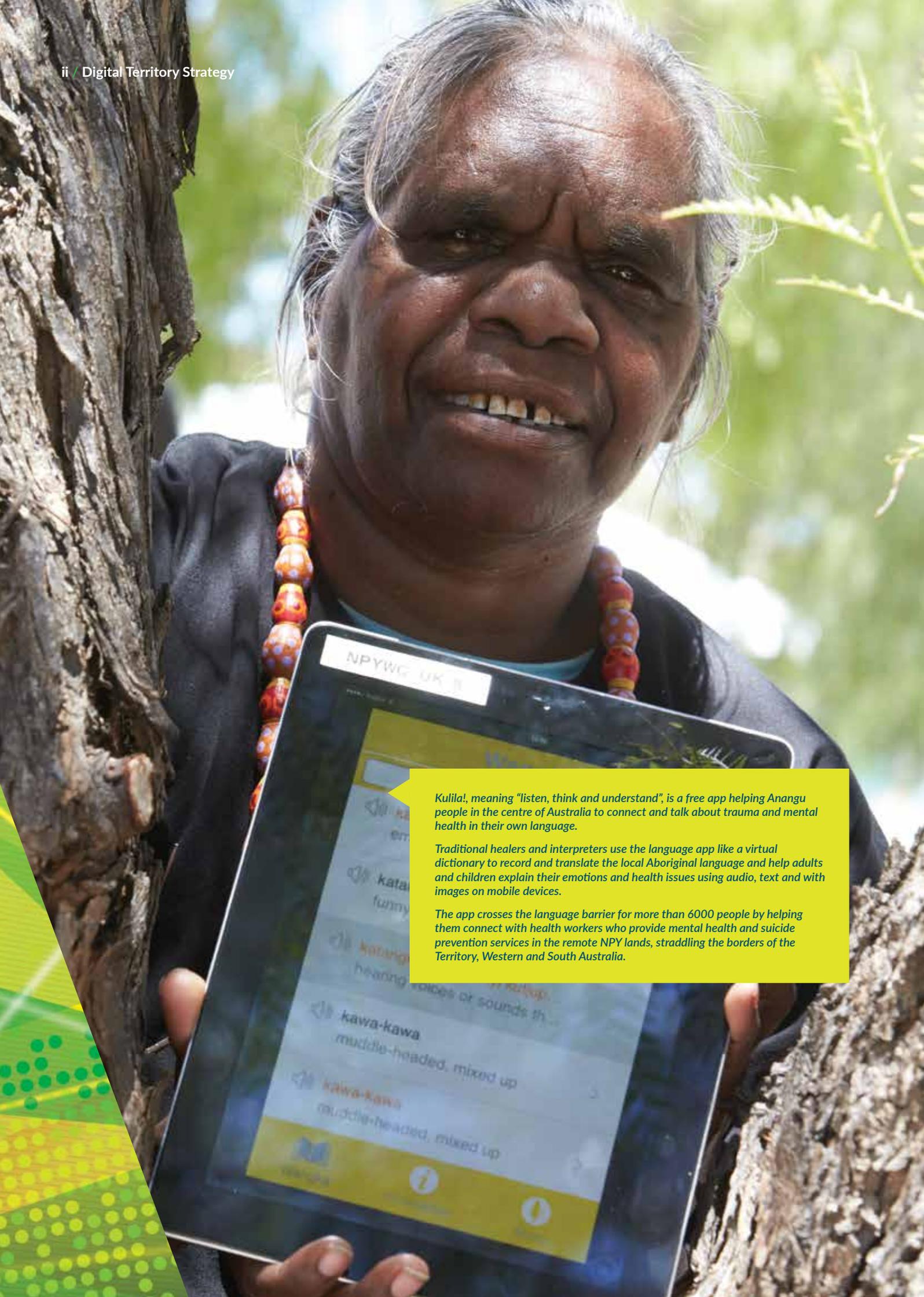


DIGITAL TERRITORY

STRATEGY



NPYWC UK

Kulila!, meaning "listen, think and understand", is a free app helping Anangu people in the centre of Australia to connect and talk about trauma and mental health in their own language.

Traditional healers and interpreters use the language app like a virtual dictionary to record and translate the local Aboriginal language and help adults and children explain their emotions and health issues using audio, text and with images on mobile devices.

The app crosses the language barrier for more than 6000 people by helping them connect with health workers who provide mental health and suicide prevention services in the remote NPY lands, straddling the borders of the Territory, Western and South Australia.





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Minister's foreword

The digital revolution is changing the way we live, connect, learn, work and do business.

The Northern Territory Government's Digital Territory Strategy establishes, for the first time, a framework for maximising the opportunities of the digital age across our business, industry, education, community and government sectors.

Harnessing the potential of digital technology will help us overcome the challenges of economic development and service delivery in a jurisdiction with a small population dispersed over a vast and often remote land mass.

It will allow us to build virtual bridges to even our most remote communities providing Territorians with better, more immediate and secure access to critical services regardless of where they live.

With Australia's digital economy set to contribute \$139 billion by 2020, this strategy will support and guide Territory businesses to thrive and grow in a digital world, fostering an environment of innovation and entrepreneurship.

It will provide guideposts for industries to find more efficient methods of production.

It will help to ensure young Territorians are able to access the same digital learning tools as young people elsewhere, so they are well-equipped to live and work in the digital age.

And it will help better connect and support disadvantaged and vulnerable Territorians.

This is a strategy for all Territorians and as such, requires a coordinated effort by government, the community, the ICT industry and the business sector. Working together, we will build digital capability and maturity so the Territory can remain competitive in an era of digital transformation.

The Digital Territory Strategy is supported by the Digital Territory Action Plan, which will be implemented by the Office of Digital Government over the coming years and updated annually to ensure it remains contemporary in a fast-changing digital landscape.

I thank the many organisations and individuals who contributed their experiences and ideas to inform this important strategy and who contribute every day to creating a digital Territory.

Hon Lauren Moss MLA

Minister for Corporate and Information Services

Introduction

People across all parts of the Northern Territory, in all age groups and circumstances, are being influenced by the changes that digital technology is bringing to our lives.

The Digital Territory Strategy maps out a plan that will enable Territorians to get the most out of the digital opportunities and challenges now and into the future.

Leveraging the opportunities of the digital age is critical to delivering better government services, connecting communities and remaining competitive in the global economy.

Through this first-ever Digital Territory Strategy, the government has a strong focus on:

- helping local business to grow, upskill and create more jobs
- supporting children to thrive, be safe and have strong foundations for a bright future
- connecting, creating and supporting safe, sustainable and vibrant communities
- strengthening the delivery and reliability of services in the bush
- improving accountability, inclusion and ingenuity.

The strategy positions Territorians to actively participate in digital transformation and global economic opportunities by embedding robust digital foundations and fostering a digital smart approach.

The 'can-do' attitude of Territorians along with our history of independence and innovation means we are well placed to make the most of digital advancement opportunities. Smart use of modern technology and tools will allow us to create new products and services that motivate, inspire and help us overcome our unique challenges. The NT digital industry has already delivered innovations that stand tall on a local and national level. Two prime examples are: EnviroSys, a leading environmental data management system and 2017 national export award winner developed by SRA Information Technology, and the award-winning mobile phone hotspot invented by the Centre for Appropriate Technology Ltd which extends mobile phone coverage in remote locations.

The local digital industry has a lead role to foster innovation and drive digital progress and maturity across the NT

economy. Government has a key supporting role to help encourage and facilitate this innovative spirit through programs, services, advice and appropriate policy settings.

The strategy sets new digital directions and action plans that collectively harness the skills and knowledge of each sector of the Territory economy, as well as the community more broadly.

Digital technology will provide the jobs for the future, enabling businesses to transform and open up new economic opportunities for the Territory. It is crucial for Territorians to establish strong digital foundations, to enrich our business and social interactions, and to pursue success through digital excellence.

The digital directions will be progressed through a series of cohesive and structured initiatives that are refreshed annually. Success requires government, business and the community to work together towards a shared vision for the Territory's digital future.

What will this mean to me?

- **Children and teenagers:** I can apply new digital technologies to help me learn and develop my skills for future jobs. I will have the knowledge and strategies I need to stay safe online.
- **Parents:** We will be able to access government services more efficiently and conveniently to manage our family needs. We will be in control.
- **Small business:** I can transform my business by embracing new digital opportunities and create jobs. I can take my place in a thriving economy. I will be able to innovate and grow.
- **Digital industry:** We will share our expertise as trusted digital advisors to grow our businesses, our industry and the local economy. Our digital innovations and skills will be recognised and valued.
- **Community:** We can expand our social interactions and better help each other by being more digitally connected.

Digital opportunities

Digital technology is enabling people across the world to be connected and involved. It is opening up markets, breaking down barriers and enabling cultural exchanges at a global level.

The digital landscape is evolving, bringing the world together, creating both fresh opportunities and new digital challenges that require innovative approaches to harness safely.

Digital advances represent a real opportunity for the Northern Territory to reduce disadvantage, remove the impact of 'tyranny of distance', open up access to global markets and improve education, health and social outcomes.

Northern Territory

One per cent of Australians live in the Northern Territory, spread across one sixth of the continent.

Despite its small population, the Territory has complex and significant health, social and education issues related to population demographics and geographic dispersion. This is compounded by a substantial infrastructure deficit compared to other Australian jurisdictions.

Because of its unique and extreme circumstances, the Territory has always had a reputation as a frontier community, a place where innovation is an essential part of getting things done.

245 000 NUMBER OF PEOPLE IN THE NT¹

30% OF POPULATION ABORIGINAL¹

2.9% ANNUAL GROWTH IN DIGITAL JOBS⁶



40% OF POPULATION OUTSIDE MAJOR CITIES²

89% OF POPULATION HAS INTERNET AT HOME³

47 REMOTE COMMUNITIES WITH ACCESS TO INTERNET⁴

14 000 BUSINESSES REGISTERED IN NT⁵

Australia

25 MILLION

PEOPLE IN AUSTRALIA ⁷

> 2.1 MILLION

BUSINESSES REGISTERED
IN AUSTRALIA ⁵

31% OF POPULATION OUTSIDE
MAJOR CITIES ⁸

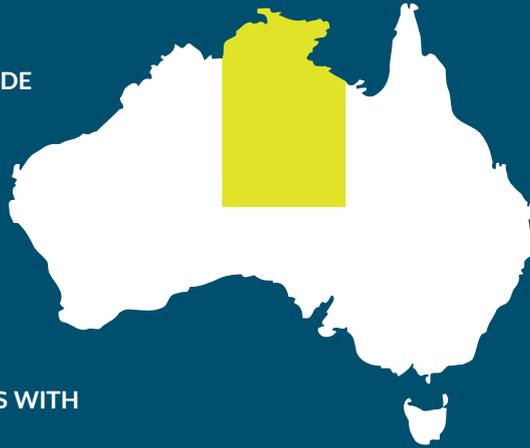
2% ANNUAL GROWTH IN
DIGITAL JOBS ⁶

3% OF POPULATION
ABORIGINAL ⁹

25% INCREASE IN
CYBER CRIME ¹⁰

86% OF POPULATION HAVE
INTERNET AT HOME ³

136 REMOTE COMMUNITIES WITH
ACCESS TO INTERNET ⁴



The World

4.5 BILLION

POPULATION IN ASIA-PACIFIC ¹¹

7.5 BILLION

WORLD POPULATION ¹²

51% OF POPULATION OUTSIDE
URBAN (ASIA-PACIFIC) ¹³

46% OF POPULATION OUTSIDE
URBAN (WORLD) ¹³

51% OF ASIA-PACIFIC ARE
INTERNET USERS ¹⁴

50% OF WORLD POPULATION
ARE INTERNET USERS ¹⁴



Vision

Enabling Territorians to make the most of digital technology to build connections, reach their potential and succeed in a thriving digital economy.

Purpose

This first Digital Territory Strategy provides a framework to help Territorians gain the skills, knowledge and capabilities to not only keep pace but to succeed in an increasingly digital world.

The strategy encourages digital inclusion and leadership in order to grow a secure, connected and thriving digital economy and ensure Territorians and Territory communities are taking advantage of new technologies and are ready for the future.

Approach

In order to succeed, the strategy will need to be driven collaboratively by community, industry and government working in unison; as such, the digital directions contained in the strategy have been developed collaboratively, with the input of individuals and organisations from all sections of the community, from industry and business and from government.

To achieve our shared vision, we need:

- **A vibrant community that:**
 - has the skills and confidence to make the most of digital opportunities
 - supports children and young people to take advantage of digital opportunities while understanding and managing the risks associated with being online
 - is engaged and connected locally, nationally and globally.
- **A dynamic digital industry that:**
 - makes the most of innovation and new opportunities
 - provides essential expertise to support and grow the Territory economy
- connects with and assists businesses and the broader community to harness digital advances and manages digital risks.
- **An engaged government that:**
 - delivers efficient and targeted services to meet Territorians' needs, regardless of where they live
 - uses digital technology intelligently to create jobs, support economic development and improve Territorians' lives while helping to protect the community from digital risks
 - practices and drives a culture of openness, inclusion and innovation.

Everybody can contribute to delivering the strategy – the benefits and rewards of achieving our digital vision will advantage all Territorians.



Virtual technology is evoking the pain, suffering and fear of World War II by bringing the stories of the Bombing of Darwin to life at the Royal Flying Doctors Museum at the Stokes Hill Wharf.

When Darwin Harbour was bombed in 1942, the wholesale destruction wreaked havoc on the city and its people. The harrowing stories and experiences of residents and those who fought to protect the city are being re-lived using virtual reality goggles and holograms.

A life size hologram of Rear Admiral Etheridge Grant, the late Commanding Officer of the USS William B Preston, recalls his own encounter during the bombing.

Developing the strategy

The Digital Territory Strategy was developed in consultation with the community, local business sectors, ICT industry, major international digital companies, non-government organisations and Northern Territory Government agencies.

More than 155 digital ideas and 40 written submissions were received through a series of community forums, workshops, consultation sessions and online feedback. The Office of Digital Government has worked with interested stakeholders to identify common digital priorities that impact Territorians and incorporated them in the strategy to ensure all voices are being heard.

A key outcome of the consultation was the need to invest in and focus on creating, securing and embedding essential digital foundations.

Having the right foundational digital capability, computing and infrastructure will provide the platform to scale technologies to our environment, allow us to be agile in delivery and put Territorians at the centre of developments.

The extensive consultation also highlighted consistent themes across stakeholder groups covering digital inclusion and access, digital skills development, business and community opportunities, online safety, modern and convenient services and use of data.

These themes have helped to inform five primary digital directions that underpin the Digital Territory Strategy, supported by key focus areas and actions.

The strategy presents a blueprint for transforming the way Territorians work, live and learn that will grow the Territory's digital culture and capability.

Territory seniors are getting hands on with new technology at free workshops at the Alice Springs Library to improve their digital skills to tap into new education and social opportunities.

Learning how to use mobile devices helps close the IT knowledge gap between younger generations and seniors by building their computer skills, so they can gain confidence to access more services online, learn and work in digital fields and connect with their community.

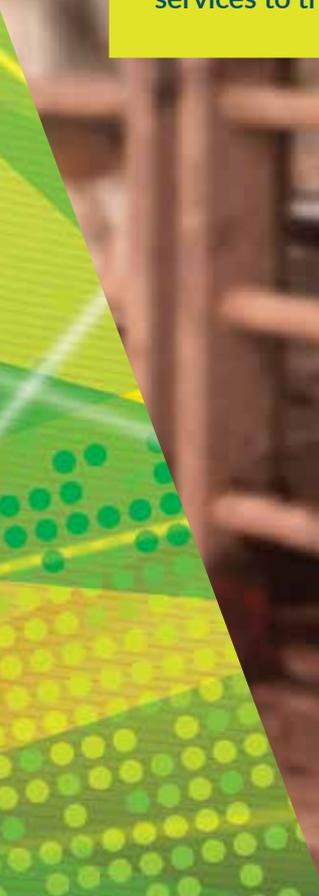


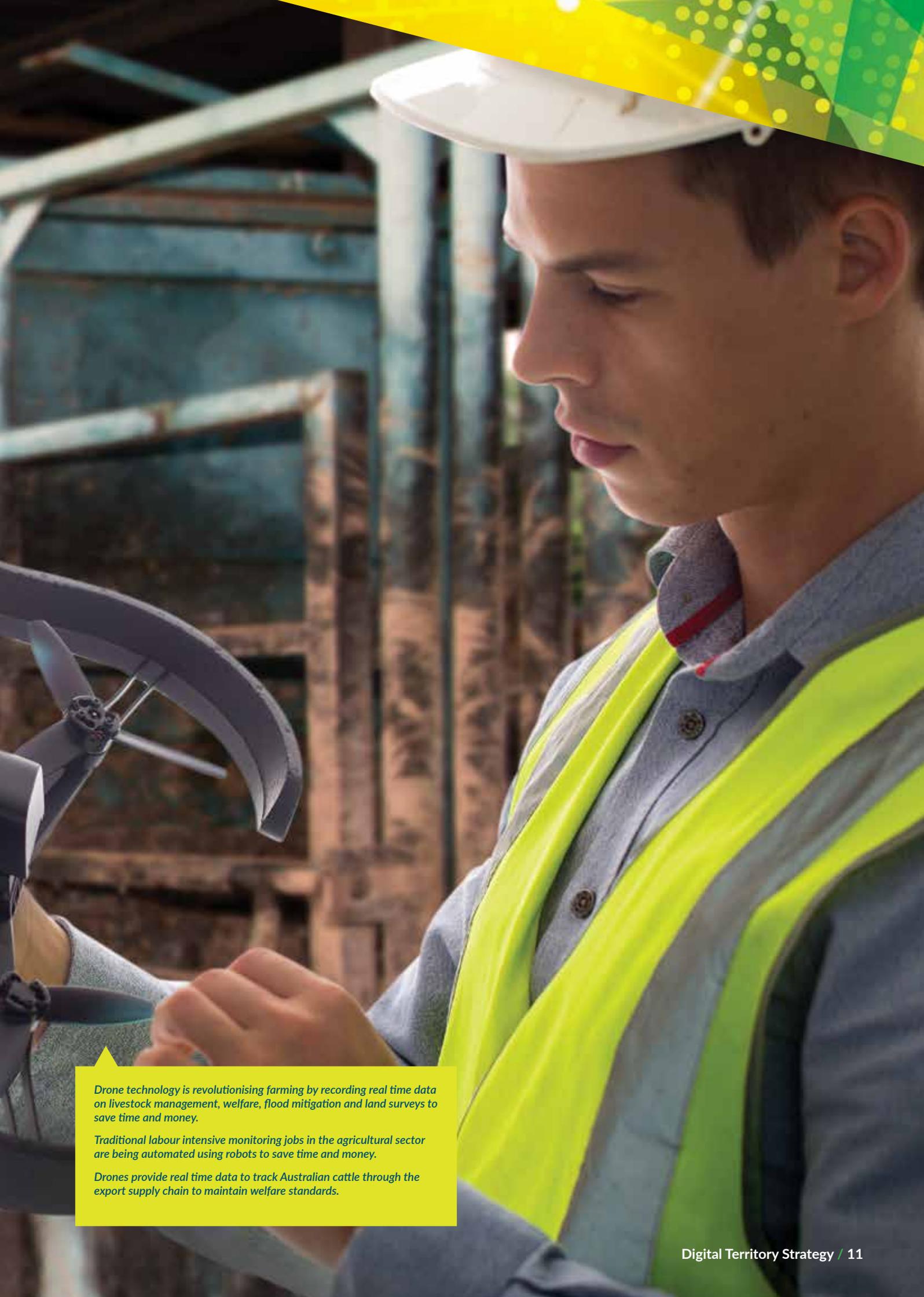
Digital Directions

- Growing Jobs and Business
- Connecting Territory Communities
- Building Digital Skills
- Enabling Smarter Communities
- Improving Government Services

What will this strategy mean for the Northern Territory?

Territory businesses, community and government will share the digital journey and together shape a vibrant digital home and marketplace for all Territorians, delivering better jobs, better business outcomes and better services to the community.





Drone technology is revolutionising farming by recording real time data on livestock management, welfare, flood mitigation and land surveys to save time and money.

Traditional labour intensive monitoring jobs in the agricultural sector are being automated using robots to save time and money.

Drones provide real time data to track Australian cattle through the export supply chain to maintain welfare standards.



Manufacturing company Spee3D's new 3D printer produces materials up to one thousand times faster and at a lower cost than other machines.

3D printing uses cutting edge technology to create solid three-dimensional objects from a digital file and can create prosthetic limbs, reduce manufacturing waste to zero and reduce production costs.

The development opens new doors for industries such as the automotive and construction sectors while revolutionising manufacturing processes to develop real world applications and drive industrial development.

Remote housing construction is one area that could benefit greatly from this technology, reducing costs and increasing efficiency.

Growing Jobs and Business

We will achieve this by:

- using emerging digital technology to drive business growth, reach new markets and create new jobs for Territorians
- encouraging businesses to mature their digital capability and compete effectively in a digital marketplace with guidance and support from the local digital industry
- developing the digital workforce and assisting businesses to identify digital requirements
- leveraging digital innovations to increase business productivity and ensure sustainability
- enabling digital innovators to use government data in new ways through creating value add services
- protecting digital data and staying secure online to maintain business viability and reputation.

PREDICTED

2.9% ANNUAL JOBS GROWTH IN ICT SECTOR IN THE TERRITORY⁶

92% OF FUTURE JOBS WILL NEED DIGITAL SKILLS¹⁵

MOBILE INTERNET IS OF MAJOR IMPORTANCE TO

53% OF BUSINESSES²³

What you said:

Digitally enabling Aboriginal businesses and the creative, cultural and environmental industries to enhance their capabilities to develop new products and markets. (Ngukurr Community)

Government assistance is needed to ensure there is appropriate digital infrastructure and education programs for regional business to capitalise on digital marketing and operational tools. (Australian Hotels Association NT)

Partnerships must be created that actively look for differentiation and excellent offerings in more targeted markets. The NT is at the gateway to our North and can carve a niche as accessibility specialists. (Higher Education Consulting Group)

We must maintain an open approach to skilled migration while ensuring it addresses genuine skills shortages and avoids exploitation of migrant workers. (Australian Computer Society)



Digital technology is changing the Northern Territory's business environment and opening up opportunities in growth and emerging sectors of our economy.

Digital knowledge and innovation is key to keeping business operations efficient, developing new products and finding new markets. Harnessing opportunities from digital technologies requires a connected business sector, a proactive digital industry and a smart workforce.

The Territory has an experienced, capable and active local ICT industry which primarily services government and the small business sector. There is also a growing and diverse local digital industry that extends from digital design and communications through to tech start-ups using drones, sensors and apps. The ICT Industry Association advocates on behalf of the local ICT industry to increase opportunities to supply services to government, including custom-building and maintaining ICT systems, which will assist local industry to deepen its skills base and improve commercial outcomes.

With small business owners' increasing reliance on digital technology to effectively conduct their business, the local ICT and digital industry is well placed; going beyond traditional ICT support roles and becoming valuable and trusted business partners, providing expertise and digital know-how that can transform small business. A dynamic and innovative digital services sector will underpin local businesses enabling economic growth across sectors.

To be able to take their place in an increasingly digital world, Territorians will need skills in areas such as robotics, sensors, data science, virtual reality and mobile technology. These jobs of the future will not be restricted by geographic location and the constraints that we have today which means digital technology presents extraordinary potential for remote and regional Territorians.

The government will work to support and encourage the business sector to capitalise on digital opportunities through appropriate policy settings including making government data openly and freely available for businesses and individuals to reuse. Government will continue to focus on increasing transparency, building trust and creating job opportunities.

The escalating threats to cyber security are a global concern and the NT is not immune. Cyber safe practices in the business and non-government sectors will be supported through education and awareness programs such as the NT Government Cyber Safety Awareness Program.

How will this benefit me?

- **Worker:** I will have opportunities to learn, expand my skills and move into new careers. I will have greater job choice and more interesting work.
- **Business owner:** I can access new markets across the globe. I can grow my business, diversify and create new sales. I can employ more skilled workers and attract new customers. I can compete confidently and improve profitability.
- **Digital industry:** We can build local capacity. We will use our expertise to support local businesses to create new jobs and reach their potential in the global digital economy. We will be trusted advisors and leaders.

KEY FOCUS AREAS



Assist businesses to identify digital requirements for jobs and plan to enable Territorians to take up the jobs of the future



Encourage Territory businesses to adopt digital capabilities through ICT industry leadership, advice and support



Enable business innovation and development of new digital solutions through making many government datasets open, accessible and free to reuse



Support the local digital industry through working cooperatively to expand opportunities, share knowledge and attract digital specialists to supplement existing capacity in the Territory's dynamic digital sector



Promote proactive cyber smart practices so NT businesses can better protect their reputation and viability



Connecting Territory Communities

Age-old healing knowledge has combined with modern technology to protect an ancient language spoken in 26 communities across over 350 000 square kilometres in the remote NPY region of Central Australia.

Twenty senior Anangu women from cross-border communities of the NPY region of Central Australia embraced new technology by developing the Kulilla language app to record and translate health and medical terminology and phrases in Pitjantjatjara, Ngaanyatjarra and English.

Using a simple touch and listen feature on mobile devices, local and visiting health workers use the app to talk with local people about mental health, while recording and protecting traditional languages for future generations.

We will achieve this by:

- providing more equitable access to digital technology, enabling a more digitally inclusive community
- advocating to the Australian Government for improved connectivity so all Territorians receive the same telecommunications services as other Australians
- increasing digital knowledge and capability to create vibrant, digitally savvy Territory communities
- encouraging remote residents and businesses to take advantage of digital technology opportunities through leveraging investment with service providers
- enabling Territorians to protect themselves from cyber threats and online bullying by being cyber smart and confident online.

39 COMMUNITIES CONNECTED BY NT GOVERNMENT/TELSTRA CO-INVESTMENT PROGRAMS SINCE 2009¹⁶

NEARLY **1 in 3** TERRITORIANS CAN ONLY ACCESS BROADBAND SERVICES VIA SATELLITE (COMPARED TO 3% NATIONALLY)¹⁷

DIGITAL INCLUSION IS **7.9** POINTS HIGHER IN CAPITAL CITIES THAN RURAL AREAS²⁴

What you said:

The unique and complex challenges of providing appropriate access, connectivity, communication systems and skills in Central Australia provide a significant opportunity for disruption and innovation. (Desert Knowledge Australia with Indigenous Remote Communications Australia)

Stable and high speed internet and 5G services are as important as running water and electricity, doing business in the 21st century is all about data, downloads, uploads. (Mizzi Blake)

A common theme across the NT's hospitality industry and our members located outside of Darwin and Alice Springs are these businesses not having constant access to reliable internet. Slow or unreliable internet affects businesses' ability to operate in a productive manner. (Australian Hotels Association NT)



The need to belong, communicate and connect with other people is fundamental to the human spirit.

In today's world, good connections require access to critical telecommunications infrastructure and online services. The Territory's relatively small and widely dispersed population across vast and remote land masses makes this kind of connectivity complex and expensive, but also potentially life-changing.

Telecommunications have been central to the development of the Northern Territory since 1872 when the overland telegraph first linked Australia to the world.

Today, technological advances, particularly digital services, means we can reduce the tyranny of distance even further, allowing for better economic, social, health and educational outcomes.

Digital telecommunications and online services are fast becoming as essential as power for our homes and roads for transport.

Investments by the NT and Australian governments and telecommunications providers are seeing optic fibre links installed in all major regional centres and many remote communities, enabling more Territorians to access reliable mobile and broadband services.

These connections are becoming increasingly critical to the daily lives of Territorians, including in remote communities where being connected ensures people can access funds to buy food, fuel and power, keep in contact with family, and take up economic opportunities on their land.

However, there are still around 25 000 Territorians without internet or mobile access where they live (excluding satellite services) which means they have limited access to the social and economic benefits that digital technology can provide.

The Australian Government is responsible for telecommunications and the NT Government continues to advocate strongly for more Federal investment in telecommunications infrastructure and services so all Territorians enjoy the same standard as other Australians.

Equitable access to digital technology and telecommunications will unlock new economic and job opportunities in regional and remote areas of the Territory, foster social and cultural connections and access to services, create opportunities to engage and collaborate with government and overcome our great distances and isolation.

How will this benefit me?

- **Remote families:** We can access the same opportunities and services as families living in urban areas. We can stay in touch and up to date with family and friends who live anywhere in the world.
- **Senior:** I will have a place in the digital world. I can connect confidently across generations. I will be secure and aware online.
- **Person with disability:** I will find it easier to reach people, know what is happening, and participate in my community.
- **Remote business owner:** I can use digital technologies to move my business into new areas. I can attract customers from anywhere in the world.

KEY FOCUS AREAS



Work with telecommunications providers and the Australian Government to improve communications infrastructure to remote communities and locations across the Territory



Increase Territorians' access to digital services so everyone can be engaged and included in digital opportunities



Investigate tailored digital communications and services that meet divergent community needs across bush and urban communities and recognising Aboriginal culture



Link communities with the ICT industry and digital entrepreneurs so they can develop new solutions to long-standing community problems



Today's children are preparing for the new millennium by learning digital skills for the jobs of the future.

Palmerston school students programmed Lego EV3 robots to act and dance in time with music to compete in an international RoboCup competition.

RoboCup encourages young students to learn robotics and programming to build up problem solving and critical thinking skills that are crucial for a digital future, along with traditional sharing, teamwork, cooperation and organisational skills.

Building Digital Skills

We will achieve this by:

- providing digital learning opportunities for Territorians from early schooling to mature age, increasing their digital capability
- fostering future digital innovators through expanding access to STEM programs and specialised training opportunities
- building a digital ready workforce and a digitally smart community through programs and policies that encourage and support Territorians to improve their digital skills
- creating pathways and job opportunities for Territorians in the digital sector, particularly those living in rural and remote areas, those returning to the workforce, women and girls and Aboriginal Territorians
- enabling Territorians to protect themselves online through cyber smart practices.

WOMEN FILL

28% OF AUSTRALIAN ICT ROLES ⁶

15% GROWTH IN STEM QUALIFIED POPULATION IN AUSTRALIA BETWEEN 2011 AND 2016 ¹⁸

CYBER CRIME IS ESTIMATED TO HAVE DOUBLED IN AUSTRALIA IN 2016 ¹⁹

What you said:

Digital knowledge leads to endless possibilities and even the opportunity to work remotely without moving. (Digital Strategy Public Forum Darwin)

ICT and STEAM more broadly need to become foundational from the earliest levels of education. (Higher Education Consulting Group)

Create Territory-wide, industry-wide opportunities for internships and apprenticeships for entry level jobs. (NEC)

Education and training are key to helping our workers of today to transition into new digital jobs. (Australian Computer Society)



Digital knowledge and skills are an essential foundation for digital jobs, transformation and future success. A whole of community learning approach will be needed to reach our full potential.

Skills development is a common thread across each of our five digital directions. Digital learning is the foundation for capability development and shaping a digital-centric culture across our communities, with Territorians ready and skilled for the future.

Digital technology is moulding and changing the jobs of the future. The emergence of disruptive technologies like 3D printers, drones, quantum computers, automation and robotics are already beginning to influence workplaces and sectors.

From an early age, there needs to be a focus on core subjects of science, technology, engineering, arts and mathematics (STEM) which are essential to building a digitally savvy workforce that the local business sector will need.

People in remote communities, women and girls, and those re-entering the workforce need opportunities and support to secure digital jobs, with tailored training to ensure success.

There are a range of digital skills required across a range of new and emerging fields including coding, computers and network management. These new fields won't only require technical skills; interpersonal and entrepreneurial skills such as collaboration, problem solving, creative thinking and leadership will also be critical.

Skills and learning are not just about jobs. There are broader social, safety and health benefits to be gained from helping people across the community to be more digitally savvy. Improving digital knowledge and confidence for vulnerable groups, such as senior Territorians, will enable people to access

digital services and applications, remain actively engaged and keep in touch with family and friends.

Safety online and personal cyber security advice delivered through digital literacy programs will prepare new digital users and increase awareness and understanding of risks among digital users, as well as how to manage those risks and stay protected online.

Digital skills expansion will enable Territorians to be sought after, competitive and ready for the workforce of the future and be confident users in a technology driven world.

How will this benefit me?

- **Children and young people:** I will have fun learning in a digital classroom. I will be well equipped to live and work in the digital age.
- **Teacher:** I can teach new and innovative capabilities to children that inspire their natural curiosity. New technologies will support me in the classroom.
- **Women and girls:** We will be competitive in the digital market and forge careers in the digital industry.
- **Returning worker:** I will grow my digital skills and knowledge and gain confidence to start a new job and career.
- **Remote Territorians:** We will learn and have the digital skills needed to get rewarding jobs. We will show the world our unique culture from our home.

KEY FOCUS AREAS



Grow the science, technology, engineering and mathematics (STEM) capabilities of Territory children to ensure they have the digital skills needed for future careers or to create their own opportunities



Develop Territorians' digital knowledge and skills to take up new opportunities in the digital industry in the Northern Territory or to find new and better ways of doing business



Encourage people from all age groups, backgrounds and places across the Territory to expand their digital know-how to get the most from new technology and stay connected



Establish cyber security and data science education opportunities to grow these specialised and in-demand skillsets



Enabling Smarter Communities

In a world-first, a solar demonstration facility in Alice Springs is providing valuable open data to users across the world in real time.

The Desert Knowledge Australia (DKA) Solar Centre demonstrates solar technologies and their performance in different conditions to better understand renewable energy in arid conditions.

The centre features 39 solar arrays, built in collaboration with different industry and university partners. The results are published live via an interactive online map and accessed by over 10 000 national and international industry users, including research institutions, academics, students, product developers as well as members of the public.

We will achieve this by:

- applying advanced data analytics and smart technologies to help communities, towns and cities become more responsive to residents' needs
- leveraging the Internet of Things, including sensors and intuitive devices, to make our communities smarter, safer and more ecologically sustainable
- developing intelligent, eco-friendly and efficient public and personal transport options
- adapting digital innovation and automation technology to enhance Territorians' lifestyles in our unique environment.

SMART CITY TECHNOLOGY MAKES UP
26% OF THE GLOBAL INTERNET
OF THINGS MARKET ²⁰

IT IS PREDICTED THE AVERAGE HOUSEHOLD
WILL HAVE **30** INTERNET CONNECTED
DEVICES BY 2021 ²¹

6.4 BILLION
INTERNET CONNECTED DEVICES
WORLDWIDE ²²

What you said:

The Internet of Things (IoT) connects infrastructures to make emergency systems more efficient, or reduce service response times across devices, cloud, analytics, and backend systems. (Microsoft)

Speed and sophistication of digitisation is on the rise (e.g. machine learning and internet of things). (Charles Darwin University)



Many smart cities programs are delivered in densely populated areas. The Territory's challenge is to harness smart solutions that are affordable and suit our unique environment and demography.

'Smart city' initiatives in urban environments in Australia are mostly targeted at addressing challenges like traffic congestion, city management costs and timely service delivery.

But the technology can also be applied to the Territory context.

Harnessing smart city technology like renewable energy, connected sensors for automating lighting and updating transport data on-the-go, driverless vehicles and data analytics will provide new opportunities for Territory industries to drive efficiencies and sustainability, introduce new innovation opportunities and make our communities safer.

Intelligent technologies have, and will continue to, transform the way we live and connect. Our lifestyle is continually influenced by digital advances and the minimum standards that we come to expect, such as being able to access the internet at all times, continue to grow.

The IoT (Internet of Things) is revolutionising our expectations of services and 'finger-tip' ready information that is fast, connected and reliable; people now want connected vehicles, connected home devices and AI-powered intuitive devices.

Data analytics underpins the growth of the IoT through data generated from many sources, including IoT devices, coupled with sophisticated algorithms to tailor services for individuals (such as knowing preferences for food, car travel and TV channels), establish trends and sell products.

Through the clever use of digital technology in a Territory context, many of our city services can be streamlined and remodelled for the benefit of Territorians. Some examples of

the smart things that can be introduced include motion sensor street lighting, smart car parking, automated buses and high definition CCTV for improved safety.

Smart cities technology will help the Territory to overcome the challenges of our dispersed population and assist the key agriculture, mining, and tourism sectors. It will also benefit sporting, social or community activities, such as guiding traffic flow for major events, and redirecting lighting or extra buses.

Adapting this technology to our towns and regional communities will require ingenuity and persistence. There will be a need to effectively leverage ideas established elsewhere and to seek low-cost solutions that can be modified to suit smaller communities.

How will this benefit me?

- **Agri-business:** I can improve resource management efficiency that will grow my bottom line and meet environment and sustainability goals.
- **Tourist:** I can access a broader range of experiences and consciously reduce my footprint on the unique Territory landscape.
- **Commuter:** I can consume less natural resources by using automated transport.
- **Innovator:** I can develop technology that gives my customers more sustainable solutions and choices and improves people's lives.

KEY FOCUS AREAS



Encourage greater application of digital technology at the community level



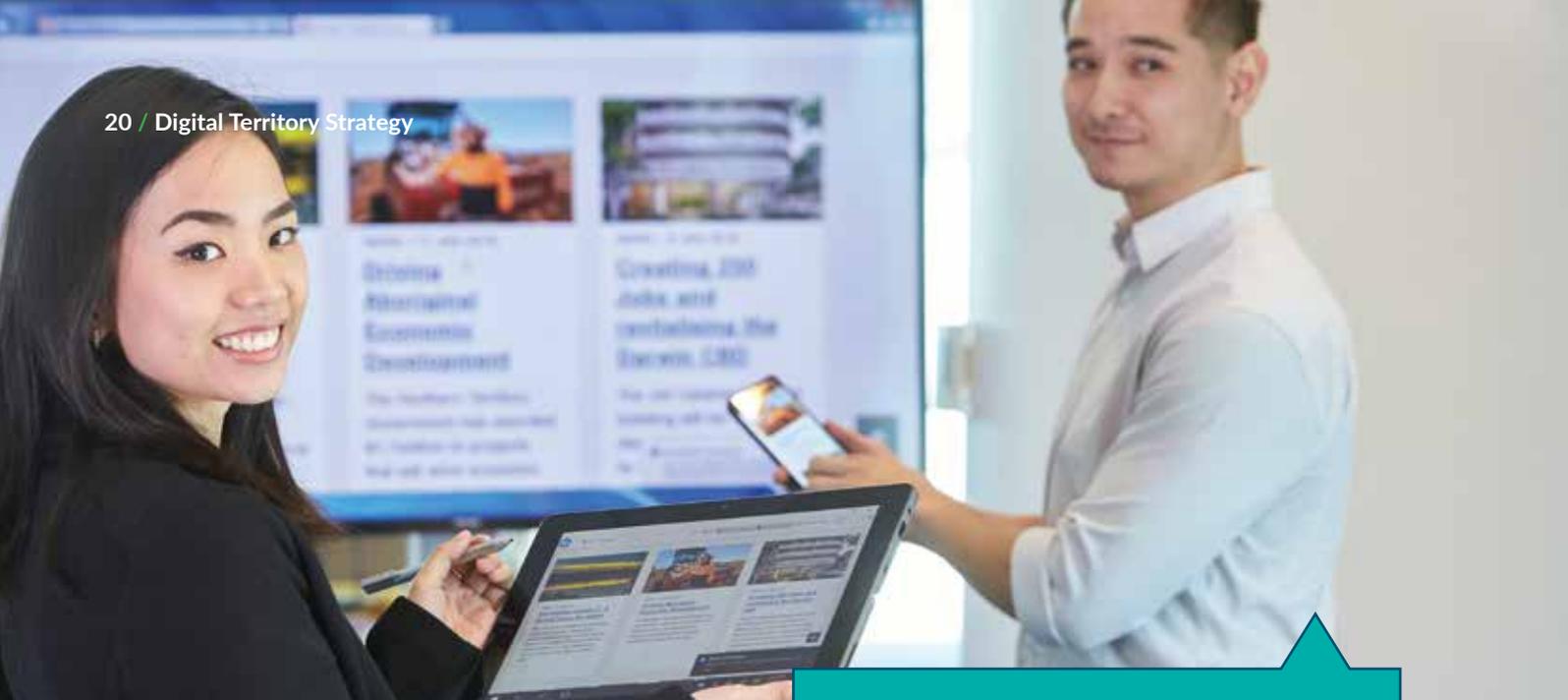
Make use of modern sensor systems and data analytics to better integrate activity and make it easier for people to live, work and move about in the community



Leverage digital innovation to progress contemporary and eco-friendly transport options



Improve community sustainability through digital advancements that encourage less energy and water use



Improving Government Services

A digital first approach to expand government's online footprint makes it easier for Territorians to access services; this particularly helps disadvantaged people living in remote and regional areas, people with mobility restrictions, care-givers and seniors.

All members of the community can easily find and use government services at a time and place that suits them.

The need for people to come into government buildings during office hours is reducing and this trend will continue at a faster rate - government will now come to the community.

We will achieve this by:

- prioritising digital channels for government services, increasing convenience and empowering Territorians to choose how they engage with government
- introducing modern, integrated digital solutions, transforming frontline service delivery to Territory communities
- investing in capability and appropriate policy settings, ensuring government's digital foundations are robust, secure and reliable
- moving to a 'tell us once' approach, making it easier for Territorians to transact with multiple government departments.

10 DIGITAL APPS PUBLISHED BY THE NT GOVERNMENT TO ITUNES AND GOOGLE PLAY ¹⁶

700 GOVERNMENT DATA-BASES WITH ADDRESS OR GEO-SPATIAL REFERENCES ¹⁶

2.1 MILLION VISITS OVER THE LAST YEAR TO NT.GOV.AU ¹⁶

What you said:

Citizens are looking for more government services to be available online and to be easy to use, from renewing a car registration to applying for a job. Government services need to be reliable, easy-to-use and accessible for remote communities where traditional services are no longer available. Focusing cyber safety programs and messages for the most vulnerable members of the community. (Ngukurr Community Ethos Global Foundation)

NT Government partnering with industry to deliver trusted verification and identity services, helping to leverage investment and experience. (Australia Post)

Efforts must continue towards the digital transformation of government transactions and services. (Australian Computer Society)



Digital technology is changing Territorians' expectations when it comes to government service delivery.

A new generation of digitally savvy Territorians are demanding more sophisticated, streamlined and accessible people-centric experiences when using government services, with control over the departments and services they share their data with.

Increasing the footprint of accessible, intuitive and mobile-responsive online services is a priority for government and critical to the future of government services. Working to establish seamless interactions across integrated government services using a secure 'tell us once' approach will make the customer experience simpler and faster.

The client experience is central to designing online services and will take into account the unique community demographics in the Northern Territory. Customers are now being involved in solution focused co-design processes rather than just being service and product consumers. Code fairs, hackathons and crowd sourcing all place the customer at the centre of technology development.

Embracing the co-design process might mean government has to look at existing services differently and not just convert a process to an online form; rather the focus needs to be on designing the experience in a new way that suits the end user.

Government recognises the benefits that digital technology can deliver and is progressing an inclusive and streamlined digital reform agenda that will transform service delivery across many frontline government services from health and policing through to courts and licensing.

Digital transformation firstly requires government to have sound digital foundations that are robust, secure and responsive to ensure the digital disruption reforms are successful.

Much work has been done and there is much more to do, across agencies and with stakeholders to deliver solutions that are effective, intuitive, integrated and, most importantly, meet Territorians' needs.

How will this benefit me?

- **Territorians:** I will receive a broader range of digital service options to use at my convenience. My information will be secure and protected.
- **Apps developers:** We will have opportunities to help people and make money using our knowledge and skills to develop innovative applications.
- **Frontline government staff:** We will focus on our customers' needs and streamline our services. We will provide more information to Territorians.
- **Researcher:** I will have access to valuable datasets that will allow me to explore new contexts, gain new insights and solve difficult problems.

KEY FOCUS AREAS



Deliver modern government digital services that are customer-centric and simple to use



Reform systems and establish government ICT applications on efficient and sustainable platforms



Strengthen digital foundations for government and the community to effectively support and enable the digital transformation journey



Maintain secure government systems to protect Territorians' data



Make online identity verification transactions with government easy

Digital Strategy Blueprint

DIRECTIONS

KEY FOCUS AREAS

Growing Jobs and Business



Assist businesses to identify digital requirements for jobs and plan to enable Territorians to take up the jobs of the future

Encourage Territory businesses to adopt digital capabilities through ICT industry leadership and support

Enable business innovation and development of new digital solutions through making many government datasets open, accessible and free to reuse

Support the local digital industry through working cooperatively to expand opportunities, share knowledge and attract digital specialists to supplement existing capacity in the Territory's dynamic digital sector

Promote proactive cyber smart practices so NT businesses can better protect their reputation and viability

Connecting Territory Communities



Work with telecommunications providers and the Australian Government to improve communications infrastructure to remote communities and locations across the Territory

Increase Territorians' access to digital services so everyone can be engaged and included in digital opportunities

Investigate tailored digital communications and services that meet divergent community needs across bush and urban communities and recognising Aboriginal Culture

Link communities with the ICT industry and digital entrepreneurs to develop new solutions to long-standing community problems

Building Digital Skills



Grow the science, technology, engineering and mathematics (STEM) capabilities of Territory children to ensure they have the digital skills needed for future careers or to create their own opportunities

Develop Territorians' digital knowledge and skills to take up new opportunities in the digital industry in the Northern Territory or to find new and better ways of doing business

Encourage people from all age groups, backgrounds and places across the Territory to expand their digital know-how to get the most from new technology and stay connected

Establish cyber security and data science education opportunities to grow these specialised and in-demand skillsets

Enabling Smarter Communities



Encourage greater application of digital technology at the community level

Make use of modern sensor systems and data analytics to better integrate activity and make it easier for people to live, work and move about in the community

Leverage digital innovation to progress contemporary and eco-friendly transport options

Improve community sustainability through digital advancements that encourage less energy and water use

Improving Government Services



Deliver modern government digital services that are customer-centric and simple to use

Reform systems and establish government ICT applications on efficient and sustainable platforms

Strengthen digital foundations for government and the community to effectively support and enable the digital transformation journey

Maintain secure government systems to protect Territorians' data

Make online identity verification transactions with government easy

Chris Fitzpatrick is a Yanyuwa/Garwua man from Borroloola. Chris followed his creative dream, obtaining a Certificate IV in Media at Charles Darwin University and joining CAAMA in 2014. Chris uses his newly acquired skills to digitally capture the stories of his culture and people.



What will success look like?

- **Healthy and prosperous digital economy enabled by:**
 - skilled, talented and innovative local workforce
 - dynamic, proactive, expert ICT industry and supportive government
 - confident, agile and digitally capable local businesses across the Territory that embrace disruptive digital innovation.
- **Inclusive, safe and thriving Territory communities supported by:**
 - equitable and affordable access to the internet and mobile phone services
 - digital savvy, connected and informed people across all community groups
 - sustainable, clever Territory towns exploiting digital technology to enrich lives.
- **Responsive and engaged Territory Government evidenced by:**
 - strong and scalable digital foundations, protections and policy settings to leverage growth and meet Territorians' needs
 - progressive digital transformation focussed on creating jobs and supporting economic development
 - culture of openness, inclusion and innovation working in collaboration with local business to support the Territory community.



Delivering the strategy

Territorians are at the heart of this strategy – achieving the strategy’s vision and directions will require commitment, collaboration and effort from the Northern Territory Government, business sector and community.

Over the next few years, the Office of Digital Government will work with all levels of government, the business sector, digital industry, non-government organisations and the community to maximise digital economic and social opportunities for the Territory.

Businesses, innovators and entrepreneurs will have the opportunity to design new digital experiences, tap into data, and create exciting new services or products.

In order to build, scale and sustain our digital environment we need to ensure we have robust,

secure and responsive digital foundations that will underpin new technologies and innovations.

The skills, expertise and investment of the local digital industry, along with the broader local business sector, are integral to capitalising on the opportunities of digital transformation and innovation.

Territorians will be empowered to embrace new ways of conducting transactions and business and encouraged to challenge the status quo.

Action plans

The actions form a key part of our digital transformation journey and support the strategy by identifying clear tasks and deliverables for government, business and the community so that we turn the vision into reality.

In order to deliver on the strategy's five directions, an annual Digital Territory Action Plan will be published. Actions will build capability aligned to the digital directions, strengthening the Territory's digital footprint and contributing towards realising the vision.

The Digital Territory Strategy and action plan can be viewed on our Digital Territory website, which provides regular updates on our progress, milestones and successes.

Actions within each direction will span across three phases of work, providing visibility of opportunities and initiatives over the coming years.

ACTION PLAN PHASES

Deliver

The action has been designed and planned, and will be progressed within the reporting period, and evaluated on completion. Some actions will be delivered over multiple years or be ongoing.

Design

The action is being designed and refined, using information gathered during the explore phase. The action will be planned and prepared for delivery within the action plan reporting period.

Explore

The action is in a new or innovative area and will be researched and potentially piloted during the reporting period. The action will be analysed and readied for the design phase.

During the NT Youth Week, and coinciding with school holidays, the Alice Springs Public Library partnered with CAYLUS to provide a 'Geek in Residence!' Program.

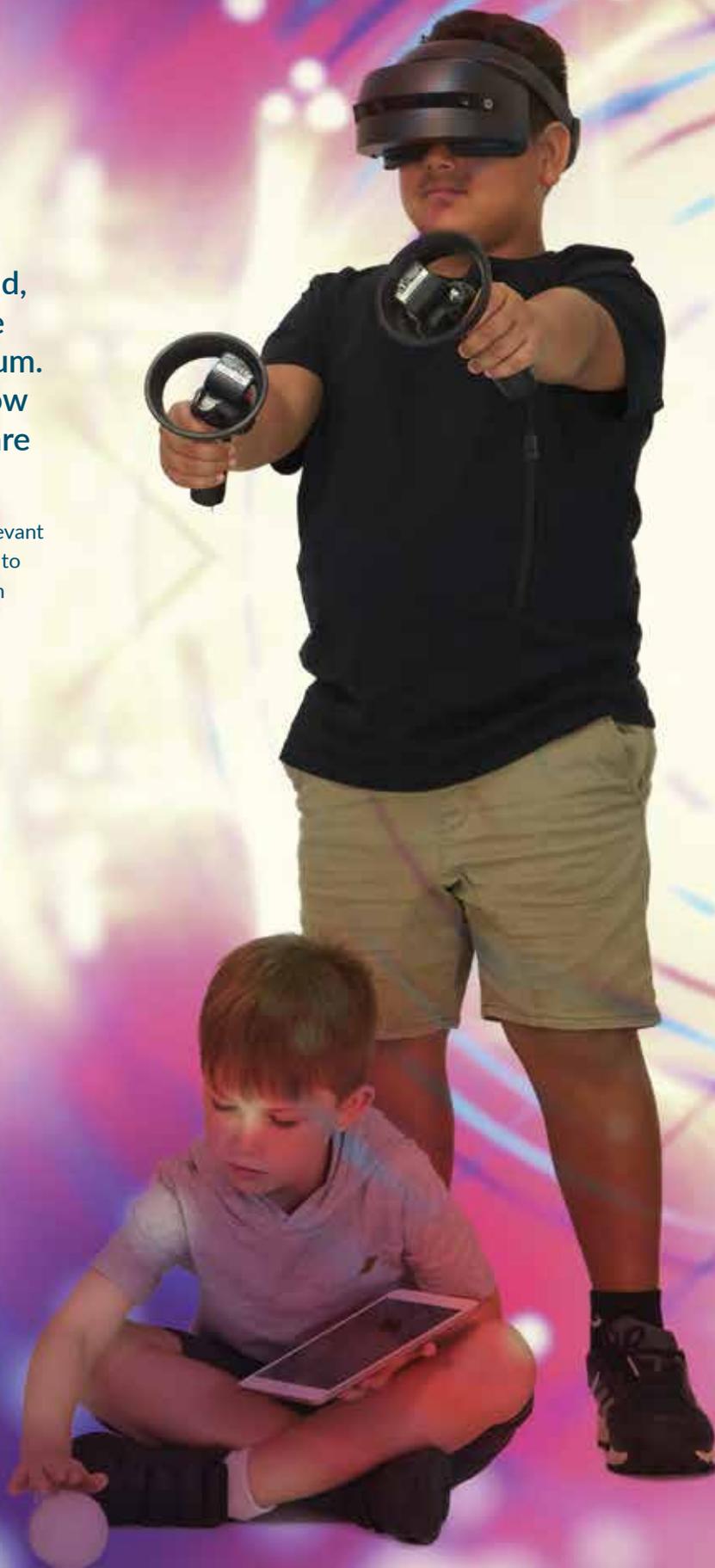
Teenagers were taught technical and programming skills developing music, digital gaming and more. These free sessions have been extremely popular with youth in the community and participation has been growing.

Refreshing the strategy

The pace of digital change is rapid, in order to achieve our vision the strategy must maintain momentum. Annual action plans will show how far we have come and what we are working to deliver.

To ensure the Digital Territory Strategy remains relevant and valid, it has been designed as a 'living strategy' to be examined and refreshed regularly. This approach ensures the key focus areas and actions remain aligned with technological advances, the changing digital environment and the needs of Territorians.

Reporting back on actions achieved annually and settling the next Digital Territory Action Plan for the year ahead will enable the strategy and its deliverables to remain fresh and relevant.





Our approach to learning, gaming and interacting has fundamentally changed. Digital technology allows our children to have virtual reality experiences without harm or fear; interacting with other students from across the globe as if they were there in person.

Understanding different cultures is no longer learned only through traditional methods, but can now be virtually 'lived' and experienced.



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Cabomba underwater camera.

Weed Officers conducting real-time underwater video surveillance for the aquatic weed Cabomba caroliniana as part of the Cabomba Eradication Program in Darwin River.

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