



# Cisco Australia Digital Readiness Index 2022

Resilient, Sustainable, Equitable – Our Digital Readiness Opportunity

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# Foreword

## Defining digital readiness for a resilient, sustainable, and human-centric future

When the architects of Australia's broadband infrastructure were planning their networks, they could never have imagined the test they would one day face.

Australia's response to the COVID-19 pandemic was built on its digital infrastructure, but the networks were just one of a series of capabilities that helped to keep businesses and society safe, connected, and productive. Without the ability to create and use digital services, Australia's response to the pandemic might have been very different.

At Cisco, we refer to this combination of digital capability and infrastructure as 'digital readiness,' and it is something that we have been tracking since the release of our first Cisco Global Digital Readiness Index back in 2017. The following year we conducted a similar study of each of Australia's states and territories, the Cisco Australian Digital Readiness Index 2018, and this report marks the third edition of the localised study.

By measuring the factors that contribute to digital readiness, we can understand how different nations, states, and territories are performing, and measure their progress towards creating a more prosperous and digitally inclusive society. We can also understand the improvements that are needed to maintain or boost performance.

The importance of digital readiness was highlighted during the pandemic, but the arguments for its constant improvement are not limited to just national resilience. Thanks to the Digital Readiness Index we now understand the key role digital readiness plays in boosting a country's social and economic prosperity at all times.

As the world's attention swings towards challenges of sustainability and resilience, we are coming to understand the importance of digital readiness for connecting all ecosystems that we operate in – both natural and technological. While it may be true that technological progress may have contributed to the current climatic conditions, we can be sure that technology plays a key role in helping us resolve these challenges, and in creating a future in which our social and environmental systems are resilient and adaptable to new challenges.

Our research into digital readiness has also helped us to understand that it is a competitive contest and that even increased levels of investment may not be enough to prevent one nation falling behind another who is prepared to invest more.

This effect is clearly seen within our own region in this year's report, as despite the efforts of Australia's public and private sectors, we have slipped down the rankings to be overtaken by our neighbour across the Tasman. The latest data study shows Australia dropping from 12th place in 2019 to 16th in 2021, and falling behind 8th ranked New Zealand. Australia's shift in ranking owes much to the decline in student and skilled migration during the pandemic. This highlights the interconnected nature of digital readiness, and the dangers of disengaging from the global community, even for short periods.

However, it would be wrong to attribute Australia's drop in ranking to the pandemic alone, given all nations were impacted by the same event. The more important question now is whether Australia can regain and uplift its ranking and that will depend on how it invests in digital readiness to build national prosperity. Australia cannot afford to stand still, as even maintaining existing investment levels risks seeing us fall behind countries that see the benefits of increasing their investment levels.

Digital readiness is not the only challenge that Australia faces, but it plays a key role in our response to almost any challenge. The world has already witnessed numerous waves of technological transformation, from the early days of the internet to the rise of the World Wide Web in the 1990s and the explosion of mobile services in the 2000s – leading to the era of ubiquitous broadband of the 2010s. Digital readiness is a defining factor in any society's ability to harness the benefits of each of these transitions, and will be again as we strive for a more sustainable future.

This means we must continue to invest, not just in digital infrastructure, but in the skills that are needed to use and secure it effectively. That in turn means providing all Australians with adequate support, in foundational areas such as education and healthcare, to ensure we are building a society which has the imagination and skills needed to translate digital readiness into a digital dividend.

On this note, it is also important to remember that the benefits of digital readiness are not shared universally. As this year's report shows, the divide between those who have access to digital services and skills and those that don't remains prominent. This must be addressed if we are to build a society where the benefits of digital readiness are enjoyed by all.

The Cisco Digital Readiness Index does more than just demonstrate a country, state, or territory's comparative ranking. It provides a blueprint for the investments and interventions that can be made

today to deliver the near and long-term impacts that will shape a prosperous digital future.

At Cisco, we are dedicated to creating an inclusive future for all, and digital access and skills are a key part of this. It is our hope that all Australians can use this report to better understand the benefit of investing in digital readiness to deliver the kind of social and economic outcomes we all seek.

**Ben Dawson**  
**Vice President,**  
**Cisco Australia & New Zealand**

## About this report

Digital readiness is the key measure of prosperous 21<sup>st</sup> century societies

Digital readiness measures the ability to capture the opportunities that digital capabilities and investments create in a country, state or territory, and is directly tied to other measures of a country's performance, both social and economic.

The first Cisco Global Digital Readiness Index was published in 2017 and used a holistic approach that examined seven specific components of digital readiness to demonstrate the relationship between investing in digital capabilities and resulting positive social and economic outcomes. This global study has since been repeated in 2019 and 2021.

In 2018, Cisco compiled a localised version of the report - the Cisco Australian Digital Readiness Index, focused specifically on the performance of each of Australia's states and territories. This was repeated in 2020, and again in this report for 2022.  
*(See previous reports linked on the next page)*

The goals of this report are to highlight the importance of ongoing investment in digital capability and infrastructure and to provide guidance regarding where future investments and interventions could be made, in order to deliver the greatest possible uplift to digital readiness. Throughout the report we have highlighted examples of where changes to the various components that contribute to digital readiness have had a positive or detrimental effect on overall readiness. The goal is to gain insight into decision making for how both public and private sector organisations can act to ensure that Australia

remains at the forefront of digital capabilities. At Cisco, we also use this report to inform our own investments in Australia, such as our **Country Impact Plan** and the creation of the **National Industry Innovation Network**, which is an alliance between industry and universities driven by the goal of realising digital opportunities that can benefit the lives of all Australians.

Our mission at Cisco is to power an inclusive future for all, and we understand the critical link between digital infrastructure and capability and the overall strength of societies and economies. Our mission drives us to see these benefits shared equitably across all members of society, to ensure that all Australians can benefit from the dividends of the digital era, regardless of their location and backgrounds.

As the pandemic demonstrated, digital readiness is critical to Australia's capabilities in responding to crises, as well as providing a basis for economic prosperity at all times. We hope that when reading this report, you will consider your own organisation's contribution to digital readiness and what more can be done to create a vibrant and prosperous digital society.

## Read past Cisco Australian Digital Readiness Index reports



Cisco Australian Digital Readiness Index 2018: Digital Dividend or Digital Divide?



Cisco Australian Digital Readiness Index 2020: Building societal resilience through digital investment



# Research overview

The digital readiness of a country is determined by examining seven components

Since the creation of the first Global Digital Readiness Index in 2017, we have employed a holistic framework and model based on seven different components of digital readiness. This allows us to measure key factors that paint a complete picture of a country's digital readiness and isolate those changes that have led to an increase or decrease in overall score. We have retained the same seven components for this year's report, but as with previous editions, we have made some adjustments to the specific metrics to determine each component's score - either to strengthen their relevance, or to replace metrics that are no longer tracked.

The seven components that determine a country's digital readiness are:



## 1. Basic Needs - Basic human needs for a population to survive and thrive

Countries need a healthy population to be truly digitally ready, and that requires meeting people's basic needs for health and education. To measure this, we assessed data relating to life expectancy, the mortality rate of children under five years of age, and access to electricity and safe drinking water.

## 2. Business and Government Investment - Private and public investment in innovation and technology

Building digital infrastructure and capabilities requires significant investment from both the government and the commercial sector. To measure these investments, we assessed research and development spending, and freedom of investment, and the new metric of renewable energy investment. This final metric replaced the foreign direct investment metric included in previous versions of the model.

## 3. Ease of Doing Business - Basic infrastructure/policies needed to support business continuity

A strong business environment is essential for the creation and distribution of digital services. To determine the ease of doing business we examined data from the Business Index along with factors such as the local rule of law and the time required for businesses to connect to electricity. For this year's index we added the new metric of ease of paying tax, replacing the logistics performance index, which is no longer tracked.

## 4. Human Capital - Skilled labor force to support digital innovation

The ability to use and build digital services and technology depends on the skill level of the workforce. To measure this, we examined four factors: the adult literacy rate, years of schooling, labor force participation, and harmonized education test scores.

## 5. Start-Up Environment - Environment which fosters innovation within a community

Start-ups generate new innovations that can benefit entire markets and communities, helping societies to evolve and grow. By tracking start-up environments, we were able to examine factors such as venture capital investment, new business creation rates, and patent and trademark registrations.

## 6. Technology Adoption - Demand for digital products/services

Technology availability, utilisation, and adoption presents a strong reflection of a country's current level of digital readiness. This was assessed by examining mobile cellular subscriptions, internet usage, and uptake of cloud services.

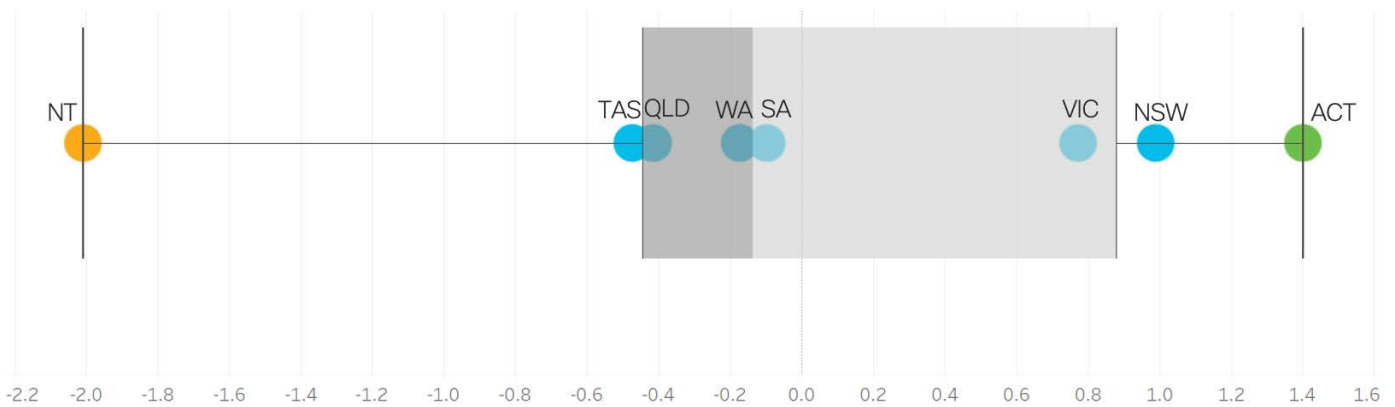
## 7. Technology Infrastructure - Infrastructure available to enable digital activities and connected consumers

Infrastructure plays a key role in enabling countries to develop digital services by providing secure and reliable access to digital channels. We examined data including active mobile broadband subscriptions, household internet access, fixed broadband subscriptions, and secure internet servers.





## Overall DRI Score: Box & Whisker Plot



### Key

- 1 SD below the mean
- Within 1 SD of the mean
- 1 SD above the mean

For this edition of the report, we also made an alteration to the way that data is presented, by adopting a Z-score standardisation rather than the Min-Max normalisation method used previously.

This brings more flexibility to the model and provides greater flexibility for adding or removing countries and metrics, while ensuring better representation of outlier results.

The Z-Score method assesses the mean score for a metric and assigns this a value of 0. If a score is below the mean, it is expressed as a negative number, and if above the mean it will be a positive number, with the size of these numbers determined by the standard deviation (SD) from the mean. This resulted in countries showing digital readiness scores ranging from -1.89 to +2.37.

The Cisco Global Digital Readiness Index 2021 includes measurements of the digital readiness of 146 countries, which was an increase of five countries from the 141 reported on in 2019. These were then grouped into three categories of Activate, Accelerate, and Amplify. Those countries ranked as Activate had an overall score of one standard deviation or greater below the mean, while those in the highest scoring Amplify group had an overall score of one standard deviation or greater above the mean, with those in the mid-tier Accelerate group had an overall score within one standard deviation of the mean. The Accelerate group had the greatest number of countries, which were subsequently segmented as Accelerate Low (for those within one standard deviation below the mean) and Accelerate High (for those within one standard deviation above the mean).

Neither the addition of five new countries nor the transition to the Z-Score method impacted Australia's overall ranking.

For the Cisco Australian Digital Readiness Index 2022 study we applied this same research methodology at a state and territory level, using locally derived metrics to paint a clearer picture of how each performed across the seven components of digital readiness. The resulting scores were then used to rank each Australian state and territory and then group them into the categories of Amplify High, Amplify Medium, and Amplify Low.

Slight changes were made for the state and territory analysis to bring the results to improve the derivation of results. In the component **Ease of Doing Business**, the metric of Small Medium Business support for state/territory policies is no longer tracked, so this was replaced with recruitment difficulty. For **Human Capital**, COVID-related delays in the tracking of math scores saw this replaced by net foreign and domestic immigration data. In **Technology Adoption**, the near saturation of internet connections and smartphone ownership saw these metrics replaced with those for electric vehicle ownership and support for work from home, while minor adjustments were also made to update the metrics used for **Technology Infrastructure**.

We would like to acknowledge the assistance of the Australian Bureau of Statistics (ABS) for providing timely access to data. Without the assistance of ABS staff the timely production of this report would not have been possible.

# Key findings – global

## Highlighting the need for constant investment acceleration

Australia placed firmly within the highest category of digital readiness – Amplify.

However, despite a strong history of digital investment and technology-driven response to the pandemic, Australia nonetheless fell four places from 12th to 16th. This fall was due to only slight declines across four components of digital readiness but was sufficient for it to be overtaken by Ireland, Estonia, the United Kingdom and New Zealand, which rose from 15th to 8th position in global rank.

This change in ranking highlights the competitive nature of digital readiness, and the importance of not only maintaining investment and focus, but increasing it. Australia retained its global ranking for **Basic Needs** and **Business & Government Investment**, and improved its ranking for Human Capital, where it rose above South Korea. However, these improvements were not sufficient to counter comparative declines for **Ease of Doing Business**, **Start-up Environment**, **Technology Adoption**, and **Technology Infrastructure**.

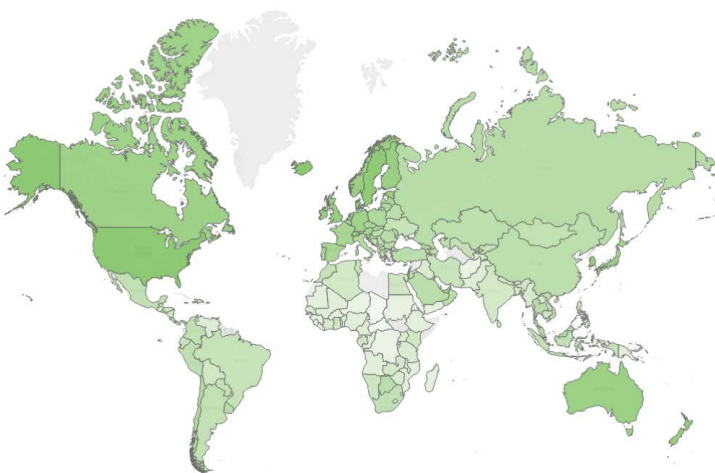
In some instances, these falls were the result of other countries improving at a faster rate. Australia actually lifted its score for **Start-up Environment**, **Technology Adoption**, and **Technology Infrastructure**, but was still overtaken by other nations that improved at a faster rate.

These results provide a sharp reminder that digital readiness is an ongoing race, and that the effort required to maintain or boost a country's ranking in one year may prove insufficient in following years.

The declines suffered by Australia can also not be purely attributed to the COVID-19 crisis, which was a global phenomenon.

The impact of the pandemic in Australia can be most clearly seen in Start-up Environment, and the specific metric of the number of new businesses created over a two-year period, which dropped from a state and territory median of 12.3 per 1000 head of population to 9.1 per 1000 and contributed to Australia dropping from 6th to 9th place for this component of digital readiness. Australia's ranking for **Ease of Doing Business** was impacted by a significant drop in the metric of business density, where Australia's median state and territory score dropped from 8.8 to 8.5 per 100 head of population. This led to Australia falling from 12th place to 16th for this component.

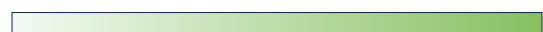
Further evidence of the pandemic's impact can be seen in Australia's score for **Human Capital**, and its metric of post-secondary educational attainment. Australia previously ranked 2nd in the education index globally but is now 7th, most likely due to the closing of Australia to skilled migrants and foreign students.



## Full Spectrum of Digital Readiness

### Digital Readiness Score

L-R: Countries to the left of the colour spectrum had lower scores compared to countries to the right of the spectrum



-1.89

2.36

# Key findings – states and territories

## A nation digitally divided

The examination of digital readiness scores across each state and territory shows close groupings between them on many components, with one significant outlier. Three Australian states and territories were categorised as Amplify High, being the Australian Capitol Territory, New South Wales (NSW), and Victoria (VIC), while South Australia (SA), Western Australia (WA), Queensland (QLD), and Tasmania (TAS) were all ranked in the Amplify Medium category. Only the Northern Territory was ranked in the Amplify Low category, reflecting recognised social and economic challenges within the territory, and once again demonstrating the digital divide that continues to define Australia's overall digital readiness.

This divide is most easily seen through comparing overall digital readiness scores, with the ACT's score of 1.4 eclipsing that of the NT on -2.01.

The most notable change since the 2020 report is a marked lift in the performance of South Australia, which jumped three positions from 7th to 4th. This was due largely to SA's improved score for **Ease of Doing Business**, where it rose from 3rd to 1st place nationally, while its score for **Technology Adoption** climbed from 7th to 4th.

Tasmania recorded the greatest fall, dropping from 5th place to 7th due primarily to a decline in its score for **Ease of Doing Business**. Tasmania retains the highest business survival rate in the country, but a massive drop in business confidence dragged its score down.

Western Australia also witnessed a slight drop this year from 4th to 5th, due partly to a fall in score for **Business & Government Investment** from 4th to 6th.

## Looking across the different components reveals both constancy and variation.

### Basic Needs

- Examination of this component shows some movement between states and territories, with NSW claiming first position from Victoria, which in turn fell to third place, while the ACT dropped from 2nd in 2020 to 6th in 2022. Despite these movements in rankings, the top seven states and territories all reported similar scores. The weakest result was posted by the NT, with a score that was more than two standard deviations from the mean result.
- While Australia ranked 7th globally for **Basic Needs**, the NT's result for infant mortality was sufficient to see Australia fall five places to 20th for this specific metric. This demonstrates the need for greater investment to bridge the inequalities felt by residents of the NT if Australia is to ever lay claim to being a digitally equitable nation.

### Business & Government Investment

- The ACT was a standout performer in the component of **Business & Government Investment**, due to Canberra being the seat of Australia's federal government and recipient of a high amount of government R&D expenditure per capita. The NT also performed well in this category and placed 3rd, due in part to it having the highest state/territory expenditure on education per Full Time Enroled student, and despite it having the lowest business research and development expenditure in the country. NSW retained 2nd place, with Tasmania rising three places to 4th, due to it experiencing the largest per capita increase in both business and government research and development expenditures in the country, by a significant margin.

# Australian State/Territory's Digital Readiness Score

● = New Metric



## Basic Needs

- Infant Mortality
- Homelessness
- Life Expectancy
- Homicides



## Business & Government Investment

- Business Expenditure on R&D
- Government Expenditure on R&D
- State/Territory Expenditure on Education



## Ease of Doing Business

- Business Survival
- Business Density
- SMB Confidence
- Recruitment Difficulty



## Human Capital

- Labor Force Participation
- Youth Population
- Population Post-school Qualifications
- Immigration (net foreign and domestic, inter-state)



## Start-up Environment

- Venture Capital Investment
- Patents + Trademarks
- New Businesses



## Technology Adoption

- Broadband Services in Operation
- Electric Vehicles
- Work from Home



## Technology Infrastructure

- EV Charging Stations
- Electricity from Renewable Sources
- Premises Ready to Connect to Fixed Broadband
- 5G Network Availability

- However, a decline in research and development spending in WA saw that state fall from 4th to 6th place, while Queensland remained in 8th place thanks to it having below average scores across all metrics in this component.
- The importance of this component to overall digital readiness should not be underestimated, with Australia's result coming in below its overall score for digital readiness. Australia ranks 18th in this component, and 19th for the specific metric of per capita research and development expenditures, suggesting that both business and government need to lift their spending to match international counterparts.

### Ease of Doing Business

- This was one component of digital readiness that showed significant movement between states and territories, with Tasmania falling from 1st to 5th place, while South Australia climbed from 3rd to 1st due to a slightly higher business survival rate from the previous report and an increase in business confidence. Conversely, Tasmania's fall can be attributed to a large drop in business confidence – a metric where it had led previously – and came despite the island state having the highest business survival rate in the country.
- This is also an area where failing to improve can lead to a decline against other nations, as despite Australia maintaining its score from the previous report, it still dropped four places for this component, from 12th to 16th. Interestingly, despite the obvious impacts of the pandemic and lockdowns, most states and territories recorded an improvement in the metric of business survival rates over four years, with only Victoria recording a modest drop from 65.2 per cent to 65.0 per cent.

### Human Capital

- This component showed only marginal movement between the states and territories. While the ACT retained its top ranking, previous 2nd place holder the Northern Territory, dropped to 4th due to it having the greatest decrease in labour force participation. Queensland also rose to 3rd position from 5th from the previous report due to better performance in this metric.
- As with previous reports, this component continued to be one of Australia's strongest areas of performance, with the country ranking 6th globally.
- This result was supported by Australia ranking 7th for the metric of education, and its rank could have been higher still were it not for its ranking of 45th for labour force participation. However, the massive reduction in skilled and education-related migration led to a steep decline in education attainment measures. The report shows the percentage of the population with a post-school qualification has dropped in every state and territory, which is likely to have consequences for future workforce capabilities. All states and territories also reported a net decline in youth population.
- The impact of reduced immigration is made clearer through further investigation, which shows a noticeable difference in the educational attainment of the population born overseas compared with those born in Australia. In all states and territories, the percentage of people with a post-school qualification is highest amongst those born overseas. Given the pandemic and its negative impact on overseas migration, overall education figures in Australia have declined as a result.

### Start-up Environment

- The impact of the pandemic can also be seen in the results for **Start-up Environment**. NSW retained first place thanks to its leadership in new business creation, venture capital investment, and patent and trademark applications, holding Victoria to 2nd place. Both states remain well clear of all other states and territories.
- However, at the global level Australia fell from 6th to 9th position, with one significant impact coming through a decline in the number of new businesses, which dropped significantly from a state and territory median of 12.3 per 1000 population to 9.1. No state or territory was immune, with Victoria reporting the sharpest drop, from 15.4 per thousand to 10.9 per thousand.

### Technology Adoption

- This component showed significant volatility compared to the previous report, with Victoria climbing from 4th to 1st place, and the ACT dropping from 1st to 3rd. NSW was also a strong performer, rising from 6th position to 2nd, with Western Australia, Tasmania, and Queensland all experiencing falls. Not surprisingly, the ACT, NSW, and Victoria all scored strongest for the metric of remote working, with all three having more than 20 per cent of businesses with staff working from home, although for many states these numbers declined over the prior two years. Australian electric vehicle penetration was also highest in the ACT, although on a global basis the 2 percent contribution the EVs make to

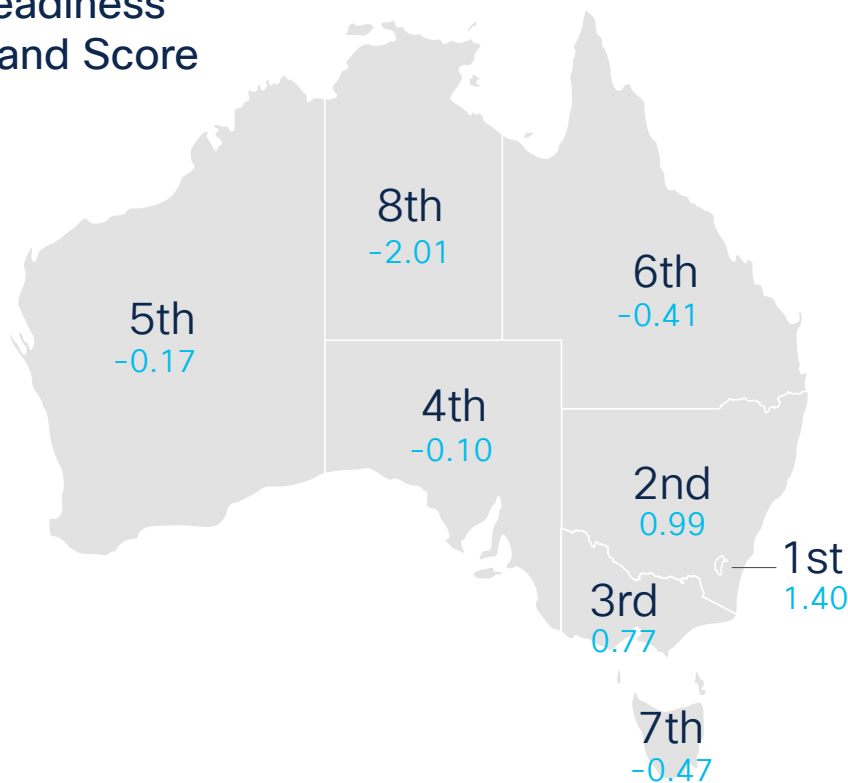
new vehicles sales is eclipsed by world leader Norway's 72 per cent.

- This overall result here partially explains Australia's overall decline in global rankings, as the nation ranked only 23rd globally for this component – a drop of three positions since the last report. Australia still ranks only 35th globally for internet usage, with the state and territory median score for broadband services in operation (as a percentage of premises ready to be connected) sitting at 69.8 per cent nationally, despite an 8.5 percentage point increase since the previous report.

### Technology Infrastructure

- For Technology Infrastructure, Tasmania's retained its first-place ranking, thanks to its investment in renewable energy infrastructure, including near-100 per cent generation of electricity from renewable sources, and it having the highest density of EV charging stations per capita. The Northern Territory, however, placed last due to below average performance in the same factors, and the state also scored poorly for 5G network availability.
- This was another component where Australia's global rank of 18th served to drag down its overall score. This was due in part to Australia only placing at 20th for fixed broadband subscriptions, indicating that despite investment in the National Broadband Network and commercial infrastructure, other nations are deploying fixed broadband at a faster rate.

## Digital Readiness Ranking and Score



# State-based analysis

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# Australian Capital Territory

## Digital readiness pioneer

For the third consecutive survey, the Australian Capital Territory retained its leading position as Australia's most digitally ready state or territory, with an overall score of 1.40. The ACT placed first for **Human Capital**, where it scored Australia's highest labour force participation rate and the highest population with a post-school qualification.

For **Business & Government Investment**, the ACT enjoyed a wide lead thanks to disproportionately high expenditure on government research and development.

The ACT also scored well for **Technology Infrastructure**, **Start-up Environment** and **Technology Adoption**, although it dropped one place to 4th for **Ease of Doing Business**.

However, the ACT fell from 2nd to 6th for **Basic Needs** due to a rise in per capita homicides, but people in the ACT also have the longest life expectancy of any Australians, at 84.0 years.

ACT ranked #1 in 2020 and #1 in 2018.

Ranking

#1

DRI Score

1.4



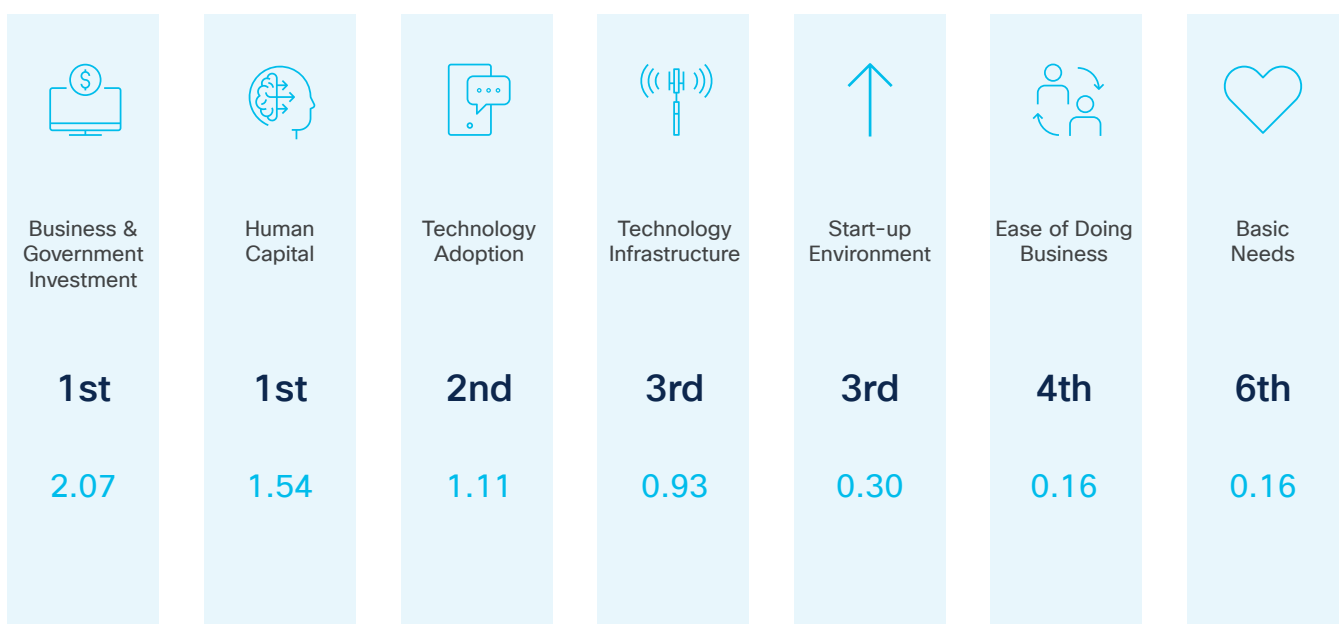
Business & Government Investment



Human Capital

## Digital Readiness Ranking – Australian Capital Territory

Components to the left are ranked higher and components on the right are on the lower side of the scale.



# New South Wales

## Innovation launch pad

New South Wales' ongoing investment in digital platforms and technologies has seen it retain 2nd place in the rankings that it achieved in 2020, where it climbed from 3rd to 2nd overtaking Victoria. NSW had the highest scores in **Basic Needs** and **Start-up Environment**, the latter reflecting the state government's commitment to growing its start-up ecosystem.

NSW jumped from 6th to 2nd in **Technology Adoption** due to having the second-highest broadband services in operation rate in the country and the second-highest increase since the last DRI in this metric—almost a 10-percentage point increase. NSW also has a relatively high percentage of its businesses with staff working from home. NSW also placed 2nd for **Business & Government Investment**, as a results of having the strongest business research and development per capita in the country.

NSW must continue to improve in **Technology Infrastructure**, where it tied 5th due to weak results for EV charging locations and renewable energy generation and **Human Capital**, where it placed 6th primarily due to low scores for labour force participation.

NSW ranked #2 in 2020 and #3 in 2018.

Ranking

#2

DRI Score

0.99



Start-up Environment



Basic Needs

## Digital Readiness Ranking – New South Wales

*Components to the left are ranked higher and components on the right are on the lower side of the scale.*





# Victoria

## Leading digital adoption

Victoria has maintained its 3rd placed ranking and now leads the nation in **Technology Adoption**, where it rose from 4th place thanks to a 10-percentage point increase in broadband services in operation and having the equal highest percentage of businesses with staff working from home at 25 per cent, compared to the national median of 8 per cent.

Victoria also placed 2nd for both **Ease of Doing Business** and **Start-up Environment**, reflecting strong business density and confidence and a thriving public and private sector start-up ecosystem.

Victoria placed 5th in **Human Capital** due to both a 0.4 percentage point decline in youth population and a 6.8 percentage point decline in the population with a post-school qualification – the greatest decline in the country, and most likely due to the pandemic-induced slowdown in immigration of foreign students and skilled workers.

VIC ranked #3 in 2020 and #2 in 2018.

Ranking

#3

DRI Score

0.77



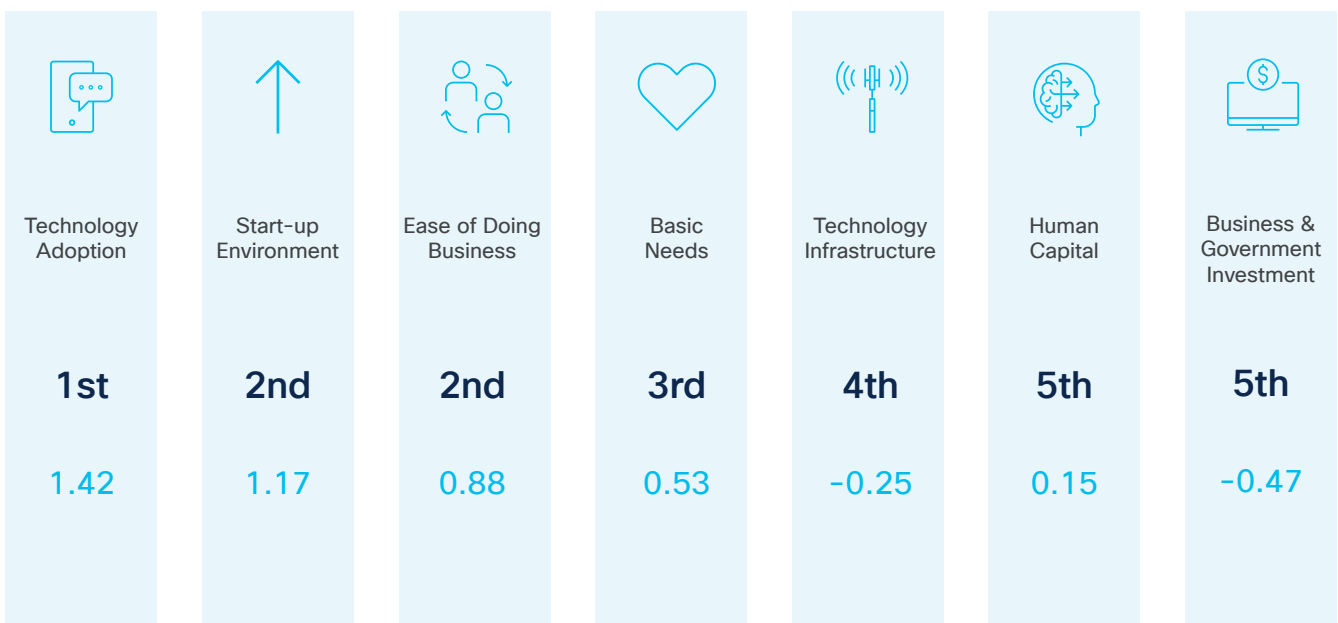
Technology Adoption



Start-Up Environment

## Digital Readiness Ranking – Victoria

Components to the left are ranked higher and components on the right are on the lower side of the scale.



# South Australia

## Foundations for digital acceleration

South Australia had the biggest improvement in the 2022 Index, rising three places to 4th position. South Australia ranked 1st for **Ease of Doing Business** thanks to a slightly improved business survival rate and an increase in business confidence, where it ranked on par with the ACT and NSW.

However, SA's results across other components were mixed. SA maintained 3rd place for **Technology Infrastructure** thanks to strong investments in EV charging locations and strong 5G network availability.

It also placed 4th for **Technology Adoption**, rising from 7th place in the previous report, thanks to a strong lift in broadband services in operation -this is despite it having the equal lowest percentage of businesses with staff working from home.

Where South Australia faced challenges, however, was in **Business & Government Investment**, where it placed 7th due to declining levels of investment from public and private sectors, an area that presents an opportunity. South Australia ranked at the bottom for **Human Capital**, due to having the lowest percentage of population with a post-school qualification which fell by 3.2 percentage points, which may be related to the impact of the pandemic.

SA ranked #7 in 2020 and #6 in 2018.

Ranking

#4

DRI Score

-0.10



Ease of Doing Business



Technology Infrastructure

## Digital Readiness Ranking – South Australia

Components to the left are ranked higher and components on the right are on the lower side of the scale.



# Western Australia

## Tapping into human potential

Western Australia dropped one place to 5th position but scored highly for **Basic Needs** at 2nd place, which is a significant improvement on its 6th placing in the previous report.

Improvements included reduced levels of homelessness and infant mortality and improved life high expectancy.

WA also placed 2nd for **Human Capital**, where it rose one place thanks to strong labour force participation and a high youth population rate.

WA has an opportunity to build on these two high rankings to advance up the digital readiness index rankings by improving **Business & Government Investment**, where it dropped from 4th to 6th place and reported the lowest level of government research and development at \$91 per capita. This contrasted with business research and development which was the third highest nationally at \$523 per capita.

WA ranked #4 in 2020 and #4 in 2018.

Ranking

#5

DRI Score

-0.17



Basic Needs



Human Capital

## Digital Readiness Ranking – Western Australia

Components to the left are ranked higher and components on the right are on the lower side of the scale.



# Queensland

## Poised for digital growth

Queensland retained 6th place built on being 3rd for **Human Capital**, where it rose from 5th position due to a 4.4 percentage point gain in labour force participation. Queensland benefited from changes in Australian migration patterns arising from the pandemic, as it recorded the greatest single lift in net overseas and domestic migration of 4.6 per cent.

Queensland placed 4th for both **Basic Needs**, due to its low levels of homelessness and for **Start-Up Environment**, where it performed well in new business creation, patent and trademark applications and venture capital investment.

Queensland can improve in **Business & Government Investment**, where it ranked last due to low business and government spending on research and development and comparatively low spending on education. The competitive nature of digital readiness was also demonstrated by Queensland's score for **Technology Infrastructure**, where it dropped from 5th to 7th despite significant increases in all metrics.

QLD ranked #6 in 2020 and #5 in 2018.

Ranking

#6

DRI Score

-0.41



Human Capital



Basic Needs

## Digital Readiness Ranking – Queensland

Components to the left are ranked higher and components on the right are on the lower side of the scale.



# Tasmania

## Australia's renewables leader

Tasmania fell two positions to 7th in the rankings despite leading in **Technology Infrastructure**, a result that was boosted by strong investment in renewable energy, and by its nation-leading investment in EV charging stations.

Tasmania also reported a strong improvement in **Business & Government Investment**, where it rose three places to 4th, thanks to high levels of both business and government investment in research and development.

The island state's overall fall can be attributed to a significant decline in **Ease of Doing Business**, where it fell from 1st to 5th, due to a significant decline in business confidence.

Despite this, Tasmania had the strongest business survival rate in the country.

TAS ranked #5 in 2020 and #7 in 2018.

Ranking

#7

DRI Score

-0.47



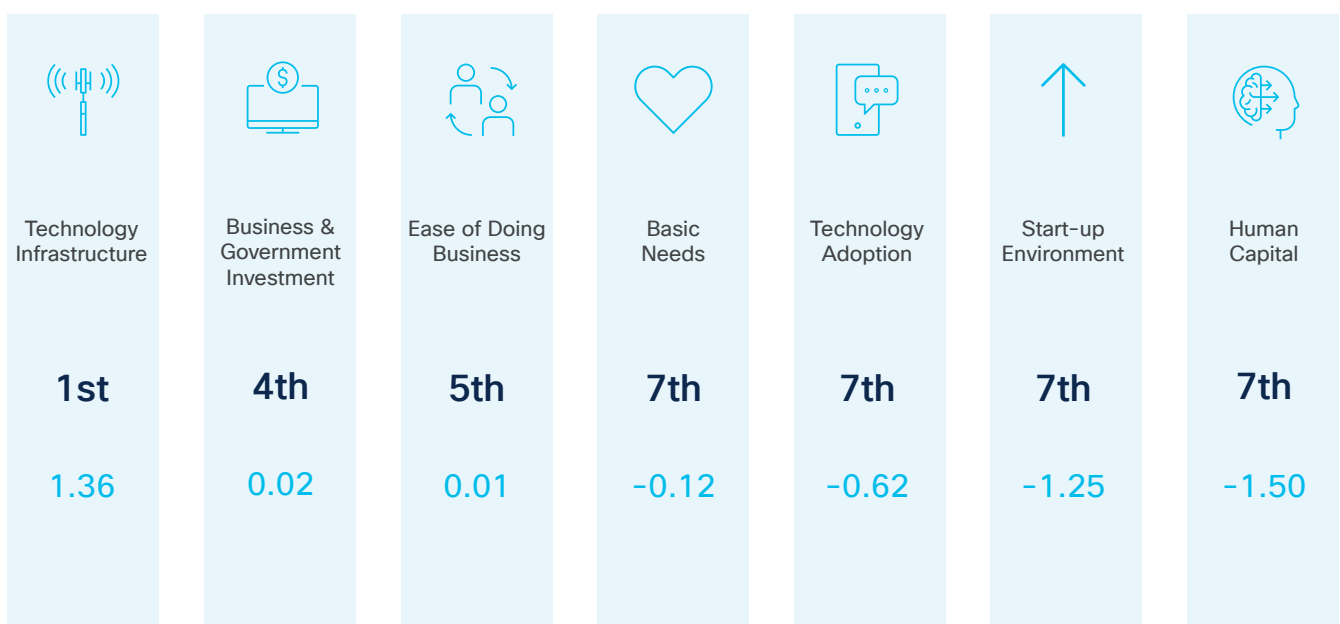
Technology Infrastructure



Business & Government Investment

## Digital Readiness Ranking – Tasmania

Components to the left are ranked higher and components on the right are on the lower side of the scale.



# Northern Territory

Ranking

#8

DRI Score

-2.01



Business & Government Investment



Human Capital

## Investing in a digital future

The Northern Territory continued to lag behind other states and territories in 8th place. The NT's strongest result was for **Business & Government Investment** where it placed 3rd with the highest individual expenditure on education per full-time student.

These results might have been stronger had it not had the lowest result for business research and development investment.

While previously the NT has scored well for **Human Capital**, due to its young population, it dropped two places from 2nd to 4th due in part to a 4.3 percentage point fall in labour force participation. Australia's largest single net loss of any state or territory in overseas and domestic migration of 5.3 per cent did not help.

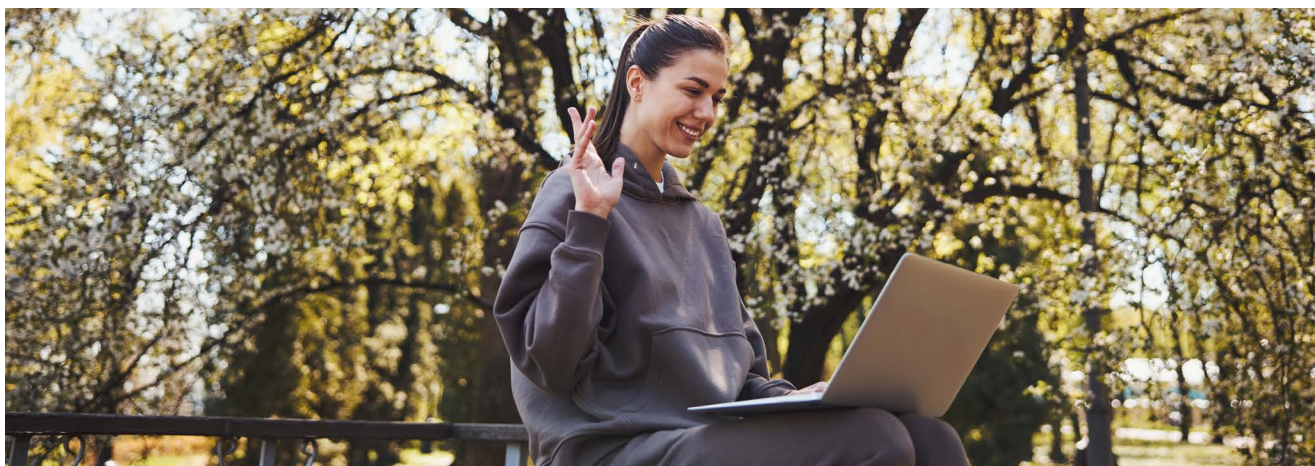
The NT ranked last across the five other digital readiness components. The most prominent of these areas is reflected in its score for **Basic Needs**, where the NT was an outlier in comparison to all other states and territories due to poor scores in the metrics of infant mortality, homicides, homelessness and life expectancy.

NT ranked #8 in 2020 and #8 in 2018.

## Digital Readiness Ranking – Northern Territory

*Components to the left are ranked higher and components on the right are on the lower side of the scale.*





# Conclusion

## Resilient, sustainable, equitable – our digital readiness opportunity

Digital readiness is a race – one where simply maintaining investment levels can still see one nation, state, or territory overtaken by its peers. As more countries come to appreciate the positive impacts that digital readiness brings to its business community and society, the competition for digital leadership will heat up accordingly.

For Australia, the pandemic delivered an unprecedented shift in attitudes towards digital investment, as numerous sectors depended on digital services to remain operational. The need to respond rapidly led to a flurry of investment in digital initiatives, the value of which were often demonstrated immediately, and these investments will also continue to bear fruit over the long term.

But it is important that we build on this moment. As we move through the post-pandemic period, Australia has an opportunity to continue strengthening its economic and social fabric through targeted investments and interventions that further boost digital readiness. While Australia already performs well in **Human Capital**, **Basic Needs**, and **Start-up Environment**, those advantages should be translated into gains in other areas. Despite perceptions of Australia as being a technologically-advanced economy, weak performance in **Technology Infrastructure** and **Technology Adoption** suggests that on a global scale the definitions of an advanced economy are evolving swiftly.

One way to have impact across all categories is to uplift **Business & Government Investment**, including direct investment in skills development, to ensure that Australia has the talented workforce needed to build and secure a digitally competitive future. Reopening the borders to skilled and student migration will go some way towards alleviating these challenges but must be accompanied by

targeted interventions that can deliver the capability needed for Australia to be both a smart creator and consumer of advanced technology.

And critically, focus must be given to uplifting the digital readiness of the Northern Territory, starting with investments supporting **Basic Needs**, to bring the NT in line with the rest of the country. The ongoing divide between the NT and other states and territories is an area of immediate concern and one that must be rectified if Australia is to truly claim its place as a digitally ready nation.

While it is always difficult to predict the future, one forecast that can be made with certainty is that the digital skills and infrastructure required by Australia today will be insufficient for the challenges and opportunities that lie ahead. Hence, it is critical that public and private sector organisations invest now to create capabilities that will satisfy the needs of tomorrow. Because if we don't, we can be certain that other nations will, which will only see Australia slip further down the rankings.

By highlighting the areas of deficiency and opportunity in Australia's digital readiness, we hope we have provided a guide to where the greatest challenges lie, and to have shone light on where the most effective interventions can be made. By doing so we hope to give confidence to public and private sector organisations regarding where they can invest with impact.

In a globally competitive market, we truly need everyone pulling together to achieve the outcomes we seek, and to ensure that we are setting future generations on the right path for a healthy and prosperous future.

# Country Impact Plan

At Cisco we are playing an active role in building digital capability within Australian organisations and society through our Country Impact Plan (CIP). Its three pillars of Human Capital, Healthy Communities, and Digital Economy are designed to support capability building in various areas of digital readiness by providing a skilled workforce that can build sustainable economic growth. Each pillar aligns to national priorities and is delivered through a combination of investments and partnerships with education institutions, and is supported by investment from Cisco's Country Digital Acceleration program of \$61million over three years.

Key components of our CIP relate to creating an industry-ready workforce, including the Cisco Networking Academy, which is celebrating its 25th anniversary this year. This program operates from over 100 sites and has trained more than 230,000 Australians in industry-recognised certifications, with various

internships awarded each year. This initiative also now includes a Skills for All program, designed to offer entry-level training to people considering a career in technology, and a program to provide training to people with disabilities.

The CIP also encompasses our commitment to sustainability, including Cisco's global commitment to purchasing 85 per cent of global electricity from renewable sources in 2022, and to reach net zero GHG across all scopes of emissions by 2040.

Finally, the CIP also encompasses a series of research and development partnerships with Australian higher education institutions through our **National Industry Innovation Network**.





# National Industry Innovation Network

As part of Cisco's commitment to raising the digital readiness of Australia, we have engaged in numerous initiatives designed to lift digital capabilities. Prominent amongst these is the National Industry Innovation Network (NIIN), which consists of a series of nationally significant projects designed to impact the economy in areas including education, digital health, hybrid work, and securing critical infrastructure.

The NIIN is delivered through numerous specific projects and activities based on a series of partnerships, creating an alliance with industry and higher education institutions. These include the creation of Research Chairs at universities around Australia that promote research and understanding in topics that are critical to Australia's digital readiness. The NIIN also supports a network of Innovation Central facilities which are focused on partnering with industry and other groups to drive practical outcomes from the use of advanced digital

technologies in industries including cyber security, defence, health, manufacturing, resources, retail, and transport. We are also supporting four specialised centres of learning in partnership with universities where researchers and industry can pursue specific goals.

NIIN programs align with the findings of the Digital Readiness Index, and represent targeted interventions designed to drive uplift in areas such as Human Capital and Technology Adoption. We encourage any individual or organisation to speak with us regarding new partnering opportunities that can be created through the NIIN model.





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