



The Transformation Link: Driving Adoption of Critical Technologies in South Australia to Create Economic Value

Prepared by Innovation Central Adelaide and Cisco



Innovation
Central Adelaide

A collaboration led by  cisco

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NIIN
National Industry
Innovation Network



Foreword

In every generation there are moments when technology reshapes the foundations of prosperity. For South Australia, this is one of those moments. The pace and depth of digital transformation across our industries, government and communities are determining not only how we work, but where our future economic advantage will lie.

Our challenge is no longer invention. It is adoption. The ability to integrate new technologies into the systems that power our economy – for example, our hospitals, factories, supply chains and classrooms – will define our competitiveness for decades to come. Those who move first will set the standards, attract the talent and capture the value. Those who move slowly risk being defined by decisions made elsewhere.

Flinders University has long recognised that the future of innovation lies in collaboration. Our partnership with Cisco, and our role within the National Industry Innovation Network (NIIN), were founded on a shared belief that translating ideas into real-world outcomes requires a fundamentally different model – one that connects global research capability with the practical needs of industry and government.

Together, we have built that model here in South Australia. It now extends from early-stage ideation and rapid prototyping, through to workforce development and applied industry deployment. It reaches across sectors as diverse as health, defence and manufacturing, supported by a growing ecosystem of partners who see South Australia as a proving ground for what technology can make possible.

The experience of this partnership has revealed three imperatives for South Australia to lead in critical technology adoption:

- 1. Position South Australia as the national testbed for adoption.** Create the conditions for technologies to be trialled, validated and scaled within industry and government settings, reducing risk and building momentum for deployment.
- 2. Provide industry with access to the skills and technologies to adopt at scale.** Build applied capability within our priority sectors, ensuring that businesses large and small can participate in the transformation ahead.

3. Create the future workforce pipeline.

Develop the next generation of technologists, engineers and practitioners who can embed innovation directly into the systems that shape our economy and society.

Achieving this will require shared commitment. Universities cannot do it alone, nor can government or industry in isolation. Progress will depend on aligning the strengths of the entire ecosystem – our research institutions, anchor companies, start-ups, schools and public agencies – around the common goal of accelerating adoption and translating innovation into measurable public value.

Flinders University, together with Cisco and the NIIN, is ready to play its part in convening that collaboration. We invite South Australia's government, industry and community leaders to join us in building the nation's testbed for adoption. Together, we can ensure that the technologies of tomorrow are developed, deployed and scaled here – creating a more connected, competitive and resilient South Australia.



Professor Colin Stirling

President and Vice-Chancellor
Flinders University

Foreword

Building on the Vice-Chancellor's call to position South Australia as the nation's testbed for adoption, a strong research agenda will convert ambition into measurable public value. Adoption at scale, the development of applied capability, and the creation of a future-ready workforce are necessary—and they depend on a sustained, collaborative research effort that is ethical, evidence-led, and translational by design.

Echoing the preceding reflections on trust, empathy, and critical thinking, our research mission is to ensure that technological progress aligns with societal values, preserves sovereignty, and expands equitable access. This requires transdisciplinary programs that integrate engineering, health sciences, social science, policy, law, and economics; governance models that embed transparency and accountability; and a pipeline that moves seamlessly from discovery to prototyping, validation, and deployment within real-world settings.

To that end, we commit to three collaborative research priorities through Flinders' Innovation Central Adelaide:

1. Health and Wellbeing

Co-design of trustworthy, human-centred digital health platforms that improve outcomes and equity. Living laboratories within hospitals and community health services will enable rigorous evaluation, rapid iteration, and ethical oversight.

2. Economic Resilience and Productivity

Advance of sovereign, cyber-secure, and data-driven systems across industries through research in sensing, automation, and AI-assisted decision-making, tested in industrial environments to accelerate adoption and standards-setting.

3. A Just Digital Future

Development of frameworks for digital inclusion, data governance, and algorithmic accountability that protect rights, expand participation, counter misinformation and strengthen digital literacy—particularly for underserved communities.

Delivering these outcomes requires a whole-of-ecosystem approach.

Flinders University, together with Cisco and the National Industry Innovation Network (NIIN), will convene and sustain this collaboration—linking global research capability to South Australia's practical needs and proving grounds.

We invite partners across sectors to join us in co-investing in programs, testbeds, and talent pipelines that demonstrate adoption at scale. Through collaborative research, we can ensure that the technologies of tomorrow are validated here, delivering better health outcomes, a more productive and resilient economy, and a digital future that is fair, inclusive, and human-centred.



Professor Ray Chan

Deputy-Vice-Chancellor: Research,
Flinders University

1. Why Critical Technologies Matter to South Australia's Future

Critical technologies have become an economic battleground

Around the world, governments are no longer treating critical technologies as long-term research interests. They are competing directly to adopt and embed them at scale, knowing that the jurisdictions that move fastest in deployment secure the greatest share of talent, investment and influence. Competition for leadership in critical technology is intensifying. Nations and states that are early adopters are capturing disproportionate benefits, including attracting high-value firms to establish private capital and skilled workers. By contrast, jurisdictions that remain focused only on pure research risk becoming consumers of technologies developed and applied elsewhere.

This is borne out by jurisdictions such as Singapore, Germany, and South Korea, which have prioritised rapid adoption of technology and consistently outperform their peers in terms of economic uplift. Research by the Information Technology and Innovation Foundation (ITIF) has shown that “digital-first” economies, that embed technologies deeply into their industrial base, achieve above-average gains in productivity and growth.¹

South Australia risks falling behind unless it finds its critical technology niche

The global technology landscape is shifting at unprecedented speed. Artificial intelligence, quantum computing, cybersecurity, and advanced networks are no longer on the horizon — they are accelerating into mainstream adoption faster than any previous wave of new technologies.

Artificial intelligence is a stark example of the opportunity, and the pace at which adoption and development is accelerating. AI is forecast to contribute A\$115 billion a year to the Australian economy by 2030, or around A\$3,925 per person.²

Most of this value (A\$80 billion) will come from productivity improvements, supported by better output quality (A\$25 billion), the creation of new businesses (A\$6 billion), and creation of new jobs (A\$4 billion).

However, there are worrying signs that Australia – and by virtue of extension, South Australia – is falling behind in terms of capturing value from critical technologies. For example, Cisco's 2024 AI Readiness Index highlights that only 4% of Australian businesses are considered AI "Pacesetters" – organisations leading in AI adoption – compared to 13% of businesses globally. Australia also has a significantly higher proportion of AI "Followers" (63%) compared to the global average (51%).³ Turning this around is essential. Nations and states that are early movers gain disproportionate advantages, as they attract and retain top talent, secure investment flows, shape standards and regulations, and establish defensible positions in global markets.

South Australia can and should be a leader in adoption of critical technologies

South Australia is well placed to lead the nation in the adoption of critical technologies. The State has already established strong industry clusters in defence, space, health, resources, and advanced manufacturing, and these provide fertile ground for embedding new technologies quickly and at scale. By aligning government procurement, precinct infrastructure and university capability with real industry use cases, South Australia can position itself as the national testbed for adoption. In doing so, South Australia can secure a distinctive role within the national innovation system, while building an international reputation as a jurisdiction that translates research excellence into tangible economic and social outcomes.

2. South Australia has an obvious competitive advantage: driving adoption at scale

South Australia has a natural advantage in pursuing a path of leadership. The State's economic strategy is concentrated around priority industries (mining and minerals processing, defence and space, international education, and renewables, fuels and cleantech),⁴ extending existing anchor strengths in health, advanced manufacturing, and clean agriculture. All are highly dependent on the integration of new technologies for future competitiveness.

Unlike larger jurisdictions that spread their resources across a wide range of research domains, South Australia's scale and industry profile enable it to focus its efforts and act as a national proving ground. This means the State is well placed to move quickly from pilot projects to system-wide adoption, building a reputation as the place where critical technologies are translated into practical economic outcomes, without needing to outspend larger jurisdictions on research.

Driving adoption at scale requires a coordinated effort across three areas:

① Positioning South Australia as the national testbed state

South Australia can brand itself as the jurisdiction where new technologies are trialled, validated, and scaled into practice. This includes not only commercial adoption but also deployment to solve government challenges. This positioning sets the State apart nationally, making it the place where critical technologies are proven before being rolled out more broadly.

② Driving industry adoption at scale

The greatest economic value will come from embedding critical technologies across South Australia's existing anchor industries, where South Australia has a strong profile and where global peers are moving rapidly, and by leveraging critical technologies to advance capability in areas of emerging strength. By establishing structured adoption programs in fields like AI, cybersecurity, robotics, and quantum, South Australia can accelerate uptake in these sectors and position itself at the forefront of applied innovation.

③ Building the workforce pipeline

Sustained adoption depends on a skilled and adaptable workforce. South Australia can lead nationally by building a dual pipeline: cultivating specialist expertise in frontier domains such as cybersecurity, robotics, and quantum, while also investing in vocational "blue tech" skills⁵ that allow these technologies to be deployed and maintained at scale. This means training engineers, technicians, and operators who can embed advanced technologies directly into applied settings such as factories, hospitals, and infrastructure networks.

A partnership between Flinders, Cisco and the NIIN is a major advantage for South Australia

Realising South Australia's ambition to be a testbed requires practical mechanisms that connect government priorities, industry needs, and university capability. Flinders University and Cisco provide such a mechanism through their long-standing partnership, now formalised within the National Industry Innovation Network (NIIN).

The NIIN is Australia's largest industry–university innovation network. Unlike traditional Research and Development (R&D) models – often weighted

towards theoretical knowledge generation – the NIIN model prioritises Innovation and Development (I&D), focusing explicitly on translating ideas into practical, commercially viable industry applications. The model's distinctive approach ensures a strong alignment between university expertise and industry-driven challenges.

The NIIN has already demonstrated impact at a national level, with 250+ projects delivered, \$550 million in funding attracted, 150+ collaborators engaged, and 300+ students mobilised across Australia since 2020.

South Australia has a privileged position in this network, anchored by a multi-faceted partnership between Flinders University and Cisco.

Within South Australia, this partnership brings together several distinctive capabilities:

1 Industry partnerships at the global and local levels

The Flinders–Cisco partnership is anchored in an industry-driven network. Through the NIIN, more than 250 industry partners are engaged nationally, providing South Australia with direct access to global firms and local anchors in defence, health, space and advanced manufacturing. Unlike research-first collaborations, these partnerships are structured around solving real industry challenges, bringing live use cases, investment and pathways to deployment. This ensures that South Australia's testbeds are connected to immediate commercial opportunities and positioned for adoption at scale.

2 Innovation Central Adelaide

A technology-rich facility where researchers, students, and industry partners co-design, prototype, and test solutions in a way that significantly lowers the cost of experimentation for SMEs, the services and utilities sectors, government, and large enterprise. ICA offers connection to market-leading technology knowledge and a network of experts across Australia, and beyond.

3 Research Chair Program

Senior academic roles established with industry to focus directly on applied problems. In South Australia, this program is anchored by a Research Chair in Digital Health (Flinders University) with plans for two more Research Chairs in South Australia to focus on key emerging industries, and to align with national and state critical technologies frameworks.

4 Industry Alumni Program

Former senior industry leaders are embedded as Professors of Practice inside universities. Industry alumni act as translators between academia and industry, ensuring projects address real commercial opportunities, guiding researchers on practical pathways, and mentoring students. The Chair of the Industry Alumni Program is based in Adelaide.

5 Skills and Talent Development

A suite of skills and talent development programs including the Cisco Networking Academy – one of the world's largest and most established digital skills programs, providing industry-recognised training in areas such as networking, cybersecurity, and AI. Flinders University has a major footprint in the academy program, giving South Australian students and workers direct pathways into critical technology jobs and certifications aligned with industry demand.

6 Alliances in Cyber Security and Health

The Alliances leverage extensive resources and expertise, including specialised technology centres, research, and partnerships, to promote collaboration around national challenges in the health and cybersecurity domains. The Chair of the Cyber Alliance is based in Adelaide, as is the Cisco Research Chair in Digital Health.

How the partnership creates value for South Australia

There are a number of specific ways that the partnership between Cisco, Flinders and the NIIN can create value for South Australia, particularly aligning with the Government's catalysing role:

- ✓ Lower the cost and risk for industry of experimenting with critical technologies by offering industry and government a low-risk environment to trial technologies.
- ✓ Bridge the research-translation gap by extending academic capability towards solving industry problems.

- ✓ Create better linkages to global innovation flows and get earlier access to next-generation technology through Cisco (which spends US\$7B+ annually on R&D and is establishing new labs in critical technologies, including a new Quantum Networking Lab in Queensland and plans for a new critical technologies lab in South Australia).
- ✓ Develop the workforce of the future through dedicated programs and connecting talent to frontier expertise embedded within the NIIN.

The NIIN Ecosystem – an international network



Case Study: Digital Health Design Lab

The \$1.5 million Digital Health Design Lab at Flinders University is a national testbed for technology-enabled healthcare. Jointly established by Flinders and Cisco, and led by Professor Trish Williams, it brings together clinicians, technologists and researchers to co-design and trial digital solutions that improve safety, efficiency and patient experience.

The Lab focuses on re-engineering the digital backbone of healthcare—developing standards for safe hospital wireless systems, benchmarking digital infrastructure maturity, and applying IoT to support wellbeing and clinical monitoring. Each project demonstrates how digital design can deliver measurable improvements to care quality, reduce operational risk, and create new models of service delivery.

By connecting industry and healthcare providers around shared challenges, the Lab is helping South Australia lead the national adoption of digital health technologies and build the foundations for a more connected, data-driven health system.



Prof Trish Williams
NIIN Research Chair
in Digital Health

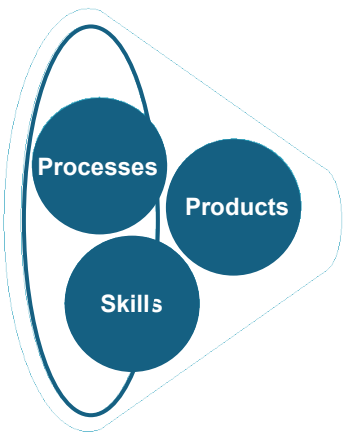
Case Study: Innovation Central Adelaide

Innovation Central Adelaide (ICA) is one of seven Innovation Centrals within the Asia-Pacific region, designed to accelerate how industry adopts and scales digital technologies. ICA gives South Australia an early-mover advantage in testing, validating and scaling emerging technologies such as AI, IoT, cyber security and advanced networks. It provides industry with a low-risk environment to prototype solutions, access global expertise, and connect into Cisco's \$7B global R&D ecosystem.

Beyond technology, ICA builds capability. It embeds students and researchers into real projects with companies, developing industry-ready graduates while giving business direct

access to new talent. Through this model, ICA lowers the cost of experimentation, strengthens South Australia's position as a national testbed for critical technology adoption, and demonstrates how industry, universities and government can work together to build a more connected and competitive economy.

Sustaining and expanding ICA's impact will require a long-term commitment to its physical space, resourcing model and programs. Flinders University and Cisco are committed to maintaining ICA as a shared innovation platform for South Australia and see strong potential for partnership with the South Australian Government to secure its future.

Industry problems	ICA services	Value to industry
	Early-stage ideation	New ideas and insights Quick answers on feasibility and potential
	Practical Advice	Access to technology expertise that can't be afforded in-house Clear plan for developing and testing solutions
	Rapid prototyping	Cost-effective innovation Faster validation of solutions De-risked production issues
	Scaling and adoption support	De-risked testing of solutions Faster, more reliable solution rollouts



3. A roadmap for action: where South Australia needs to focus

1 Make South Australia a testbed for rapid adoption of critical technologies

South Australia's pathway to leadership in critical technologies is not to outspend larger states on research, but to define itself as the national proving ground — the place where technologies are applied, validated, and scaled in real-world settings.

Why it matters

- ✓ **Early adopters shape the market.** Jurisdictions that become testbeds set standards, attract global investment, and influence supply chains. They do not wait for technologies to mature—they create the conditions for adoption and scale.
- ✓ **Government's role as first adopter is catalytic.** By embedding critical technologies into its own systems, the South Australian Government can simultaneously improve service delivery and reduce risk for industry adoption. Local governments, likewise, can lead the way etc
- ✓ **Proof of concepts accelerate diffusion.** International examples such as Singapore's Smart Nation and Europe's Horizon program show that innovation diffuses fastest where governments back testbeds that demonstrate tangible outcomes.

How to realise the opportunity

- ✓ Innovation Central Adelaide, the Digital Health Research Chair, forthcoming Critical Technologies Chair, and our Industry Alumni network provide a whole-of-state delivery mechanism. These assets should be empowered to drive rapid prototyping, translation, and scale-up—accelerating the adoption of critical technologies across sectors.
- ✓ **Link into national and global networks.** Through the NIIN, South Australia is already plugged into six other Innovation Centrals and specialist centres. This connection, together with Cisco's US\$7B+ annual R&D and global labs in AI and quantum, ensures South Australia has early visibility of emerging technologies and can position itself as the proving ground for national and international partners.
- ✓ **Leverage the Government as a lead adopter.** Deploy critical technologies within state systems to demonstrate benefits and reduce risk for private sector uptake. Innovation Central Adelaide, working alongside NIIN Research Chairs, provides a ready-made capability to prototype and validate solutions for government challenges before they are scaled.

Provide industry with access to skills and tech to adopt at scale

South Australia's economic payoff from critical technologies will not come solely from invention or infrastructure – it will come from adoption, integration, and the ability to scale innovation across sectors in ways that are inclusive, sovereign, and strategically aligned.

Why it matters

- ✓ **Adoption determines competitiveness.** Regions that move fastest to integrate new technologies into industry operations consistently outperform their peers in investment attraction, supply chain resilience, and export performance.
- ✓ **Anchor industries face immediate pressure.** Critical technologies are already reshaping defence, space, health, and advanced manufacturing. Without accelerated adoption, South Australia risks ceding ground to international competitors.
- ✓ **Programmatic adoption works.** International examples, such as Germany's Industrie 4.0 and Singapore's National AI Strategy, demonstrate that structured adoption programs — combining government incentives, testbeds, and workforce development — create system-wide impact rather than isolated pilots.

How to realise the opportunity

- ✓ **Develop structured adoption programs in priority domains.** Establish coordinated programs in areas such as cybersecurity, quantum, and IoT that integrate across firms and supply chains. Initiatives such as the NIIN Cyber Alliance can convene industry and work together with academia to design and deliver programs.
- ✓ **Deploy Flinders' applied capability into anchor industries.** Flinders' strengths in health, defence, and manufacturing can be channelled into industry roadmaps that show firms how to integrate their critical technologies into operations — from robotics in Tonsley's Factory of the Future, to digital health in hospitals, to IoT-enabled monitoring in maritime industries.
- ✓ **Showcase adoption through flagship projects.** Demonstrator projects provide tangible evidence that technologies can be effectively embedded at scale. South Australia could, for example, apply quantum sensing in shipbuilding navigation, better secure manufacturing supply chains, or implement IoT-driven logistics in agriculture.

Technology adoption will only succeed if South Australia has the people to design, deploy, and operate it. The State cannot rely solely on importing talent. It needs to grow its own workforce, spanning both high-end specialist expertise and the vocational skills necessary to integrate technologies across industry.

Why it matters

- ✓ **Skills shortages are acute.** Australia is expected to face a 30,000-person shortfall in cyber professionals by 2026, alongside similar shortages in AI, robotics, and quantum engineering.⁶
- ✓ **Anchor industries require both specialists and operators.** Defence needs cyber engineers and quantum specialists, as well as technicians capable of maintaining digital systems. Health needs computational scientists as well as nurses trained in digital health tools. Advanced manufacturing requires robotics engineers and “blue tech” operators on the factory floor.
- ✓ **Integrated workforce strategies matter.** International examples such as Singapore’s TechSkills Accelerator and Germany’s dual vocational training model demonstrate that building adoption capacity depends on integrating tertiary education, vocational training, and industry placements.

How to realise the opportunity

- ✓ **Develop a future-ready workforce model.** Align education and training systems with the skills needed for technology-enabled industries. This includes co-designed micro-credentials, applied learning programs, and pathways that connect vocational, technical, and research capabilities to emerging roles across critical sectors.
- ✓ **Strengthen collaboration between industry and universities.** Establish joint innovation environments—such as sandboxes, testbeds, and applied research labs—where industry and researchers co-develop, trial, and scale solutions. These collaborations accelerate innovation, build sovereign capability, and ensure training programs are informed by real-world needs.
- ✓ **Promote inclusive participation and equitable access.** Ensure all South Australians can benefit from technological transformation by investing in accessible training and regional delivery models. Embedding diversity, equity, and community participation in workforce planning will help broaden the talent pipeline and strengthen resilience across industries.

4. Opportunities in specific technology domains



Artificial Intelligence

AI is a major productivity and growth lever for South Australia. It is forecast to add A\$115 billion to Australia's economy by 2030. Most value will come from productivity and quality gains. Australia currently trails global leaders in AI readiness. Only 4% of Australian organisations are considered "pacesetters" compared with 13% globally. This strengthens the case for South Australia to focus on fast, applied adoption across key sectors such as defence, health and advanced manufacturing.

Key facts

- ✓ \$115 billion potential annual contribution to Australia's GDP by 2030.⁷
- ✓ Across Australia's economy, gen AI can automate 22% of task-hours and augment another 22% as a "copilot," lifting output and quality.⁸
- ✓ Healthcare alone could capture ~A\$13b per year by 2030 if Australia accelerates responsible gen AI adoption.⁹

What the Flinders / Cisco / NIIN partnership brings

Evidence to guide adoption. Cisco's AI Readiness Index benchmarks South Australia against global leaders, providing government and industry a clear picture of adoption gaps and areas where uplift is required.

Skills aligned to industry needs. The Cisco Networking Academy delivers cybersecurity, AI and digital skills recognised by employers. It provides a scalable way to grow South Australia's AI workforce.

Demonstrators in health. The Cisco–Flinders Digital Health Design Lab applies AI in clinical workflows, providing local examples of adoption that can be adapted and scaled across the health system.

Testbed environment. Innovation Central Adelaide is a facility where industry and government can co-design and prototype AI solutions in a controlled setting. This reduces the cost and risk of experimentation and accelerates the transition to full-scale deployment.

Talent pathways. Flinders' AI-focused degree programs align research and teaching with industry demand, ensuring graduates are equipped to deliver adoption-ready skills into priority sectors.

Mechanisms for scaling adoption. NIIN connects these assets into a national network with over 250 projects delivered and A\$550 million in funding leveraged. For South Australia, this means access to proven adoption programs and integration with Cisco's global R&D pipeline.



Cybersecurity

Cybersecurity is a sector in its own right and a critical enabler for South Australia's industries. Cyber incidents already cost Australia more than A\$30 billion annually.¹⁰ Without strong protection, the digital transformation of priority sectors cannot succeed. The opportunity for South Australia is to embed cyber resilience into every layer of its economy.

Key facts

- ✓ In FY2023–24, Australia logged over 87,000 cybercrime reports. That is about one every six minutes. The average cost per small business report was A\$49,600.¹¹
- ✓ Australia faces a shortage of around 30,000 cyber professionals, highlighting strong demand for skills and training pathways.¹²
- ✓ Australia's cybersecurity market is projected to reach US\$13.3 billion by 2030 at a 14.9% CAGR from 2025.¹³

What the Flinders / Cisco / NIIN partnership brings

Workforce development at scale. The Cisco Networking Academy delivers industry-recognised cybersecurity credentials, creating a steady pipeline of skilled professionals to address the national shortfall of 30,000 roles.

Hands-on capability for industry. The Australian Cyber Collaboration Centre (Aus3C) at Lot Fourteen is the nation's largest commercial cyber range. Cisco is an anchor partner, providing South Australia with a facility for testing, training and simulating real-world cyber incidents.

Access to global threat intelligence. Cisco Talos provides one of the world's largest sources of cyber threat intelligence. This capability allows South Australian organisations to benchmark and strengthen their defences using global data and insights.

Applied adoption programs. The NIIN Cyber Security Alliance brings together researchers, industry and government to co-design solutions to national challenges such as protecting infrastructure and securing supply chains.



Quantum Technologies

Quantum technologies are moving from research to early deployment, with direct relevance for South Australia's strengths in defence, mining and health. Applications such as quantum sensing for navigation and resource exploration, quantum timing for defence, and quantum diagnostics in health are already showing transformative potential.

Key facts

- ✓ Australia's quantum industry is projected to be worth A\$5.9 billion and directly employ ~19,400 people by 2045. Adoption across the wider economy could create 35,000+ jobs.¹⁴

What the Flinders / Cisco / NIIN partnership brings

Direct line to global quantum leadership. Cisco's head of quantum research is a former NIIN Research Chair. This creates a live bridge between South Australian capabilities and Cisco's global quantum program.

Access to world-class R&D and facilities. Cisco invests heavily in frontier networking and quantum, including through labs in the US and a planned lab in Queensland. This provides South Australian partners with early access to tooling, architectures and test results.



Industrial Internet of Things (IIoT)

IIoT connects machines, sensors and data systems across industries, creating new productivity gains and smarter operations. For South Australia, this is central to increasing manufacturing from 6% to 10% of the state's economy and modernising key sectors such as mining and agriculture.¹⁵ The value lies not in technology alone, but in accelerating adoption so that local firms, including SMEs, can implement smart factories, predictive maintenance, and automation at scale.

Key facts

- ✓ Across five industries that make up 25% of Australia's GDP (construction, manufacturing, healthcare, mining, agriculture), IIoT could deliver A\$194–308 billion in benefits over 8–18 years, driven by efficiency and new revenue.¹⁶

What the Flinders / Cisco / NIIN partnership brings

Industry-ready skills. The Cisco Networking Academy offers credentials in IoT and digital systems, building a workforce that can implement and maintain IIoT solutions across factories, farms, and mines.

Applied prototyping in Adelaide. Innovation Central Adelaide provides facilities and expertise for co-designing and trialling IoT solutions. This lowers barriers for SMEs and government agencies to experiment and validate before investing in large-scale rollouts.

Rapid adoption testbed. Tonsley Innovation District functions as a real-world proving ground for IIoT. With advanced manufacturing, mining tech and energy companies located on site, it offers South Australia a visible example of connected industry in practice.



Advanced Information & Communication Technologies

Advanced ICT underpins every critical technology and is the foundation of South Australia's shift to a knowledge economy. The state's investments in digital infrastructure, such as the A\$300 million South Australian Government Managed Platform Services, highlight the importance of accelerating the adoption of next-generation ICT as the digital backbone of growth.

Key facts

- ✓ Australia exported ~US\$2.88 billion of ICT goods in 2022, indicating a material base to grow higher-value software, 5G and cloud-related exports.¹⁷
- ✓ 42% of business R&D spend in 2023–24 was in information and computing sciences, reinforcing the pipeline for ICT innovation and adoption.¹⁸

What the Flinders / Cisco / NIIN partnership brings

Future-ready workforce. The Cisco Networking Academy delivers advanced networking and ICT credentials that prepare students and professionals for high-demand roles.

Early access to frontier technologies. Through Cisco's global R&D, South Australian partners gain exposure to cutting-edge networking solutions, from 5G to cloud-native and software-defined systems.

Applied prototyping in Adelaide. Innovation Central Adelaide provides facilities to design, test and validate ICT solutions in real-world conditions. This accelerates uptake by reducing the risks of adopting new platforms and creating clear pathways from pilot to deployment.

5. The urgent need for an ecosystem approach

Timing is critical

Other nations and states are moving decisively to secure advantage in critical technologies. International examples demonstrate what is possible when public commitment is matched by long-term investment. For example, Europe's Horizon program illustrates how decades of coordinated policy can produce breakthrough platforms such as Airbus and 5G.

Sovereign investment in AI alone underscores the scale of investment other jurisdictions are injecting into critical technologies. The United States committed more than US\$1.8 billion in 2023, China invested approximately US\$20 billion in 2022, and the United Kingdom has pledged £1 billion between 2023 and 2025. By contrast, Australia's AI Action Plan in 2021 committed only AUD\$124.1 million, a modest figure for the world's 14th largest economy. This gap strengthens the case for South Australia to distinguish itself not by scale of research funding but by becoming the national leader in rapid adoption.

Timing also aligns with existing funding mechanisms. Federal programs such as the Research Infrastructure Fund and related Commonwealth initiatives can be mobilised quickly if South Australia positions itself with shovel-ready testbed projects that clearly map to national priorities. The State's priority industries – defence, space, health and advanced manufacturing – are already recognised as nationally significant. By signalling commitment to accelerate adoption in these sectors, South Australia can unlock additional business investment and establish itself as the national proving ground.

Building South Australia's critical technology ecosystem

Flinders University, Cisco and the National Industry Innovation Network (NIIN) are committed to supporting South Australia's ambition to become a national leader in the adoption of critical

technologies. The partnership provides a mechanism for government, industry and academia to work together in advancing technology-enabled transformation across sectors.

Key opportunities include:

Government

- ✓ **Lead through adoption.** Use state systems—health, education, transport, utilities—as testbeds to de-risk new technologies and demonstrate value.
- ✓ **Invest in shared infrastructure.** Co-fund open, precinct-based facilities where government, industry and universities can trial and scale innovations.
- ✓ **Align policy and procurement.** Focus incentives and purchasing power on projects that accelerate adoption within priority sectors.

Industry

- ✓ **Collaborate to scale.** Partner with universities and government to co-design and deploy solutions in real-world settings.
- ✓ **Build capability.** Engage in training and workforce programs that embed digital and technical skills within existing operations.
- ✓ **Leverage testbeds.** Use Innovation Central Adelaide and other NIIN assets to prototype, validate and adopt emerging technologies faster.

Academia

- ✓ **Develop future skills.** Expand applied learning, micro-credentials and research placements aligned to industry adoption needs.
- ✓ **Convene the ecosystem.** Act as the connector between government, industry and communities to drive system-wide innovation and inclusion.

NIIN Partners and Collaborators

NIIN Partner Universities



NIIN Industry Collaborators





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