

# Innovation Central Sydney:

demonstrating the power of digital innovation and research capability to solve industry challenges

# Foreword

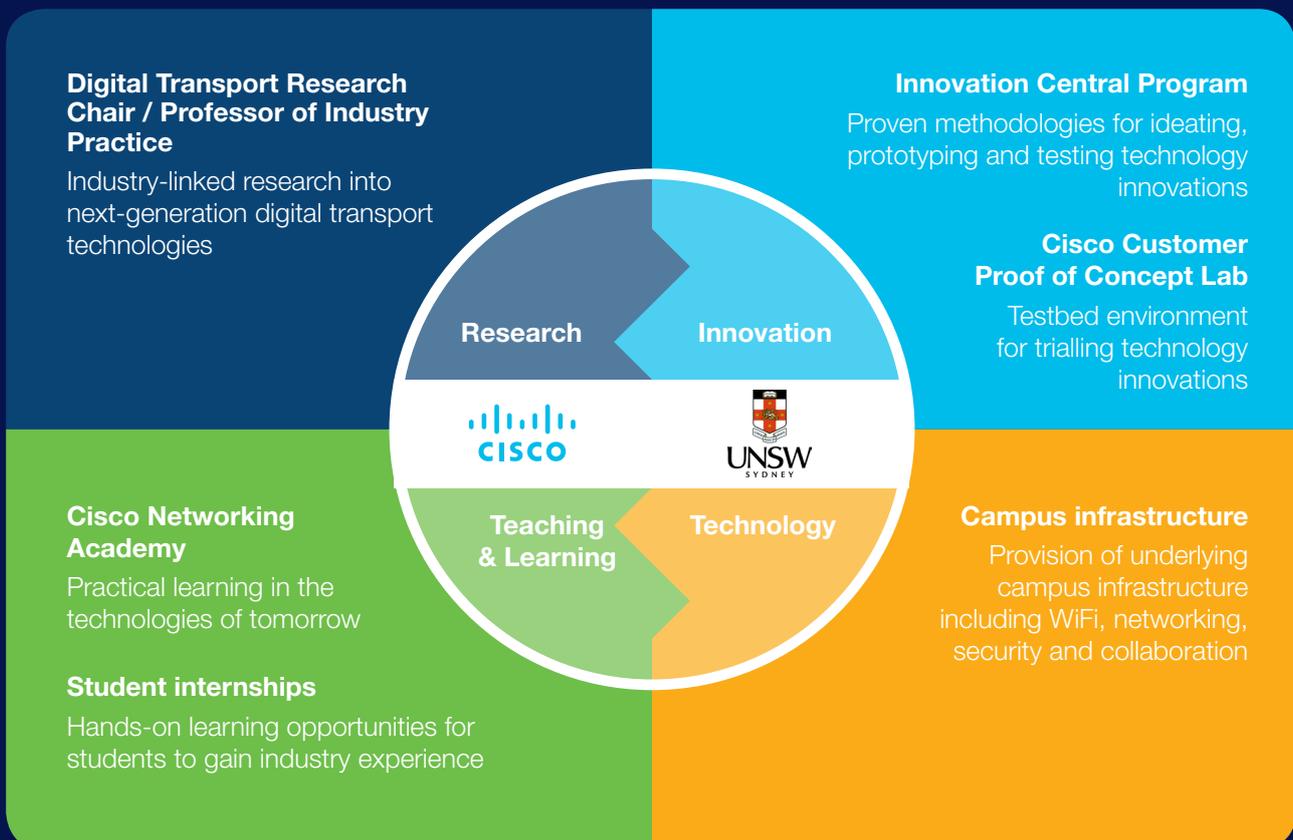
“Since our foundation in 1949, UNSW Sydney has aimed to improve and transform lives through excellence in research, outstanding education and a commitment to advancing a just society. We are one of the leading research and teaching-intensive universities in the world. Our pioneering research and sustained innovation are addressing some of the most important issues of today – from climate change and renewable energies to lifesaving medical treatments and breakthrough technologies. In the social sciences, UNSW research informs policy and expert commentary in issues facing society, ranging from human rights and constitutional recognition of Indigenous Australians to public health and population ageing.

All of UNSW’s priorities are being impacted by digitisation in different ways. UNSW has a role to play in helping to prepare government and industry for the disruption that is coming in some cases, and has well and truly arrived in others. UNSW also recognises that collaboration with industry has never been more important. The partnership with Cisco – a large and highly respected technology company from Silicon Valley – will help UNSW deepen its economic impact and provide opportunities for researchers and students to apply themselves to some of Australia’s most challenging problems. In co-investing with UNSW, Cisco has demonstrated the enormous faith it has in Australia’s higher education system, and UNSW in particular, to accelerate the development and adoption of new technologies across the economy.”

## Professor Nicholas Fisk

Deputy Vice-Chancellor Research

Figure 1. UNSW and Cisco’s multi-faceted partnership.



## Innovation Central Sydney

Innovation Central Sydney (ICS) is an industry and science collaboration centre located at UNSW, with the vision of advancing digital transformation through an open innovation ecosystem. ICS builds on Cisco's proven Innovation Central model, which has been deployed successfully in Perth (in partnership with Curtin University) and is currently being expanded to other states. Through ICS, industry can access world-class facilities and capabilities for designing, developing and scaling technology solutions to real-world problems.

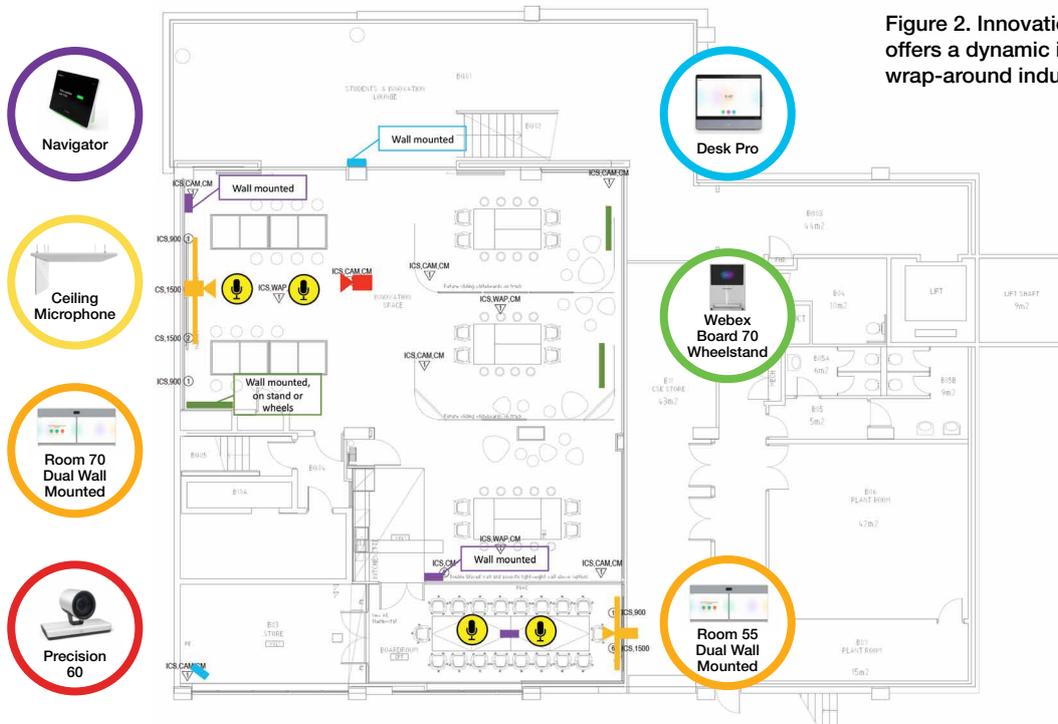


Figure 2. Innovation Central Sydney offers a dynamic innovation space with wrap-around industry services.

### Services

- Ideation and project scoping
- Prototyping
- Access to student talent
- Digital Lab
- Industry knowledge and insights sharing
- Access to UNSW campus

### Partners



## The Cisco-UNSW partnership is anchored by digital research and innovation



### Cisco is developing next-generation technology solutions for a more connected world

Cisco is one of the world's largest and most respected technology companies, spending more than \$60M annually on local innovation capability in Australia.

#### Case studies:

- **Bringing next-gen transport technology to NSW**  
 Cisco and TfNSW have partnered together with Innovation Central Sydney since 2019 to use Internet of Things (IoT), Edge Computing and Artificial Intelligence to help reduce congestion, increase safety and provide more reliable transport services for customers.
- **ANZ Transport team won the Cisco Data Science Award for Benefiting Humanity**  
 A Cisco AI solution for recognising high risk behaviour at road intersections developed with TfNSW received a Cisco Data Science Award for Benefiting Humanity, a global recognition and only the third time it has been awarded.
- **Outcomex IoT transport solution wins Cisco Global Partner Innovation Challenge**  
 Sydney-based managed services provider Outcomex partnered with Cisco to develop TransportDeck, an IoT solution that helps the transport sector monitor and gather information on transport areas such as pick-up drop off bays. TransportDeck topped the 2021 Cisco Global Partner Innovation Challenge.



### UNSW researchers are transforming the world through high-impact research

UNSW is a world-class research leader across a range of fields including ICT, robotics and devices; next-generation technologies; and defence and security.

#### Achievements:

- #1 in ARC Laureate Fellowships awarded in 2020
- UNSW researchers awarded the 2020 Malcolm McIntosh Prize for Physical Scientist of the Year
- UNSW researchers received the 2021 Japan Prize for transforming the photovoltaics industry
- UNSW researchers received one of three 2021 Dan David Prizes for the History of Health & Medicine

## The Cisco-UNSW partnership creates benefits for students, researchers and industry

Benefits	Students	Researchers	Industry
Hands-on industry experience	✓		
Early access to next-generation technologies	✓	✓	✓
Proximity to industry leaders	✓	✓	
Multi-disciplinary collaboration	✓	✓	✓
Access to global innovation networks	✓	✓	✓
Potential to attract research funding		✓	
Access to a testbed technology sandpit environment		✓	✓
Branding and global profiling opportunities		✓	✓
Access to a technology demonstration and showcase environments		✓	✓

## The partnership focuses on four targeted research areas

Digital technologies are transforming a number of Australia’s major industry sectors, and public sector services. The partnership enables UNSW students, researchers and ecosystem partners to experiment with advanced network technologies to create value for the state. Transport is a major focus area for the partnership, including the role of Industrial Internet of Things (IoT) to create efficiencies and transport system improvements. The focus on Industrial IoT creates some adjacent specialisations for ICS, including infrastructure digitisation / optimisation and cyber security. Scrutiny on cyber security has been elevated by the Commonwealth Government’s Critical Infrastructure Bill, which considers a range of regulatory changes for operators of critical infrastructure assets and services (including transport). The priorities are rounded out by a skills and talent development focus at ICS to ensure NSW has a pipeline of skilled graduates / mature age personnel to address forecast skills shortages.

 <p><b>Industrial IoT in Transport</b></p> <p><b>Harnessing connected sensors and analytics to optimise the transportation and logistics sector and enable the delivery of new digital services and applications including Intelligent Transport Networks.</b></p>	 <p><b>Infrastructure optimisation</b></p> <p><b>Digitising infrastructure to enable infrastructure owners to move up the infrastructure value chain – from infrastructure automation to analysis and optimisation.</b></p>	 <p><b>Securing Cloud Supply Chains</b></p> <p><b>Securing cloud infrastructure across entire supply chains to reduce potential vulnerabilities to Australia’s most essential sectors and services.</b></p>	 <p><b>Skills &amp; Talent Development</b></p> <p><b>Growing digital and technology skills through mentoring, internships and Cisco Networking Academy curriculum.</b></p>
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## A proven innovation management methodology will drive impact across the research areas

Innovation Central’s proven innovation management methodology is built on an agile approach to exploring, ideating, prototyping and testing innovations in the field. The methodology focuses on helping industry partners move up the digital value chain – from digitising assets across the target research areas to enabling new automation capabilities that drive benefits such as greater productivity, safety and efficiency.

**Automate:** Realise new benefits such as increased productivity, safety and efficiency

**Optimise:** Leverage data to inform improvements

**Analyse:** Analyse and share data insights

**Digitise:** Digitise assets and build and deploy digital capabilities



## Innovation Central's methodology is already being leveraged by UNSW to respond to campus challenges and enhance student experience

### Safe return to campus



#### Problem

A priority for education campuses is to safely bring students and staff back to campus while observing social distancing, hygiene requirements and other restrictions. Digital technology has a significant role to play in facilitating the safe return to campus.

#### Technologies

- IoT sensors
- Data analytics and visualisation
- Digital signage
- Mobile and communications integration

#### Approach

Leveraged IoT sensors to track room and desk utilisation

Enable real-time overcrowding alerts to be delivered via text, email, chat and digital signage

Use WiFi to track journeys on campus to assist with contact tracing

### Asset utilisation



#### Problem

Cost pressures on education institutions demand they find more efficiencies while maintaining high teaching, design, research and environmental sustainability standards. Digital technology creates an opportunity to make campuses more efficient and automated.

#### Technologies

- IoT sensors
- Data analytics and visualisation
- Automated building control systems

#### Approach

Movement tracking analytics to improve space utilisation

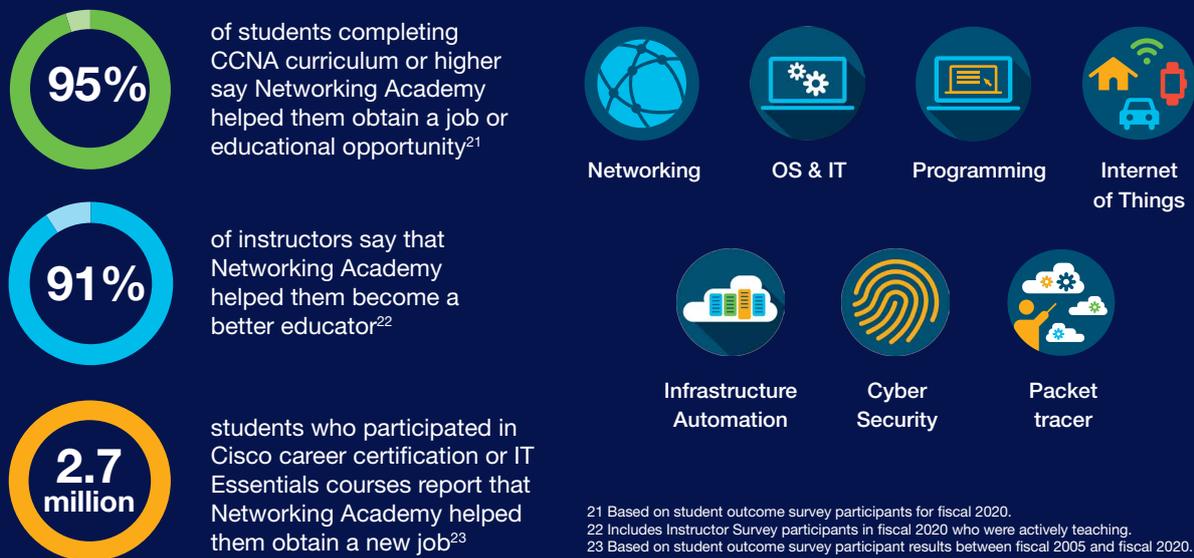
Automating building control systems to reduce energy consumption

## The Cisco Networking Academy at UNSW

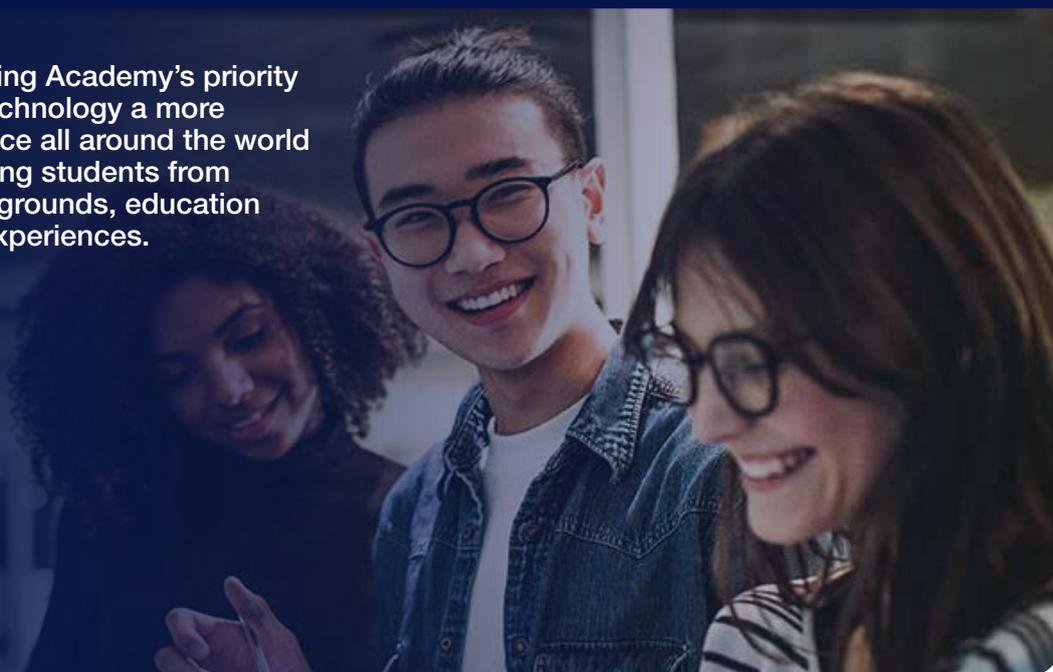
The Cisco Networking Academy is a global education program that partners with leading education institutions to deliver courses in programming, networking, the Internet of Things, infrastructure automation, entrepreneurship and cyber security.

UNSW is planning an expansion of the Cisco Networking Academy, which will provide digital skills, experiential learning and credentials to students. The Networking Academy partnership was first initiated in 2014 with a Cisco Certified Network Associate (CCNA) program. The relationship with Cisco extends to all UNSW's teaching programs, with Cisco's underlying infrastructure being used to power face-to-face and hybrid learning.

Figure 3. Cisco networking academy is expected to elevate opportunities for UNSW's students and community.

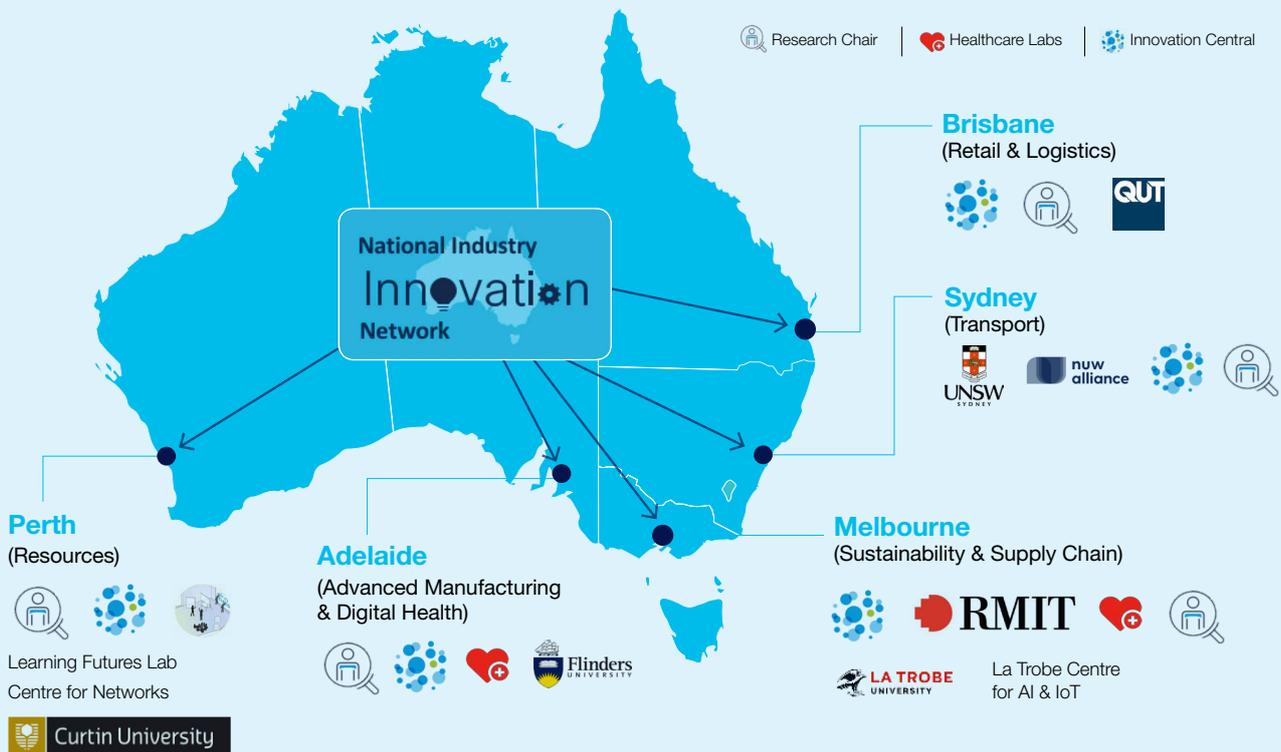


The Networking Academy's priority is to make technology a more inclusive space all around the world by empowering students from diverse backgrounds, education levels, and experiences.



## The partnership places UNSW at the heart of the new National Industry Innovation Network

The National Industry Innovation Network (NIIN) is an alliance of industry partners (led by Cisco) and leading Australian universities. NIIN serves as a model for industry and universities to collaborate in addressing real-world industry challenges and responding to Australia's long-term national interests. NIIN acts as both a clearing house for immediate industry challenges and a driver for economic stimulus, resilience and recovery through digital transformation. Together, NIIN partners are innovating across Australia's strategically important sectors in healthcare, advanced manufacturing, mining and resources, defence, utilities, transport and sustainability.



### The NIIN represents a combination of:

- ➔ Domain specialisation (digital health, education, digital transport, retail, defence, advanced manufacturing)
- ➔ Technology specialisation (advanced networks, IoT, AI)
- ➔ Assets / resources (innovation centres, research chairs, specialist labs, test labs, research projects)
- ➔ Talent development underpinned by Cisco Network Academy, cyber training hubs and internship programs

The model is truly national: all assets can be accessed by government / firms nationally rather than being captured by a specific region.

### Contact details

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