

AGTECH IN AUSTRALIA: DRIVING IOT CONNECTIVITY FOR FARMING

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As a longstanding hub for innovation in agriculture and food technology (agtech and foodtech), Australia has been recognised as an emerging global leader in Agriculture 4.0.

Leading multinationals such as Cisco have partnered with, and invested in, Australia to realise the opportunities new technologies offer the agriculture and food sectors.

Agriculture 4.0 technologies developed in Australia will support the global agricultural sector to be more profitable, efficient, safe and environmentally friendly. These technologies include biotechnology, smart farming, 'precision for decision' agriculture, robotics, sensing technology, Internet of Things (IoT) connectivity, biosecurity and food quality surveillance.

With over 1,000 Australia-based employees, Cisco is investing in projects and programs that will accelerate Australia's digitisation and help build a modern economy that is skilled, innovative, creative, inclusive and capable of adapting quickly as new opportunities emerge. Two of Cisco's 10 global IoT Innovation Centres are in Australia – **Innovation Central** in Sydney and the other in Perth. The Sydney facility is Cisco's only innovation centre focused on agtech and foodtech.

IoT is projected to create 50 billion endpoints by 2020, which will result in a fundamental shift across key sectors including agriculture, energy, transport and beyond. Cisco has invested over A\$50 million in the Australian centres and in venture capital since 2016. The company's focus is to accelerate the digitisation within the Australian economy in selected sectors including agriculture. Within agriculture, the aim is to enhance productivity, supply chain efficiency and food production quality.



Cisco's Farm Decision Platform.

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Kevin Bloch, Chief Technology Officer, Cisco Australia & New Zealand, believes agriculture is one of the least invested sectors when it comes to IT, although it is a key sector globally.

'Despite so much uncertainty and change, one thing we know for sure is that the world will always need more food,' says Bloch.

'Based on our experience in other sectors, we are confident that digitisation can address many of the current challenges in the agriculture sector. We believe that farming lags other sectors (in digitisation) for several reasons.



Australian Government

Australian Trade and Investment Commission



‘Our aim is to remove some of the roadblocks such as on-farm connectivity, and to facilitate and accelerate digitisation of food production. We have initiated this in Australia, but our aspiration is global.’

Investing in Australian innovation centres

Bloch says Cisco’s investment in Australia is facilitating the growth of the country’s technology development, trialling, deployment and expansion, and unlocking the potential of agtech.

‘Australia is the sixth largest producer of food in the world and has an excellent global reputation,’ he says. ‘Agriculture is an important sector here, and Cisco saw the opportunity to collaborate with a technically savvy culture and community. Australia is an environment that is primed and ready for the next phase of agriculture innovation, which is agtech.’

‘Our aim is not only to assist local food producers with accelerated digitisation, but to build an export industry for locally developed agriculture technology. We want the emerging technology and derived services to be as significant as the food produced in Australia.’

Cisco has also invested in and partnered with Australian industry partners and networks, including The GATE (Global AgTech Ecosystem) in Orange, New South Wales, an initiative of the NSW Department of Primary Industries to fast-track adoption of agricultural R&D. With Australia’s strong government support and industry collaboration, Bloch says the GATE is an incubator for startups and an environment that will help foster and stimulate a bigger ecosystem, and drive agtech innovation.

Cisco’s other partners include Data61 (the digital innovation arm of CSIRO, Australia’s national science agency), the University of New South Wales, NSW Farmers Association, the New South Department of Primary Industries and a number of local enterprises. Cisco is also a partner and investor in Blackbird Ventures.

Farm Decision Platform supports connectivity across rural Australia

Cisco’s core competencies in IoT innovation, cyber security and network connectivity are crucial to enabling Australian farmers to tap into the benefits of agtech.

At Innovation Central in Sydney, Cisco is resolving the issue of on-farm connectivity through the development of its Farm Decision Platform (FDP). The smart farming platform was designed as an

open system where applications and other technology solutions can be developed and commercialised by independent parties, similar to how a smartphone enables app development.

With FDP on the farm, third parties only need to focus on their app or sensor – everything else, including on-farm connectivity, data collection and security, is taken care of.

‘Australian farmers have an outstanding can-do attitude and problem-solving approach,’ says Bloch. ‘Of all the sectors I deal with, farmers also have the greatest sense of purpose. They have a genuine desire to do good – to leverage their crops and livestock to create high-quality, cost-effective produce.’

FDP can function both with and without internet access. Farmers can connect to any sensor on their farm immediately, without the need for a telco, and the connectivity is free as it uses unlicensed spectrum. Since its inception in 2018, FDP has been installed on a number of farms, which has been shown to make an enormous difference to farmer productivity. Some examples include:

- › **Data sensors:** To assist with farm management, one farm has sensors installed in electric fences to notify the farmer when a fence shows no current. The farmer is notified of any signal issues immediately and can thus prevent animals from escaping.
- › **Measuring micro-climate data in feedlots:** Rather than installing a costly weather station, temperature and wind data can be monitored by provisioning sensors in every pen. This allows farmers to detect and obviate major issues like heat stress on feeding cattle.

‘FDP provides data that enables farmers to make better decisions for their business,’ says Bloch. ‘We are already seeing payback to the farmer in less than 12 months.’

Access to real-time data through FDP allows farmers to identify real problems that are impacting their farm, and make informed decisions that will improve cost efficiencies and drive productivity. As the farmer collects an increasing amount of data, it is possible to predict situations and ensure that farm workers are engaged most productively.

Cisco and its partners are aiming to commercialise FDP globally. Cisco operates in over 100 countries, with interest gathering in the technology from several countries where agriculture is important. There is also interest from high-profile local food producers. Cisco expects that up to 20 target markets will deploy the FDP after Australia, driven by local acceptance and proven use-cases.

Cisco's investments in Australia clearly demonstrate how it is working with local farmers, researchers and organisations to bring the benefits of Agriculture 4.0 to the world.

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¹Zeus Kerravala, Businesses Can Gain A Competitive Edge with a High-Powered Network Edge Whitepaper, October 2016,

- › promote international education
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