



Smarter Regions CRC

ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

Artificial Intelligence (AI) presents an opportunity and a threat to regional Australia. If communities, universities and government work together, we can maximise the benefits and minimise the threats from this powerful new form of technology for regional Australia. This Smarter Regions CRC will give regional Australia the ability to act with urgency and scale to address some of the key challenges and opportunities facing regional Australia.

- Food and agriculture
- Mining and resources
- Tourism
- Health and social services
- Transport and logistics
- Manufacturing



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What we will achieve

The Smarter Regions CRC will empower regional Australia to gain the maximum benefit from the AI revolution. It will transform existing industries and grow a technology sector in and for regional Australia. The result will be:

- More profitable and competitive regional businesses and industries
- Higher productivity leading to higher wages
- Regional growth and jobs
- Better delivery of regional services
- A better return on regional investment
- Regional Australia confident it can thrive in an AI-enabled world

The CRC will be a partnership of industry, government, universities and VET training organisations and will be the first major effort to specifically focused on enabling regions to capture the benefits of AI anywhere in the world.

Why is this CRC needed?

Regional Australia contributes substantially to Australia's economic prosperity and well-being.

- Approximately 67% of the value of Australia's exports comes from regional, rural and remote areas (National Rural Health Alliance).
- 30% of the population live in rural and remote areas (ABS 2017) producing about 1/3 of Australia's GDP
- If it were a separate country, regional Australia's economy – worth almost \$600 billion would be placed 22, just behind Taiwan and in front of Poland.

Regional Australians face different opportunities and challenges compared to urban Australians. It can be more difficult to attract skilled workers in medicine and information technology (for example). The strong export focus of regional industries means that they must achieve higher efficiencies to compete with other, lower wage countries.



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Regional Australian businesses and communities pay a 'remoteness tax' in terms of travel time, lesser access to infrastructure and services and reduced access to networks of knowledge and influence.

Artificial Intelligence (AI) is a key emerging technology that can help overcome the challenges faced by regional Australia. In fact, the future of regional economies may well be linked to how well they adapt to the wave of disruption the world is currently experiencing from AI. Global market opportunities in AI, and the expected improvements in economic productivity as a result, have been estimated to be worth trillions of dollars (McKinsey). The technology will be a force multiplier on technological progress in an increasingly data driven world. The speed of change will be unlike anything we have seen before.

AI technology is being driven by rapid advances in machine learning - a new form of software that uses large data-sets to train itself to undertake particular tasks. This new technology, combined with rapid increases in computing power (doubling every 18 months) and data availability (doubling every 8 months) is a new driver of global competitive advantage.

Companies and countries that are early adopters of AI will reap disproportionate advantage, and those that lag will be net importers of the technology. If regional Australia doesn't act now, it risks being swamped by this new business paradigm over the next decade. Opportunities for AI in regional Australia include:

- AI-enabled products and services that improve the productivity of business
- Automating processes where there are challenges related to access to labour or cost of labour
- Reducing the cost of quality advice in health care, primary industries, tourism, mining, transport, manufacturing, utilities, resource management and natural disasters.
- Data analytics to better target regional development investment to more effectively stimulate regional economies and jobs growth

AI will enable new markets, and services, in much the way the Internet has. Most of the resulting high-paying jobs will be located close to where the new IP is created. Facebook, for example, employs over 30,000 people but had less than <100 in Australia in 2016 despite the volume of Australian data held by the company, and the income derived from it.



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Regional Australia risks losing jobs through automation enabled by AI, without capturing the benefit of high paying jobs that results from creating the new technologies. This CRC will address this strategic challenge head-on by enabling regional communities to develop their own AI solutions, and rapidly adapt new AI technology to create global competitive advantage.

The advantage of AI for regional Australia is that unlike traditional industries, there is no penalty for being located far from resources or markets. A new business can be developed in the back shed and scale quickly with very little physical infrastructure required.

Focus Program Areas

The Smarter Regions CRC will help regional Australia to more fully participate in the 21st Century economy through three research programs:

1. Overcome human skills shortages in regions for businesses and service delivery
2. Reducing the "remoteness tax" for regional communities
3. Global competitive advantage for exporting industries

These programs are described below, along with the required research capabilities and potential products to be developed.



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1. Overcome human skills shortages in regions for business and service delivery

Regional businesses and organisations often find it a challenge to fill skilled jobs. This limits the ability of businesses to expand and grow, and makes it difficult to achieve the same level of service delivery as in cities. Efforts must be taken to overcome these constraints, but it is also important to find alternative ways to deliver the services that currently require skilled workers. This program will build AI-driven software and devices that can deliver the services which currently require skilled workers. These products and devices in their own right will make working in regional Australia more attractive to highly skilled workers.

- Health triage to quickly determine healthcare needs of regional Australians
- Automated agronomists that convert data into advice
- Mental health triage and support
- Telemedicine
- Robotic automation in manufacturing
- Agriculture production and resource management

2. Reducing the "remoteness tax"

There are many advantages to living in regional areas of Australia, however there are also inevitably higher costs associated with operating a business and living in more remote areas. This is clearly illustrated by the estimation of delivering government services to regional Australia made by the Commonwealth Grants Commission (CGC) which can range of +3%-5% in inner regional areas and +60% in very remote areas. AI can help lower the 'remoteness tax' placed on regional businesses and communities:

- Optimising transport and logistics to reduce the cost of transport for business
- Optimising energy supply systems to lower the cost of energy
- Drones designed for Australian conditions and distances to reduce transport costs
- Smart design of regional centres to lower the cost of living
- Solving data transfer challenges in regional and remote areas to enable all businesses to engage more effectively in the adoption of artificial intelligence and other optimisation tools.



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3. Global competitive advantage for exporting industries

More than their urban counterparts, regional Australian businesses are focussed on exports. While making up 30% of the population, regional communities and their businesses deliver 67% of Australia's exports – making them 4x more export intensive than urban businesses. It is much more important for an Australian farmer or miner that they are globally competitive than an urban-based restaurant, gym or retailer. AI is going to be a key driver of global competitiveness across all industry sectors over the next few decades. Other countries are investing billions of public funds to support the development of the core technology and its application to improving the global competitiveness of their own industry sectors. It would be a mistake to assume that Australian business will simply be able to buy the same technology that their competitors have access to. It is critically important that regional Australian businesses have an ability to develop technology that will maintain their competitiveness through this next technological revolution. Potential products include:

- Automated food processing
- Automated farm operations
- Low cost, more effective safety systems
- Better targeted tourism products
- Mine-site optimisation software
- Resource processing optimisation systems
- Timber processing automation and tracking
- Water price prediction
- Better targeted indigenous tourism products
- Natural disaster and environmental management

Showcase Regions

The CRC is seeking expressions of interest from regions who wanted to capture the full benefit of the Smarter Regions CRC for their communities. 'Showcase Regions' would be those that work closely with the CRC to rapidly transform the awareness and capability of their region in AI technologies and capabilities.



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Regional Connectors

The CRC already has a number of Regional Connectors who are helping to connect the CRC to potential industry partners in a particular sector or region. These Connectors are government agencies and private companies. The CRC is interested in hearing from more Regional Connectors who would like to contribute their networks and influence to this CRC.

What stage is this CRC at?

We are in the early stage of the development of this CRC. The intention is to build on a core group of partners who are passionate about the vision and outcomes of this CRC. These partners will refine the objectives and design of the CRC and help to grow the number of partners.

By the end of 2019, the high level design and scope of the CRC will be agreed by the partners, and a governance process established to prepare a more detailed Stage 1 submission, which will be due in approximately June 2020. If Stage 1 is successful, the bid team will be required to develop a Stage 2 submission, which will be due in the latter part of 2020. Should this be successful, the CRC is likely to start in early 2021.

The University of Adelaide is currently leading this bid, supported by a Bid Development Team with membership from:

- University of Adelaide
- University of Sunshine Coast
- Wollongong University
- Sydney University
- University Technology Sydney
- Swinburne University
- QUT
- University of Tasmania
- University of Western Australia
- Department of Primary Industries and Resources SA (PIRSA)
- Regions Matter Pty Ltd
- International Centre of Excellence in Water Resources Management



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You are invited to join the team and influence the design and agenda of this important national initiative.

Interested partners have met in Adelaide at a workshop in October 2019. This has helped to refine the opportunities and identify who has an initial interest in the CRC – and identified some initial project ideas. The current list of interested university partners are from sectors that include mining, agriculture, manufacturing, forestry, regional development, software, artificial intelligence, state government and regional champions.

The next steps proposed at this stage are:

2019

Grow the number of partners

Second Workshop in Melbourne to further refine design and objectives and agree on governance arrangements

Milestones:

- New version of the Prospectus
- Agree on a process to develop submission
- Appoint an interim CEO
- Appoint Program Managers
- Finalise the Bid Development Team
- Payments due from existing partners for bid development

January to March

Grow the number of partners

Develop an initial draft of the submission

Workshops to develop the Program design

Milestones:

- First draft of the submission for Stage 1
- Establish an interim Board



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ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

March to early May

Finalise and submit the submission

Workshop to answer any final questions on the submission

Milestones:

- All partners sign Participant Declarations
- Submission is submitted

July to later in the year

Prepare and submit Stage 2 submission

Interim Board and CEO attends interview (If successful in

- Stage 1)

Partners sought

The CRC is designed to support regional Australia to benefit from the emerging opportunities created by AI. Organisations who would benefit include:

- Regional businesses and industry sectors in mining, agriculture, tourism, professional services, health and manufacturing
- Indigenous businesses and management corporations
- Technology companies, especially those with a regional focus
- Education and training providers
- Government agencies in regional development, industry and health: Federal, state and local

Partners will be required to contribute to the costs of the development of the CRC. These costs are detailed below.



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ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

Why invest in the Smarter Regions CRC

We are looking for investors in the Smarter Regions CRC who want to achieve one or more of the following benefits.

- Co-develop transformational improvements in the prosperity and well-being of regional Australia
- Access world-class capability in AI to develop specific products and services for the benefit of regional Australia
- Be recognised for participating in a world-first effort to implement AI for the benefit of regions
- Access to a highly motivated and capable network of companies and organisations
- Ownership of Intellectual Property (IP)
- An opportunity to leverage your research and development funds (minimum of 1:1) for up to ten years with one application
- Early and/or exclusive access to new knowledge in AI to improve your productivity and profitability
- A strong, quality assurance process in place for funds invested with sound, independent governance
- Simple, easy to start contract agreement that is not aggressive about IP
- A one-stop-shop for research and education services
- All the support you need to start-up your AI-enabled business



Smarter Regions CRC

ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

What are the investment options?

We are looking for investors in the Smarter Regions CRC who want to achieve one or more of the following benefits.

Major Partner

Our Major Partners make a significant contribution to the objectives of the Smarter Regions CRC over a 10 year timeframe. In practice, this means a cumulative cash investment over 10 years of at least \$2 million. Major partners are expected to invest ~\$20,000 up-front for the development costs of the CRC submission (split \$14,000 stage 1 and \$6,000 stage 2) for universities and \$15,000 (\$10,000 and \$5,000) for other Major Partners.

Partner

Our Partners have a strong commitment to a particular program or project of the Smarter Regions CRC and are investing for a specific outcome. Partners make a minimum cumulative cash investment of \$250,000 or more over 10 years. Partners are expected to invest ~\$5,000 up-front for the development costs of the CRC submission (split \$3,000 stage 1 and \$2,000 stage 2).

Projects

Collaborating organisations can also choose to partner with the CRC on a project by project basis. Depending on the project and its alignment with the contracted outputs of the CRC, there may also be an opportunity for leveraging further CRC investment to match the industry investment. Project investors are expected to invest \$3,000 up-front for the development costs of the CRC (split \$2,000 stage 1 and \$1,000 stage 2).

Regional Connectors

Connectors don't see direct benefit from the CRC but aim to help connect the CRC to potential industry partners within their networks. Regional Connectors are not required to pay for the development costs of the CRC directly, but do so through the industry partners they bring to the CRC.



Smarter Regions CRC

ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

Intellectual property and commercialisation

While the intellectual property (IP) arrangements are to be agreed to be the partners, as a matter of principle, it is expected that IP will be negotiated on an individual basis for each project undertaken and that organisations sponsoring a project will have first rights to commercialise IP developed in that project.

Governance

The Smarter Regions CRC will be a not-for-profit, incorporated company, limited by guarantee. As such, it will operate under the Corporations Act and has adopted the governance principles of the Australian Stock Exchange Corporate Governance Council.

The Smarter Regions CRC will establish a skills-based Board of Directors to govern the Centre, with an independent Chair and a majority of independent members, as directed by CRC Program guidelines. The Board will provide oversight of the Smarter Regions CRC activities, performance and strategic direction.

The management of the CRC will be led by a Chief Executive Officer, supported by small operational and administrative team directly employed by the CRC. Program Leaders will be appointed to lead individual Programs, provided as in-kind contributions by CRC partners. A Research Director will be appointed to Chair a Science Advisory Committee to oversee the quality of the research undertaken by the CRC. A Commercialisation Manager will be appointed to Chair a Commercialisation Panel to focus and promote commercialisation outcomes from the CRC activities.



Smarter Regions CRC

ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

The CRC Program explained

The Cooperative Research Centre (CRC) Program was established in 1990 as an Australian government initiative to improve research translation into commercial products. It is administered by AusIndustry, a division of the Australian Government's Department of Industry, Innovation and Science.

The aim of the CRC Program is to deliver significant economic, environmental and social benefits to Australia, by improving productivity, competitiveness, and sustainability of Australian industries.

The CRC Program itself is a highly competitive, merit-based grant program, supporting industry-led and outcome-centric collaborative research partnerships between industry, researchers, and the community.

CRCs support medium to long term industry-led collaborative research for up to 10 years. Major challenges are clearly identified and addressed through the partnerships established.

CRCs are a proven model of innovation and commercialisation, stemming from focussed research and development between researchers and industry.

CRCs additionally implement industry-focused education and training programs, enabling the development of industry-ready, highly-skilled employees.

Further information can be found at The Department of Industry, Innovation and Science. www.business.gov.au.



Smarter Regions CRC

ENSURING A PROSPEROUS FUTURE FOR REGIONAL AUSTRALIA

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