



## Collaboration, a key to regional transformation

**Establishing a formal partnership to support regional communities and develop current and future workforces.**



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May 2022



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## Table of Contents

Executive Summary .....	1
Introduction .....	2
The Opportunity .....	2
The Partners .....	3
RCOE .....	3
CQU .....	3
BHP .....	4
The Partnership .....	4
The Roles .....	5
CQU Chair .....	5
RCOE GM .....	5
The Funding .....	6
Implementation .....	6
Conclusion .....	6
Exhibits .....	9
References .....	9

## Table of Figures

Figure 1. Objectives and outcomes (individually and collectively) of partnership.....	7
Figure 2. Outcomes and evaluation of initiatives (individually and collectively) of partnership. ....	8

## Executive Summary

Industry 4.0 and the unprecedented “new normal” of COVID-19 has brought rapid changes to technology, industries and societal patterns and processes due to increasing interconnectivity and smart automation <sup>(1)</sup>. The mining equipment, technology and services (METS) and resources sectors remain irreversibly unopposed as the cornerstone of Australia’s economy. Although automation offers the promise of increased productivity, competitiveness and well-being, it also has a major impact on social inequalities, regional communities and the workforce (current and future) <sup>(2)</sup>.

The purpose of this case study is to show how establishing a formal collaborative partnership between a university, a hub-and-spoke business model resources centre and an Australian coal mining company is a key to regional transformation to support regional communities and develop future workforces.

The goal of the partnership is to bring people and resources together to unlock and accelerate skills, training and educational outcome for the future in the communities of which they are part. It is proposed that a collaborative partnership, with true operational integration of the leading roles, would add significant value to the strategic objectives of the partnership and accelerate the capability to deliver real solutions to real industry issues and add exceptional social value in our communities. Together the partners aim to identify and implement research and development opportunities, with the hub and spoke business model platform, combined with the academic and research horsepower of the university, delivering real solutions to real industry issues, in a way that has never been done before.

## Introduction

In the unprecedented “new normal” of COVID-19 and the impact of Industry 4.0, the mining equipment, technology and services (METS) and resources sectors remain irreversibly unopposed as the cornerstone of Australia’s economy. Similarly, the new habits of “physical distancing and social connectivity” have accelerated investment and participation in automation and digital technology solutions in our homes, communities and industry sectors <sup>(3)</sup>.

In 2020, CQUniversity (CQU) negotiated with BM Alliance Coal Operations Pty Ltd (BMA) to fund a formal and ongoing (initially for 5 years) research partnership and collaboration initiative of “Chair in Automation and Future Work Skills (CQU Chair)”. The demand was identified through work undertaken on the [Queensland Future Skills Partnership](#) between BHP, TAFE Queensland and CQUniversity to develop new vocational education courses (and pathways) in automation for Queensland’s mining industries.

Around the same time, the Resources Centre of Excellence (RCOE) commenced operations with the initiative to challenge industry mindsets and connect the brightest minds in research, technology, education and METS to shape the resources sector of the future. Initial funding was provided by BMA to establish governance and operating models, implement branding, develop a master plan and undertake a scoping study. Strong, effective leadership was integral to the success of this concept and led to the RCOE recruiting a General Manager (GM).

Discussions between RCOE, CQU and BMA identified that a collaborative partnership, where there was true operational integration of the RCOE GM and CQU Chair roles, would add significant value to the strategic objectives of both initiatives and accelerate the capability to deliver real solutions to real industry issues and add exceptional social value in their communities. The vision and purpose of the partnership were to bring people and resources together to unlock and accelerate skills, training and educational outcome for the future in the communities of which they are part. A joint proposal for industry contribution towards the collaborative initiative was put forward to BMA.

The initiatives outlined above have been well progressed prior to COVID-19 impacting the world and Australia. Unintentionally, this worldwide pandemic provided an even stronger motivation to progress the partnerships and, undoubtedly, in a post-COVID-19 world there would be significant and accelerated change to work and workplaces across a broad range of industries that will directly benefit from this initiative.

## The Opportunity

The partners RCOE, CQU and BMA committed to maintain a positive and cooperative working relationship and to, where practicable, work collaboratively to:

- Challenge industry mindsets and connect the brightest minds in research, technology and education to shape the METS and resources sector of the future.
- Drive the development of new innovative training qualifications and courses in automation and new work skills beyond the mining sector, including METS, Agriculture, Health, SMEs and construction.
- Create significant regional economic value and demonstrate exceptional social benefit in our communities.

## The Partners

### RCOE

The Resources Centre of Excellence (RCOE) <sup>(4)</sup> is a unique, not for profit research and development incubator start-up with world-class facilities provided by the Queensland Government and Mackay Regional Council. After years of visioning and planning, the RCOE was established in July 2020. As Australia's newest skills and innovation incubator sustaining the growth and evolution within the METS sector, the RCOE is set to interlock businesses with educators, research providers and other stakeholders to establish the Mackay region as a globally connected METS enterprise hotspot. RCOE is poised to deliver economic growth, technology development and job creation, particularly in emerging careers.

The RCOE was established to connect the brightest minds in research, technology, education and METS to shape the resources sector of the future. They strive to be a catalyst for connecting resources excellence in the region and around the world; promote genuine collaboration to deliver ground-breaking solutions for industry problems; empower research and development to accelerate ideas and concepts to commercialisation; facilitate, educate and train the resources workforce of the future; and involve their communities in a collective strategy about the resource sector of the future and how it adds value to the world.

The physical hub of RCOE is a central facility, located in Paget (Mackay), Queensland, that is supported by multiple satellite extensions with a global scope. These extensions include both actual and virtual spaces that provide a platform for the development of innovative solutions for the resources sector.

### CQU

**Central Queensland University** (alternatively known as **CQUniversity** or **CQU**) <sup>(4)</sup> is an Australian public dual sector university based in central Queensland and the only Australian university with a campus presence in every mainland state. Originally founded in Rockhampton in 1967 as the Queensland Institute of Technology (QIT) Capricornia, it was granted full university status in 1992 and was named the University of Central Queensland. The University rebranded to CQUniversity in 2009 and now has more than 30 000 students. It has firmly established itself as one of the largest universities based in regional Australia, with campuses in Adelaide, Brisbane, Bundaberg, Cairns, Emerald, Gladstone, Mackay, Melbourne, Perth, Rockhampton, Sydney and Townsville and a network of study hubs and university centre partnerships throughout regional Australia.

Delivering more than 300 courses from Certificate to Doctorate (PhD) level, CQUniversity's unique vision for diversity, outreach, engagement, research, learning and teaching, and inclusiveness has led to it being recognised among the world's top universities by both the prestigious Times Higher Education World University Rankings and the QS World University Rankings. A strong history of engagement and social innovation has also led to CQUniversity being recognised as Australia's only Changemaker Campus by the global social innovation group Ashoka U.

A renowned research institution and a benchmark leader for how universities should engage with their communities, CQUniversity's record of achievement is matched only by the ambitious aspirations it has set itself over the coming years, with a continued expansion of student success, research excellence, social innovation and community engagement firmly in its sights.

## BHP

Queensland Coal comprises the **BHP Mitsubishi Alliance (BMA) and BHP Mitsui Coal (BMC)** <sup>(4)</sup> assets in the Bowen Basin in Central Queensland, Australia. The BHP Mitsubishi Alliance (BMA) is Australia's largest coal producer and supplier of seaborne metallurgical coal operating in Central Queensland. It is a joint venture with BHP and Mitsubishi each owning 50% and was established in 2001. The BMA alliance operates seven mines in the Bowen Basin: Blackwater, Broadmeadow, Caval Ridge, Daunia, Goonyella Riverside, Peak Downs and Saraji. BMA also owns and operates the Hay Point Coal Terminal and Moranbah Airport. BMC owns and operates two open-cut metallurgical coal mines in the Bowen Basin – South Walker Creek Mine and Poitrel Mine. BMC is owned by BHP (80 per cent) and Mitsui and Co (20 per cent).

As a leading global resources company, its purpose is to bring people and resources together to build a better world – to have the best capabilities, best commodities and best assets, to create long-term value and high returns.

## The Partnership

A non-binding Memorandum of Understanding (MOU) was signed between the partners while funding arrangements, employment and management obligations of the roles are independently assessed and administered <sup>(5)</sup>.

The partners have set collaborative goals and objectives:

- Connect research centres, universities, government, industry players and associations, OEMs, experts, innovators, start-ups and funders.
- Create a space where resources and METS associated companies bring issues to the table and collaborate with others to solve those issues.
- Identify and implement research and development opportunities, utilising the RCOE Hub and Spoke business model platform, combined with the academic and research horsepower of CQU, delivering real solutions to real industry issues, in a way that has never been done before.
- Focus on the impact of automation in the mining industry on regional cities and communities and explore, model and propose how regional cities and communities will not only adapt to the rise of automation in the resources sector but actually grow their respective economies and take full advantage of such development.
- Communicate to tertiary providers and the community the outcomes of this research to ensure training and education offered in the future will appropriately prepare the regional workforce and regional development.

Within the first 12 months of the execution of the MOU, the parties had to identify and agree on a delivery strategy for a joint project that aligns with the goals and objectives above; demonstrates significant social value in the regional communities; and must be executed, evaluated and reported on within 24 months of execution of the MOU.



## The Roles

### CQU Chair

This initiative comprises a **CQUniversity Research Chair in Automation and Future Work Skills** (Director) <sup>(6)</sup> and support staff leading, coordinating and driving activities with researchers and RHD students to deliver an ongoing and extended range of projects. The research program focuses on the impact of automation in the mining industry on regional cities and communities. The initiative is forward-looking and explore, model and propose how regional cities and communities not only adapt to the rise of automation in the resources sector but also grow their respective economies and take full advantage of such development.

In addition, and just as important is the communication of the outcomes of this research to tertiary providers and the community to ensure training and education offered in the future will appropriately prepare the regional workforce and regional development. An important element of success is the close engagement with industry and government to ensure training courses are relevant and practical for the Queensland industry. This includes a direct relationship with the Queensland Future Skills Partnership.

In response to the Future Workforces Summit, held in Mackay on 9 August 2019, this initiative plays a key role in driving outreach and also works in close collaboration with key contributors such as industry partners and regional initiatives such as the new Mackay RCOE, CQUniversity's proposed Central Queensland School of Mining and Manufacturing and the Institute for Future Farming Systems. Close engagement and collaboration with key Cooperative Research Centres (CRCs) are also important, including the new MinEx CRC.

The CQU Chair role is, by its very nature, steeped in academia. The appointee requires a doctoral qualification or advanced qualifications and/or recognised significant experience and standing in their academic or professional field. It is a high-level role operating at a state, national and international level identifying research and development opportunities critical in driving the development of new innovative training qualifications and courses in automation and new workplace skills beyond the mining sector, including in METS, Agriculture, Health, SMEs and Construction. The Chair plays a critical role in driving the high level academic and research leadership not only to CQU projects but also to the "Research and Development Incubator" concept of the RCOE. The Chair's experience, qualifications and professional networks attract like-minded academics and researchers to become involved in solving METS and resources industry issues. The Chair, working alongside the RCOE GM, is integral to connecting the region with the wider world.

It was proposed that this initiative be located on the CQUniversity campus in Mackay, allowing the Partnership to leverage synergies and existing resources, including the CQUniversity TAFE Trade Training Centre and Engineering facilities offering full-spectrum engineering specialisations, the Mackay Engineering College, the Resource Industry Network (RIN) and the RCOE.

### RCOE GM

The **Resources Centre of Excellence (RCOE)** Board appointed a **General Manager (GM)** <sup>(7)</sup> to oversee the final stage of the centre's planning and development, then turn the strategy into action. The GM is a team player whose experience and energy bring the RCOE vision to life. The GM is a proven 'hands on' proactive and entrepreneurial leader who has previous experience in a strategic leadership training role in the METS or associated sector, is a convincing communicator and is motivated to apply new thinking to disturb the status quo. The GM's proven project management and process development know-how is valuable, given the 'start up' nature of the centre. The GM is authentic and exercises integrity and accountability, exhibiting a sense of ownership and commitment to the success of the RCOE.

Broadly the RCOE GM is responsible for managing the operational activities, ensuring they are consistent with RCOE strategy; shaping a positive culture through strong leadership and behaviours; ensuring RCOE's mission and vision are present strongly and positively; using creative thinking and industry know-how to develop and

deliver services and projects; proactively managing tight and positive relationships with stakeholders; developing and executing financial plans; and developing, implementing and managing operational systems, process and procedures.

The RCOE GM will be the conduit for the CQU Chair, METS and associated industries providing the hub where all industry issues and research and academic solutions come together. The Hub and Spoke model of the RCOE will be pivotal to the engagement of CQU with industry issues and will provide the catalyst for educational innovation and pushing technology development quickly to commercialisation. The RCOE GM role enhances both the effectiveness of the CQU Chair role and allows scaling of sustainable revenue streams for the RCOE.

The CQU Chair will work in harness with the RCOE GM to create a space where resources and METS associated companies bring issues to the table and collaborate with others to solve those issues. Together they will identify and implement research and development opportunities, with the RCOE Hub and Spoke Business Model platform, combined with the academic and research horsepower of CQUniversity, delivering real solutions to real industry issues, in a way that has never been done before. While these synergies sound easy in a sentence or two, the reality of any one position covering the combined skill sets or functions required is virtually impossible.

## **The Funding**

The underpinning concept of this collaboration model is about symbiotic integration of the CQU Chair and RCOE GM roles while maintaining independent employment arrangements with their respective organisations. CQUniversity and RCOE funding arrangements are independently assessed and administered, and all employment and management obligations of the roles will be dealt with accordingly.

## **Implementation**

Following the establishment of the Chair and the GM roles respectively, business planning progressed with planned objectives and outcomes (individually and collectively) as outlined below in Figure 1. Figure 2 shows the projects each role initiated to achieve the collective outcomes.

## **Conclusion**

This initial case study forms part of the workplans of both the Chair in Automation and RCOE initiatives. It clearly outlines the background against which BMA decided to support the collaboration between CQUniversity and the RCOE as well as what the individual and collective aims of the projects are. This work is intended to present a 'baseline' for the 'joint objectives' in both projects from a conceptual, funding, planning and implementation point of view.

This work will form the basis for the next case study, planned for 2025, in which reporting will be presented detailing outcomes and impact of planned joint initiatives based on ongoing project evaluation.





## OBJECTIVES

1.0 CQUniversity will appoint a Chair in Automation and Future Work Skills and associated research program within its institution.

2.0 The appointed Chair will establish and maintain key relationships between stakeholders, including the RCOE General Manager, that enhance the automation and technology capabilities of the mining and METS sectors in the Mackay, Isaac, Whitsunday and Central Highlands regions.

3.0 Establish a research program that focuses on the impacts of automation in the regions' industries (not just mining). The program will be forward looking and explore, model and propose how regional cities and communities will not only adapt but also grow their respective economies and take advantage of such development.

**4.0 Drive the development of new innovative training qualifications and courses in automation and new work skills beyond the mining sector, including METS, Agriculture, Health, SME's and construction.**

**5.0 Create significant regional economic value and demonstrate exceptional social benefit in our communities.**

## OUTCOMES

- Chair and associated research staff appointed in consultation with BMA.
- Creation of Stakeholder Engagement Management Plan (SEMP) for regional stakeholders and execute plan.
- Terms of reference developed for significant stakeholder groups.
- Establishment of an automation and future skills activation hub.
- A research program that articulates the impacts and opportunities for regional communities arising from automation, with clear pathway for achieving skills and capabilities to take advantage of these opportunities.
- Skills and capabilities required for regional communities to fully participate in future work opportunities are identified and mapped; training delivery addresses gaps and maps to future growth areas.
- Lead educational conversations in this space regionally and nationally as an identified thought leader.

Communication and engagement models established.

All three partners (BMA, CQU, RCOE) well informed and operating effectively to achieve identified objectives.

Identification of local, regional and global opportunities and collaboration across industry.

Build and strengthen an ecosystem of research centres, universities, government, industry players and associations, OEM's, experts, innovators, start-ups and funders.

Identify and agree on joint project between partners.

Build CQU and RCOE brand and recognition as authority on automation and new work skills.

Contribute to the growth of the regional economy.

- GM recruited through an open and transparent recruitment process.
- Creation of Stakeholder Engagement Management Plan (SEMP) for broader stakeholders across facility and execute plan.
- Development of a 'hub and spoke' model to ensure engagement across regions and deliver training to a broad spread of recipients.
- Identification and delivery of skills and training at RCOE/affiliated entity (if remote or offsite delivery).
- Consider, and where appropriate, adoption of recommendations from MIW Future Employment Study.
- Activated experiential hands on training opportunities with focus on future skills development.
- Cultivated innovation and technology trials of fast track implementation of safety initiatives.
- Attract international collaborators and from outside MIW region.
- Push technology development quickly to commercialisation.
- Ensure sustainability of RCOE for longer term through identification of sustainable revenue streams.

## OBJECTIVES

1.0 RCOE will appoint a General Manager to oversee the final stage of the Resources Centre of Excellence's planning and development and implement the Centre's strategy and delivery plans.

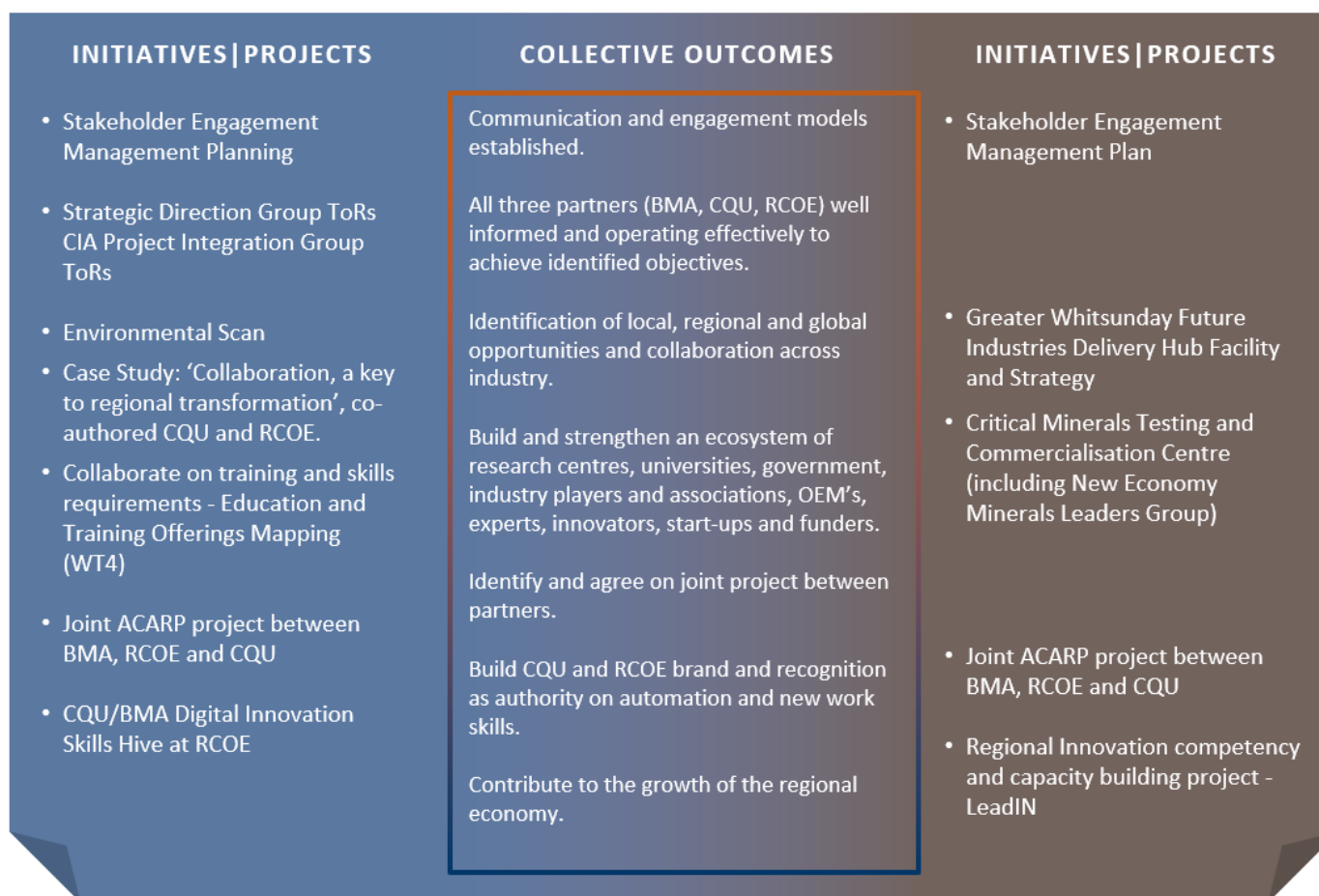
2.0 The appointed GM will establish a communication and engagement model between RCOE General Manager and key partners that includes regular reviews over the course of the partnership.

3.0 Challenge industry mindsets and connect the brightest minds in research, technology and education to shape the Mining Equipment, Technology and Services (METS) and resources sector of the future.

**4.0 Drive the development of new innovative training qualifications and courses in automation and new work skills beyond the mining sector, including METS, Agriculture, Health, SME's and construction.**

**5.0 Create significant regional economic value and demonstrate exceptional social benefit in our communities.**

Figure 1. Objectives and outcomes (individually and collectively) of partnership



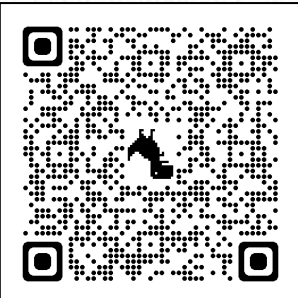
**Figure 2. Outcomes and evaluation of initiatives (individually and collectively) of partnership.**

## Exhibits

- Exhibit 1: [BM Alliance Coal Operations Pty Ltd \(BHP\) and Central Queensland University Community Project Contract](#)
- Exhibit 2: [CQUniversity and Resources Center of Excellence Joint Submission on proposed collaboration to BHP Mitsubishi Alliance \(BMA\)](#)
- Exhibit 3: [Memorandum of Understanding between RCOE and CQU and BMA.](#)
- Exhibit 4: [RCOE Master Plan](#)

## References

1. Coombs C. Will COVID-19 be the tipping point for the Intelligent Automation of work? A review of the debate and implications for research. International Journal of Information Management. 2020;55:102182  
[Available from: <https://www.sciencedirect.com/science/article/pii/S0268401220310100>].
2. Viljoen JP, Viljoen R. Embracing Industrial Revolutions: A multi-faceted continuum of change and transformation fuelling ongoing adaptation. 2021 (Unpublished)  
[Available from: [https://drive.google.com/file/d/1SDooqeNX2CFD7VsTyMnjU4o80U\\_-pP2I/view?usp=sharing](https://drive.google.com/file/d/1SDooqeNX2CFD7VsTyMnjU4o80U_-pP2I/view?usp=sharing)].
3. Lopez KJ, Tong C, Whate A, Boger J. “It’s a whole new way of doing things”: the digital divide and leisure as resistance in a time of physical distance. World Leisure Journal. 2021;63(3):281-300  
[Available from: <https://www.tandfonline.com/doi/pdf/10.1080/16078055.2021.1973553>].
4. RCOE. Resources Centre of Excellence 2022 [Available from: <https://www.rcoe.com.au/>].
5. CQU. CQUniversity welcomes BHP Mitsubishi Alliance (BMA) Funding Announcement 2021  
[Available from: <https://www.cqu.edu.au/cquninews/stories/general-category/2020-general/cquniversity-welcomes-bhp-mitsubishi-alliance-bma-funding-announcement>].
6. CQU. Chair in Automation and Futrue Work Skills 2022  
[Available from: <https://www.cqu.edu.au/research/organisations/chair-in-automation-and-future-work-skills>].
7. RCOE. About Resources Centre of Excellence 2021  
[Available from: <https://www.rcoe.com.au/about>].



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