



Comment

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Effective industry and research collaboration: redefining return on investment



Business needs and academic capabilities need to be taken into account in any industry-research collaboration.



AS the fourth industrial revolution (Industry 4.0) gathers momentum, manufacturers are becoming more aware of the commercial benefits of research and development (R&D) collaborations with research organisations. At the Innovative Manufacturing Cooperative Research Centre (IMCRC), we've seen these collaborations not only stimulate innovation but help companies compete commercially in the rapidly changing world of manufacturing.

By several metrics, Australia is a powerhouse of research and academic capability. Many companies have access to some

of the country's most advanced research facilities, business schools, and subject matter experts within a stone's throw of their head office.

But for many business leaders, the question remains: if we invest in collaborative R&D projects, will we see a return on our investment? And is there a sufficient connection between what our business needs and what research organisations can provide?

In the second of a three-part series on navigating the path to successful industry and research collaboration, we look at the challenges businesses face in relation to return on investment and how these challenges can

be overcome through effective collaboration.

The first challenge: demonstrating real-world outcomes

We often speak to manufacturers who understand the importance of R&D for innovation and are open to the prospect of reaping the benefits that research organisations provide, such as specialised skills, advanced technologies, infrastructure, and scale.

Examples exist of prominent Australian manufacturers and global multinationals operating in Australia that have successfully embraced collaborative R&D models

– BlueScope, Cochlear, Visy, and Boeing, just to name a few.

But more local case studies are required to convince business leaders, particularly of small and medium enterprises, that collaboration between research and industry organisations can lead to a serious return on investment. Critical to any form of collaboration is an aligned focus on outcomes, including commercial outcomes, and R&D collaborations should be no different.

As a CRC, part of our role is to champion and showcase examples of successful R&D collaborations and the business outcomes they deliver. Through our publications,

annual conferences, and our proprietary futuremap education program, we help manufacturers see the potential and transformative benefits they could gain from partnering with a research organisation on their Industry 4.0 journey.

The second challenge: aligning objectives

When it comes to measuring return on investment (ROI), manufacturers tend to prefer methods based on numbers and tangible results, such as growth in sales and jobs. But in the rapidly changing world of R&D, the results of Industry 4.0 projects are not always immediately tangible or monetary. When digitalising manufacturing processes for example, your ROI could simply be “not being left behind”.

Even if a manufacturer has a clear idea of how they will measure the ROI for a collaborative R&D project, research organisations might have a different approach with less emphasis on the financial returns. A researcher’s ROI may include high quality publications, for example, although most academics we engage with also want to see impact from their work.

To ensure alignment, addressing the commercial elements of any project right at the start is key, right from the project concept, creation and scoping stages. Before we endorse an IMCRC project, we require participants to describe their desired ROI – whether that’s sales, jobs, exports, investments, or simply getting on with their Industry 4.0 transformation. Whatever the desired outcome, we find that willing and ambitious project participants who are working towards aligned objectives from the outset are more driven to achieve that return on investment in the end. They also have a measurable success factor during the project.

The third challenge: embracing risk

In the world of manufacturing, business leaders tend to focus on short to medium-term gains, based



Determining a ROI on R&D requires foresight from all parties.

on cost analysis and estimates for the next one to three years. A decision whether to invest in more design and engineering or expand a product line, for example, would be based on the likelihood of a positive ROI.

An R&D journey, on the other hand, can be much longer-term – and by its nature higher risk. Companies that deliver genuine innovation understand their investment may deliver no return or a negative return, and are not afraid of failures. The ongoing challenge is de-risking a project as much as practicable without impeding on the creativity required for success.

A smart way to de-risk R&D investment is through collaboration – connecting businesses with the right people and resources that they might otherwise be unable to access. CRCs are a great vehicle to enable this, as well as further de-risking through co-funding of cash towards projects. As an

example, IMCRC matches industry cash invested in collaborative R&D projects on a dollar for dollar basis, which (with the value of in-kind costs such as access to facilities) delivers a total project investment of more than five times the industry cash contribution, which is pretty compelling from an ROI perspective.

And we do not just connect companies with the scientists and engineers of our research partners. Take, for example, the collaboration between global medical technology company Stryker, RMIT University, the University of Technology Sydney (UTS), and St Vincent’s Hospital. While RMIT researchers are working on the R&D, the UTS Business School has been busy preparing a business case and go-to-market plan for the project. We believe an important part of de-risking a collaborative R&D project is to ensure not only the research but also the business case and strategic plan are market-leading.

The solution: focusing on the what, why, and how

Whenever you bring industry and research organisations together, key to success is overcoming any perceived barriers to achieving a ROI.

Successful projects will focus from the outset on what is possible and get aligned on why a project is worth investing in, the critical success factors, and what de-risking levers are available. Marry these with a good cultural fit between partners and great outcomes are possible. We know this, as we see it happen.

Ultimately, Industry 4.0 is about embracing new and innovative ways of working and thinking. And with companies around the world partnering up with research organisations to rapidly transform their businesses and the products and services they provide, Australian manufacturers must be prepared to take a leap of faith and embrace collaborative R&D.