



Comment

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Towards an Industry 4.0 future – leadership for innovation



EVERY day, business leaders, in partnership with the Innovative Manufacturing CRC (IMCRC), are searching for ways to embrace and invest in the advanced and digital technologies that have become closely associated with the fourth industrial revolution, or Industry 4.0.

And it is easy to see why. In the last few years new technologies such as augmented and virtual reality, automation, 3D printing, robots, and sensors have disrupted traditional manufacturing business models and rapidly expanded the potential for what manufacturers can create.

Business leaders who are part of this revolution are starting to look beyond the technology and tools of Industry 4.0. Instead, they see Industry 4.0 as about adopting

a new approach to manufacturing – one that will empower them to continually improve manufacturing performance. As the pace of technology quickens and volumes of data increase, a new approach is essential to creating new value in a world that is constantly evolving and changing.

Below are three key actions that are helping leaders succeed on this journey.

Understand “why” and “how” new technologies will drive and deliver value

In order to truly benefit from investing in the Industry 4.0 technologies available, leaders must be well enough informed to understand “why” and “how” their companies will use the technologies

to drive value for customers, consumers and their broader ecosystems.

The key for the manufacturing sector lies in enabling small to medium enterprises (SMEs) to be well enough informed to make smart investment decisions in a global context. Encouraging effective collaboration that creates scale, know how, strength, and capability will allow SMEs to leverage the potential of Industry 4.0.

Take, for example, a small or medium manufacturer who wants to change part of their production process to incorporate additive manufacturing – or 3D printing. Before investing in a 3D printer, we would encourage the SME to question whether using additive manufacturing as a production

method will solve a real problem for customers, how it will be used to generate a better return on investment, and whether there might be an opportunity to collaborate with a partner, such as an incubator or research institute, to achieve the same result more efficiently. The answers to these questions will help reduce the risk of the SME investing in technology that would depreciate over time without producing commercial value for the business.

By setting out a plan and becoming well enough informed to understand why and how technology might be used to achieve strategic objectives, leaders can invest intelligently, efficiently, and collaboratively in solutions that deliver value.

IMCRC's David Chuter outlines how manufacturers are building a culture of innovation.



Invest in people for a resilient workforce

Before investing in new technology, leaders should focus first on developing their people and building a culture of innovation within their business – critically also developing themselves as leaders. The idea is to create a culture of people who are well-versed in the language and methods of both lean manufacturing and innovation so that they are less resistant and more resilient when the time comes to introduce new ideas. It is also important to ensure leaders understand the difference between breakthrough and step change innovation that can transform, as compared with day to day incremental improvement.

Building a culture of innovation requires regular communication with employees; creating time and space where they can have input into the business's strategic goals and plans. Whether this includes introducing continuous improvement programs, such as lean manufacturing or informal consultations with staff, empowering employees to take an active role in the organisation's future will make them more likely to be flexible and adaptable to a changing environment.

In most cases manufacturers will find many of their employees are already adept at some emerging technologies, for example tablet-based apps, and use them in their own homes. The key is to develop an understanding and willingness for employees to apply these skills in new ways to generate value both internally and externally.

Collaborate to innovate

One of the most powerful catalysts we are seeing in the uptake of Industry 4.0 has been the emergence of collaborative business models.

With new technologies developing at such a rapid rate, manufacturers (particularly SMEs) can no longer afford to just use the traditional model of purchasing expensive software and equipment and then maintaining and



Industry 4.0 is not just about the technology, but instead relies upon business leaders knowing how these will create value.



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depreciating it for many years.

An effective solution, which we have seen deployed successfully across IMCRC's manufacturing research and development (R&D) projects, is for companies to engage researchers and other SMEs to obtain fresh perspective and insights to fast-track innovation and bring products and services to market more efficiently. So far, IMCRC has helped catalyse nearly \$200 million in Australian

R&D investment that lay the foundation for innovations in the manufacturing, medical technologies, building and construction, new energy, mining, automotive, and defence sectors.

Last year, we rolled out our proprietary futuremap education program to manufacturing SMEs across the country, which is designed to help them assess their current and desired state of business and digital maturity and

identify the "why" and "how" of Industry 4.0. What we are finding is that businesses continue to resist collaboration – perhaps due to a perceived sense of competition and an outdated view that companies must make their own way to succeed.

Since 2017, the IMCRC has operated as a catalyst for manufacturing businesses seeking to join the Industry 4.0 movement, connecting them with other like-minded businesses and researchers who can help build knowledge and drive both competitiveness and innovation.

Those well on the journey understand their "why" and their "how" – which has enabled them to be clear about "what" they need. Successful implementation of Industry 4.0 is then dependant on the "who".