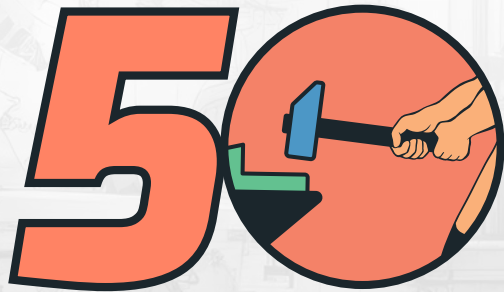


@AuManufacturing



# *Most innovative manufacturers*

## 2023 AWARDS REPORT

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*We extend our sincere gratitude for the support that made this 2023 campaign possible.*

Australia's 50 most innovative manufacturers simply would not have been possible without our sponsors.







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**Brent Balinski**  
Editor and co-founder,  
[@AuManufacturing](#)

# INTRODUCTION

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*Though our nominee list is not short on startups or world-class technology, these things on their own do not constitute innovation.*

When we began this campaign in March, we made no mention of startups, and spelled out a clear message that “every Australian manufacturer innovates in one way or another”, and that we wanted to learn about some of the ways and celebrate them.

We enlisted the help of human-centred design consultancy WAVE Design to help write nomination criteria, and we selected a judging panel made up of sponsors and independent experts. We wanted the end results to be credible, to be about innovation rather than some of the things it is sometimes confused with, and for this campaign to be open to all kinds of manufacturers.

We were very happy with the response from our community, with 76 nominations. One was unusable and the other was a duplicate, so our list stands at 74. Still: a result we’re more than happy with, and a collection of some incredibly impressive manufacturers of all kinds, making

everything from environmentally-friendly wet wipes to hypersonic aircraft.

Looking through the judges’ picks for the eventual Top 10, which includes only three companies that are in an obvious startup phase, some things become clear.

One is that each highlighted the importance of collaboration in their nomination, whether it was among different levels of their own company, with other companies, with universities and other research institutes, or – of course – with their customers in the process of understanding what problems need to be solved. Generally it was all of the above.

Related to this, if I re-read nominations from the Top 10, the importance of culture also stands out pretty strongly as a driver of innovation. Here are some relevant quotes:

- “Staff are empowered to contribute thoughts and ideas at all levels. The company structure is deliberately flat to encourage this.”



experiences, and ideas. This, in turn, can foster a culture of innovation that is open to new ways of thinking and problem-solving.”

It’s a more appealing picture of innovation than the one that’s sometimes presented. And that’s especially unfortunate, because innovation is important for any company, big or small, startup or centuries-old. It drives improvement and prosperity at a company and an economy-wide level.

It’s about understanding and solving problems that need to be solved, as voted by the market, in ways that haven’t been done yet. (That’s one take. Read on to find many others from the innovators themselves.)

We’re thrilled to present some of these highlights from our Australia’s 50 most innovative manufacturers 2023 campaign with you.

There are examples of startups and of high technology, sure, but we’re confident the companies involved leave you with a better-rounded concept of what innovation involves, and that we can all learn a few things from them.

- “ANCA’s own employee engagement survey indicates that 85% of staff strongly agree that they are encouraged to come up with better ways of doing things. This is 11% higher than the manufacturing 2020 average and global 2020 average indicators.”
- “We foster a culture that values and encourages innovation at all levels of the organisation. Our employees are empowered to share their ideas, experiment, and take calculated risks.”
- [As a demonstration of a commitment to innovation] “Keeping our staff up to date with context and strategy / approach so theirs is a shared vision.”
- “AIS trusts in the creativity of each individual and works from the inside out to improve business processes and products.”
- “By promoting diversity and inclusivity within the company, MGA Thermal can access a wider range of perspectives,

# MEET THE JUDGES

*Our judges were selected due to their professional experience in and around manufacturing.*

Our judging panel members' experience includes industrial software and automation, human-centred design, policy, communication and more.

It is a pleasure to introduce you to our judges, each of whom dedicated a significant amount of their time and applied a significant amount of their wisdom to score all the submissions. Here is a little about those who have donated their time to the task.



**Bruce Minty**  
*Senior Product Manager, MYOB*

Bruce is an Enterprise Resource Planning (ERP) software expert with over 20 years of experience across product management, marketing, finance, solution engineering and business development.

His consultative approach and focus on business process improvement have helped transform midmarket and global organisations across both Manufacturing and Wholesale Distribution sectors.



**Dr Munib Karavdic**  
*CEO, WAVE and Conjoint Professor Design and Innovation, AGSM/UNSW*

Dr. Munib Karavdic is recognised globally as an expert in innovation and design. A multi design and innovation award winner, he helps leaders and their organisations to innovate and drive change with confidence and clarity from strategy to implementation.

His approach is achieved by building innovation capabilities underpinned by human-centred design (HCD) as a critical driver of the organisation's growth and customer-centric strategy.

As Conjoint Professor in Design and Innovation at AGSM/UNSW, he is involved in research and supports MBA students by sharing his insights and practical expertise from his industry work.

Munib is an internationally acclaimed speaker on innovation and design and has delivered keynote addresses at many industry conferences and forums in Australia and around the world. destination for a fast-growing and dynamic sector.



**Bradley Trewin**

*National Sales and Business Development Manager,  
Bosch Australia Manufacturing Solutions*

Bradley is an innovative Engineering Manager with a wealth of experience at Bosch in both Manufacturing and Sales with a focus on process improvements and innovative technical Solutions.

Having experience as a design engineer, manufacturing engineer, project manager, prototype sample shop manager, automation engineering manager and commercial manager in multiple international locations

Bradley has developed strong engineering, commercial and management capabilities across all phases of the product design, manufacturing and sales life cycle.

Most recently, Bradley has managed the design and delivery of 27 fully automated production lines for Ellume's COVID diagnostic devices.



**Rodney Ryan**

*State Manager for SMC Corporation,  
Victoria and Tasmania*

Rodney Ryan has made a name for himself as a resilient, hands-on leader in the automation sector in his 12-plus years at SMC Corporation.

Rodney is responsible for sales teams in two of SMC's key states. He prides himself on developing sales strategies to help bolster SMC's market share and ensure the growth and development of his team members.

Rodney offers a wealth of experience in process control, valves and controls, automation, robotics, pneumatics, electro-pneumatics and electric drivers across an array of sectors and applications. He loves an engineering challenge, with special interest in process automation.



**Tyson Bowen**

*Manager, PR and Communications, AMGC*

Tyson began as Manager, PR and Communications for AMGC in December 2019. He has held senior communications roles for technology and other businesses over the past 17 years, with most of his career spent in the automotive industry.

After studying two years of geomatic engineering, he shifted to public relations.

Tyson's background combining engineering, automotive and telecommunications gives him an appreciation of the technical as well as the importance of conveying this in a compelling and accessible way.





***Our judging process is a testament to our commitment to recognising true innovation, cherishing originality and celebrating creativity.***



# JUDGING CRITERIA

*In case you have any queries about what led to scoring decisions, we are sharing what judges were evaluating.*

The process was carefully curated to balance rigorous standards without imposing excessive demands on our innovators. We extend our gratitude to WAVE Design for their invaluable input on the nomination criteria.

Upholding the principles of transparency and impartiality, all judges adhered to the following guidelines:

- The final, total score for each nominee was an average of each of the scores awarded by judges.
- The judges excused themselves from assessing a company if they (as an individual or company) had a financial interest in it.
- The judges were asked to be consistent marker across applications.
- The judges were asked to submit no score if they felt an applicant had not bothered answering a question.
- The judges had to treat the nomination material as confidential.

**Below is what each question was scored out of:**

CRITERIA	SCORE
How does your company approach and conduct innovation?	/5
How does your organisation demonstrate its commitment to innovation?	/10
What are some relevant initiatives that are in place? How have they contributed to success?	/10
What has been the most valuable recent innovation at your company?	/5
What was the problem you were solving?	/20
How did you approach understanding this problem?	/20
How did you validate the solution?	/20
How did you launch the solution?	/20
How was the solution received in-market or operation?	/10
How did this benefit your employees, customers, delivery partners or key stakeholders?	/20
<b>Total</b>	<b>/160</b>

# WHAT IS INNOVATION?

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*Innovation is critical to progress and prosperity, at both a company and a national level. However, everyone brings their own definition and understanding of the subject. Here we present some quotes about the topic from those interviewed during our campaign.*







“To me, innovation is the continuous and iterative process of improving a product or service. And this is a cyclic process, because a product or service has always got scope to improve.

“So to improve something, go through a process by which that product or service is now better, and then get feedback on ways to improve it further based on new demands in the market or based on the fact that things keep evolving. And then go back and improve that once again through the same process. So, to me, that is innovation.”

**Miheer Fyzee**

*Product Development Coordinator,  
Workspace Commercial Furniture*



“I’d say it’s solving problems in new and unique ways, with the key focus being on the problem not on the product.”

**Lachie Smart**

*General Manager, Smartline Medical*



“To us, innovation really is about... pushing the boundaries and always looking at new opportunities for growth and improvement of our team members. And we’ve got a culture where we try to foster creativity and collaboration amongst our staff.

“The other aspect to innovation is we’re always looking at trying to not necessarily accept what can’t be done, really to understand why it can’t be done and is there a way to try and overcome that problem and develop a solution around that.”

**Paul Falzon**

*General Manager, Advanced Composite  
Structures Australia*



“It’s a mindset really, in terms of always talking to the customer and listening to the feedback...Innovation for me is really about talking to the market and continually asking questions: ‘Hey, what could we do, how could we improve this?’ And that leads to joint innovation... rather than an internal ‘Let’s deliberately innovate here.’”

**Corey White**

*Co-founder, The Hygiene Co.*

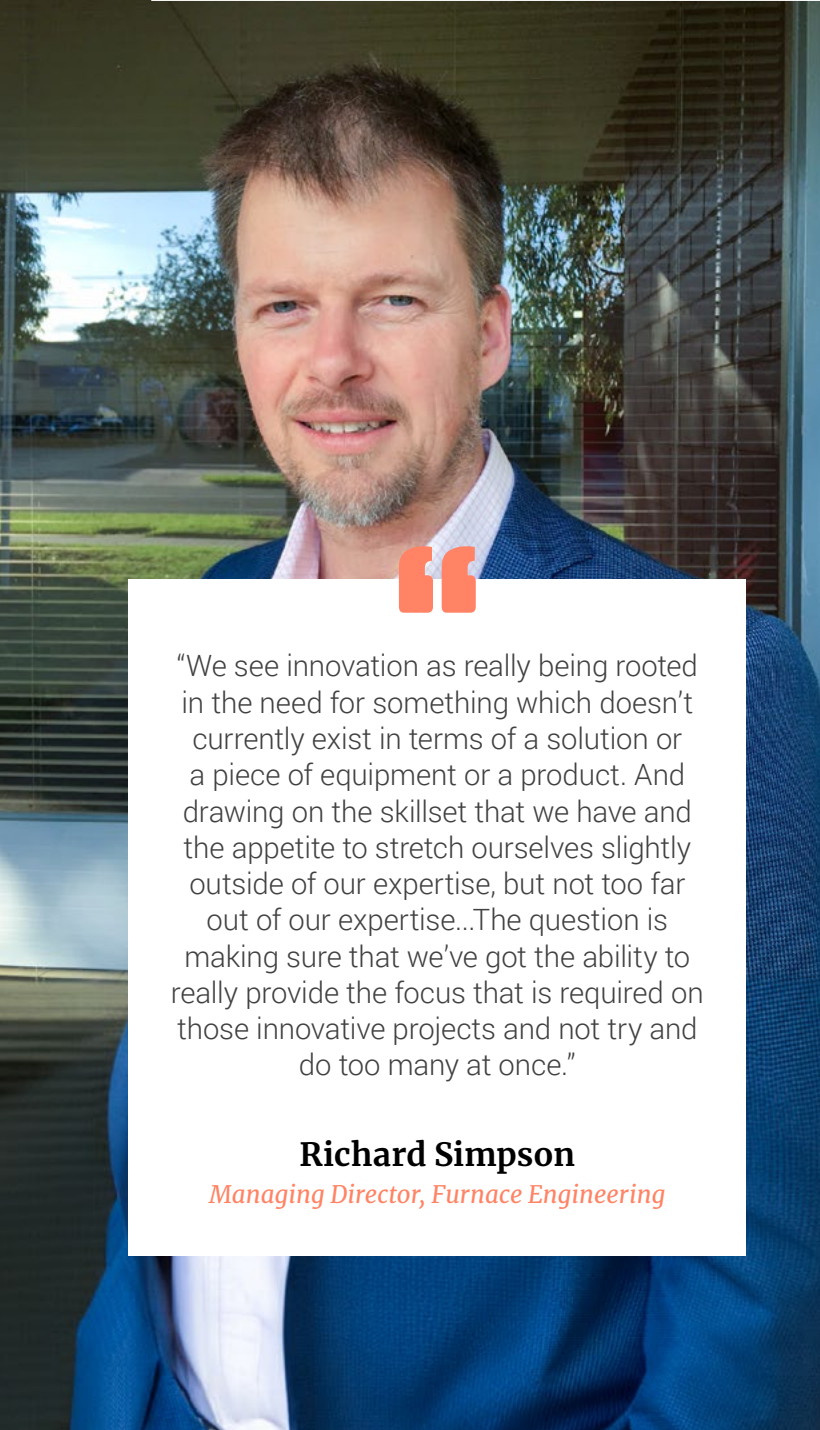


“The short version is innovation is really about questioning the parameters and testing and finding out whether your theories are correct or not.”

**Dario Valenza**

*Founder, Carbonix*





"We see innovation as really being rooted in the need for something which doesn't currently exist in terms of a solution or a piece of equipment or a product. And drawing on the skillset that we have and the appetite to stretch ourselves slightly outside of our expertise, but not too far out of our expertise...The question is making sure that we've got the ability to really provide the focus that is required on those innovative projects and not try and do too many at once."

**Richard Simpson**

*Managing Director, Furnace Engineering*



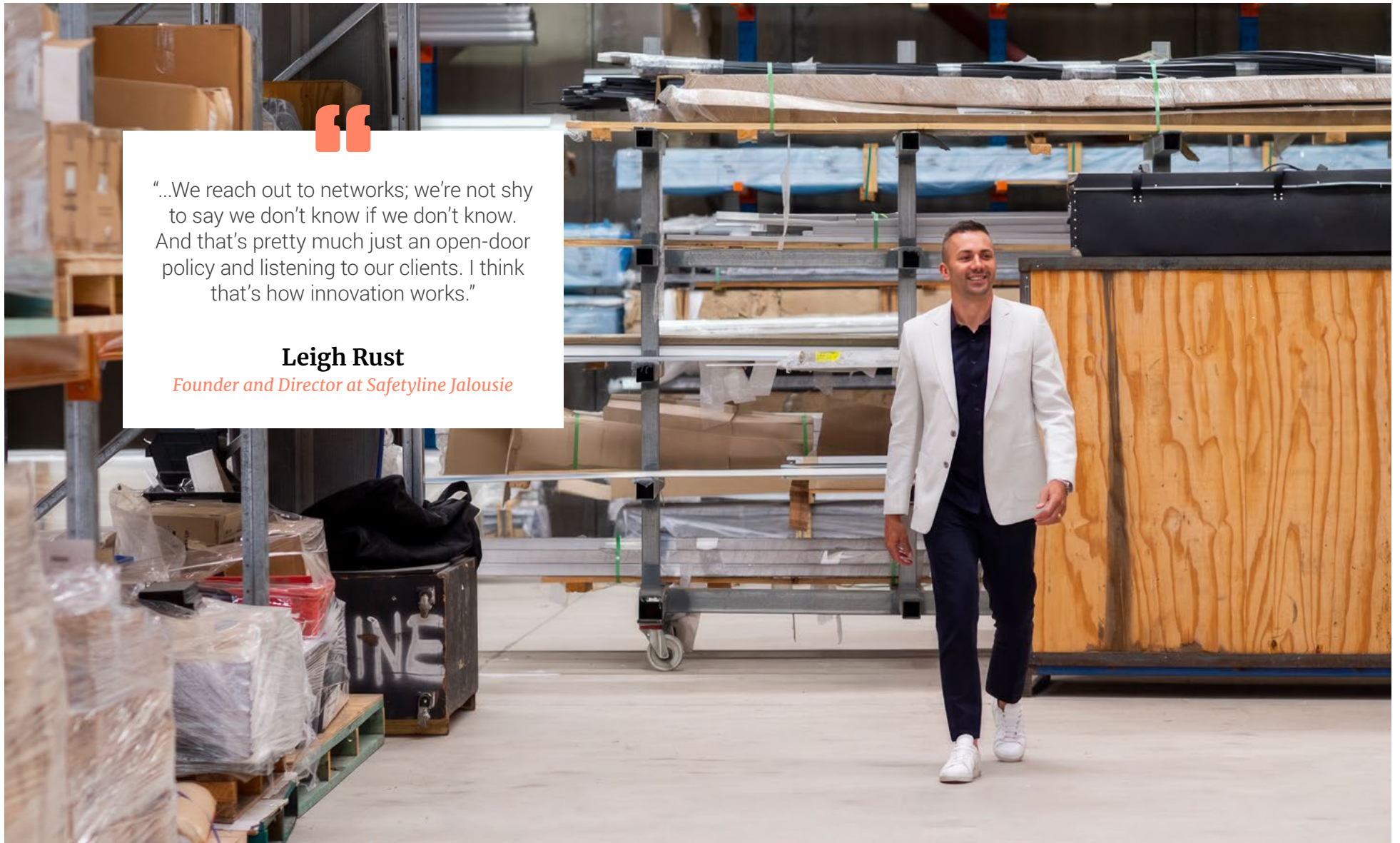
"I think it's important in terms of how we frame innovation... It's not just a technological advancement; it's a whole host of culture, of process steps...We always make sure that [we are] solving a problem. There's no point in innovation for innovation's sake. You've got to actually be solving a problem. And for us, if you think about the way the company was originally formed, that's at the heart of it... The science was the bit that came last."

**Paul Riley**

*CEO, Samsara Eco*

**SAM.**  
PAUL  
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“...We reach out to networks; we’re not shy to say we don’t know if we don’t know. And that’s pretty much just an open-door policy and listening to our clients. I think that’s how innovation works.”

**Leigh Rust**

*Founder and Director at Safetyline Jalousie*

# HONOUR ROLL

*We are delighted to present Australia's 50 most innovative manufacturers for 2023, a distinguished and deep list.*

From potentially lifesaving medical devices to new ways to 3D print to cutting-edge propulsion methods to travel through space, our most innovative manufacturers are a diverse and impressive lot. Innovation isn't just about startups or new technology, of course, and there are plenty of older, established companies that are finding new ways to stay competitive. Whatever your manufacturing business, you need to innovate. Read on to find how some of the best in the business do it.



@AUMANUFACTURING PROUDLY PRESENTS

## TOP 10 GOLD AWARD







@AUMANUFACTURING PROUDLY PRESENTS  
**TOP 50 SILVER AWARD**



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**HIGHLY COMMENDED**

- Bodd
- VAILO
- Adarsh Australia
- Calix Limited
- Varley
- EMVision Medical Devices
- TechPlas Extrusions
- SPEE3D
- FBR
- Terra Firma Industries
- CST Composites
- Kallipr
- A.H. Beard
- Resourceful Living
- Technofast Industries
- 1 MILLIKELVIN
- Furnace Engineering
- Whiteley Corporation
- CAPRAL
- Vaxxas
- NematiQ
- Key Wholesalers (Solar Bollard Lighting)
- REDARC Group
- GreenMed
- Trajan Scientific and Medical
- K-TIG
- Watkins Steel
- SEW-EURODRIVE
- Sussex Taps
- White Graphene
- Hypersonix Launch Systems
- Additive Assurance
- VXB Aerospace
- Modular Photonics
- Mining and Plant Group
- Titomic
- Voxon Photonics
- Premcar
- Samsara Eco
- The Hygiene Co

- The Smart Think
- Kite Magnetics
- Pakko
- Open Welding
- Conflux Technology
- gTET Auto
- Cyborg Dynamics Engineering
- Wireman
- Stärke-AMG
- First Light Fabrication
- AICRAFT
- XFrame
- Carbonix
- Dynamic Steel Frame
- PFI
- PCI Pharma Services
- Safetyline Jalousie
- Advanced Composite Structures Australia
- Roundwood Solutions
- Robotid Systems
- LUYTEN
- Workspace
- GPC Electronics
- Hitense Monofilament

*In this section get insights and explanations from our Top 10 innovators. In the following Q&As, you can learn from some of the manufacturers judged as the best of the best.*

*Who are they? How do you know what problems their customers care about? How do they act on this? Read on to find out.*

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# GOLDEN VOICES



## WHAT DOES YOUR COMPANY DO, IN 50 WORDS OR LESS?

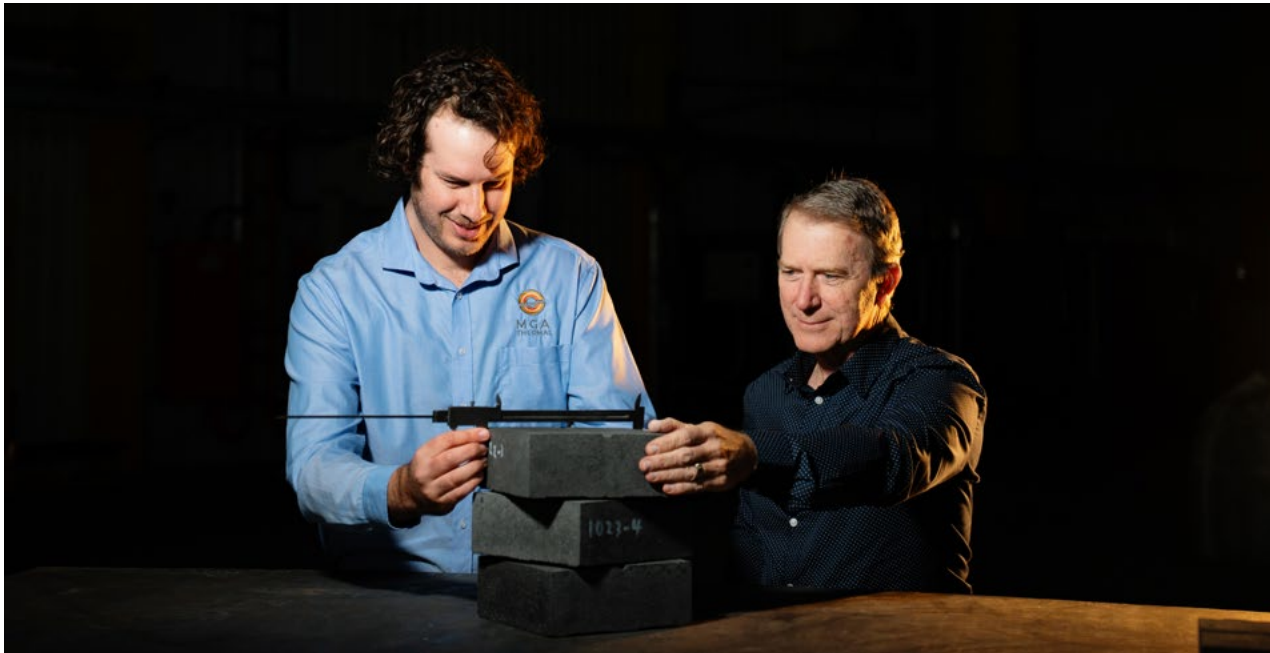
MGA Thermal's breakthrough technology is an entirely new form of long-duration thermal energy storage that is making 24/7 renewable energy a reality.

We manufacture MGA Blocks, which store and deliver thermal energy while remaining outwardly solid, enabling 24/7 clean steam discharge in the scale of MWhs to GWhs for industrial processes.

## WHO AND WHAT DRIVES INNOVATION AT THE COMPANY?

The MGA Block is a breakthrough new material that was developed by our CEO and co-founder Erich Kisi. At MGA we are doing something that hasn't been done before. We find new, unforeseen challenges and we innovate every day to solve them.

Innovation is the core of what we do, so much so that we have a key value of continuous learning. This foundation of curiosity exists in our team originating from the University of Newcastle, and the innovation mindset has continued to grow.



We continue to innovate to find the best methods of storing and extracting energy from MGA materials. We have an advanced R&D lab and department that focuses on the material, and throughout the company we innovate to solve our customers' most pressing needs.

**WHAT IS THE PROCESS TO UNDERSTAND WHAT YOUR CUSTOMERS WANT AND DELIVER ON THIS?**

MGA Thermal is agile, in our product and positioning. The clean tech and energy storage industry is growing and changing so quickly that we re-evaluate and innovate continuously.

Our Business Development and Technical teams build open lines of communication with the customer to ensure our Thermal Energy Storage System (TES) supports their specific needs. Through this, we've found critical information that has advanced our TES to meet their charge, storage and output requirements.

Client feedback has played a pivotal role in guiding our design choices, taking us through iterative innovation cycles and various lab-scale validations to develop our energy storage to closely fits with client needs. Innovation and improvement are constantly happening to ensure our product meets the market gaps.

**WHAT ROLE DOES CULTURE PLAY IN INNOVATION AT YOUR BUSINESS?**

MGA Thermal embraces Diversity, Equity, and Inclusion (DEI). Diversity brings a wider range of perspectives, experiences and ideas, which in turn fosters a culture of innovation, open to new ways of thinking and problem-solving. Inclusion means people feel safe to be themselves and provide solutions that may be different from the wider team.

We have an active DEI Committee which ensures our commitments to diversity and inclusion are informed and complete, leading initiatives such as inclusive language, awareness pieces, and cultural activities.

By building a culture without silos, a culture where everyone feels psychologically safe to be themselves and speak their ideas, MGA Thermal empowers the diverse skills and expertise of our team to generate innovative solutions.

**WHAT ARE YOU CURRENTLY WORKING TOWARDS?**

MGA Thermal is currently completing our demonstration unit, which is supported by the Australian Renewable Energy Agency (ARENA) and global energy giant, Shell. The demonstration unit is 5MWhs, approximately the size of a shipping container, and stores enough energy to power over 135 homes for 24 hours.

Our production line at our Tomago factory is currently being commissioned. It will be capable of manufacturing over 1000 MGA Blocks a day, or 1MWh. This production



scale-up is the first step to our vision of making 24/7 renewables a reality. We're aiming to abate approximately 30 million tonnes of CO2 by 2030: that's 33,816 commercial flights from Sydney to Los Angeles.

### WHAT IS SOMETHING WE NEED MORE OF TO LIFT INNOVATION AMONG THE NATION'S MANUFACTURERS?

The key to our innovation mindset is both sustainability and diversity. For us, they go hand in hand.

We believe with a diverse range of knowledge, experiences, perspectives, opinions and ideas we are more sustainable as a team and business. Diversity enhances our ability to solve problems and innovate. Sustainability and diversity are essential to being a leading manufacturer.



### Find out more on our Podcast!

Check out **Episode 13 + 59** of our podcast **@AuManufacturing Conversations** to hear from Arden Jarrett, MGA Thermal's Marketing Manager - Brand, and the company's Chief Commercial Officer Mark Croudace.



### WHAT DOES YOUR COMPANY DO, IN 50 WORDS OR LESS?

Eco Detection revolutionises the measurement, reporting and verification of water quality with its fully autonomous technology solution, providing real-time laboratory grade analysis. Moreover, we go beyond water quality monitoring by actively contributing to environmental sustainability through generation of carbon and nutrient offsets. By helping water utilities reduce energy use, industry monitor nutrient runoff and measuring carbon in seawater, Eco Detection plays a

crucial role in protecting ecosystems, promoting agricultural sustainability and ensuring a healthier future for all living things.

### WHO AND WHAT DRIVES INNOVATION AT THE COMPANY?

Innovation at Eco Detection is driven by a diverse team of passionate individuals, including scientists, engineers, data analysts and industry experts. They bring together their expertise and collaborate to develop cutting-edge solutions for nutrient management and wastewater treatment plant monitoring. The company's commitment to innovation is also fuelled by its strong customer focus, actively seeking feedback and understanding customer needs. Additionally,

our culture of continuous learning, experimentation and embracing new technologies plays a vital role in driving innovation. The collective drive, expertise, customer-centric approach and culture of innovation form the foundation for driving progress and pushing the boundaries of environmental monitoring technology.

### WHAT IS THE PROCESS TO UNDERSTAND WHAT YOUR CUSTOMERS WANT AND DELIVER ON THIS?

To understand and deliver on customer needs, Eco Detection follows a customer-centric process. It begins with active communication and engagement with customers to gather feedback, understand their challenges and identify specific requirements. This information is then analysed and incorporated into the development of tailored solutions. Continuous dialogue and collaboration with customers through the process ensure that the final products meet their expectations. This iterative approach enables Eco Detection to deliver customised solutions that address customer needs effectively and provide maximum value for their operations.

### WHAT ROLE DOES CULTURE PLAY IN INNOVATION AT YOUR BUSINESS?

Culture plays a pivotal role in driving innovation at our business. We foster an environment that values creativity, encourages open communication and embraces a growth mindset. We prioritise collaboration, empowering employees to share ideas and perspectives freely. We promote a culture of continuous learning and

experimentation, encouraging employees to take risks and explore innovative solutions. By nurturing a culture that supports and rewards innovation, we create an atmosphere where new ideas can flourish, leading to the development of ground breaking solutions and driving our business forward in water measurement, reporting and verification.

### WHAT ARE YOU CURRENTLY WORKING TOWARDS?

Eco Detection is currently focused on several key initiatives. Firstly, we are working towards further enhancing our real-time monitoring technology, leveraging advanced sensors and data analytics. We are also investing in research and development to expand our capabilities in the optimisation of wastewater treatment processes and the measurement of carbon sequestration in coastal ecosystems to generate carbon offsets. Additionally, Eco Detection is actively collaborating with industry partners and water utilities to develop tailored solutions that contribute to their overall sustainability goals. These efforts reflect our commitment to innovation, efficiency and environmental stewardship.

### WHAT IS SOMETHING WE NEED MORE OF TO LIFT INNOVATION AMONG THE NATION'S MANUFACTURERS?

To lift innovation among Australia's manufacturers, there is a need for increased investment in research and development, fostering a culture of innovation and promoting collaboration between industry and academia. Government procurement can play a crucial role by

creating a market demand for innovative products, encouraging manufacturers to invest in research and development, adopt new technologies and enhance their competitiveness. This, coupled with financial incentives, knowledge-sharing platforms and collaborative partnerships, can drive innovation, boost productivity, and elevate Australia's manufacturing sector to new heights of success.







### WHAT DOES YOUR COMPANY DO, IN 50 WORDS OR LESS?

Uuvipak is the world's first circular packaging solution designed to replace single-time use plastics with clean organic food waste. Uuvipak's patent pending materials are sustainable as they are 100 per cent home compostable and biodegrade naturally, leaving no harmful traces in the environment. Uuvipak aligns with the United Nations

Sustainable Development Goals 12, 13, 14 and 15, which recognise the impact of plastics, microplastics and pollution on the ecosystem.

### WHO AND WHAT DRIVES INNOVATION AT THE COMPANY?

At Uuvipak, our innovation is driven by a powerhouse team of passionate individuals with a shared background in science and technology. We are driven by a relentless pursuit of excellence and a deep commitment to creating a positive

impact on the world. Each member of our team brings a unique perspective and expertise, fueling our collective drive to push the boundaries of what is possible. It is within this diverse and dynamic environment that innovation thrives, where ideas are nurtured, and groundbreaking solutions are born. We are inspired by the potential to reshape industries, challenge the status quo, and leave a lasting legacy of sustainability and positive change. Together, we are driving innovation forward, guided by our shared vision and united in our determination to make a difference.

### WHAT IS THE PROCESS TO UNDERSTAND WHAT YOUR CUSTOMERS WANT AND DELIVER ON THIS?

Extensive market research was conducted to identify potential target markets for Uuvipak's sustainable packaging products. The research involved visiting over 100 cafes, food retailers, catering companies and larger chains across Brisbane and Australia to understand their current use of packaging. We identified two major segments that will benefit from our products: large B2B customers, including

catering companies and franchisees, and smaller food retailers we can supply through distributors.

Most venues currently use coffee cups marketed as "bio", which are industrially compostable. However, over 40 per cent of the venues visited during our research expressed interest in Uuvipak as a valid alternative to their existing packaging.

### WHAT ROLE DOES CULTURE PLAY IN INNOVATION AT YOUR BUSINESS?

Our diverse founding team has brought expertise and an open mind and we hope this will attract great talent. Over the next five years, we envision our team will grow to include people from all walks of life, genders and nationalities.

By employing and empowering women, especially in key communication and engineering roles, we aim to create a great working culture for all Uuvipak employees.

We believe that to create a strong and resilient team, we have to work on creating an inclusive and balanced culture, where all ideas and opinions are valued and taken into account. We envision Uuvipak to be an exciting and fulfilling workplace for everyone.





**WHAT ARE YOU CURRENTLY WORKING TOWARDS?**

What is something we need more of to lift innovation among the nation’s manufacturers?

We are currently working towards delivering our Kickstarter customers and also to deliver the big B2B customers we have been approached in the past one year. Imagine the possibilities if every ambitious startup and visionary entrepreneur had a fair chance to tap into these valuable resources! The current financial struggles faced by startups in their early stages hinder their ability to unleash their full potential. By broadening the criteria and streamlining the process for government grants, we can unleash a wave of innovation that will revolutionise the Australian manufacturing landscape. This exciting change will empower daring innovators to bring their groundbreaking ideas to life, fueling economic growth, job creation, and propelling our nation to the forefront of innovation.



**WHAT DOES YOUR COMPANY DO, IN 50 WORDS OR LESS?**

AIS Water designs and manufactures commercial and residential pool chlorinators for fresh, salt and mineral water pools, and commercial quality anode material. AIS' brands include: AutoChlor (salt water pools), EcoLine (fresh water pools), MineralChlor (mineral water pools), and AIS Genuine Anodes. AIS Water’s technology operates in over 55 countries.

**WHO AND WHAT DRIVES INNOVATION AT THE COMPANY?**

Innovation is part of AIS Water’s company DNA. The ‘I’ in AIS stands for innovation. AIS has its own in-house research and development Team and has developed many world-firsts in water disinfection technology. The company’s CEO and co-owner, Elena Gosse, is recognised as an industry leader, ensuring AIS Water is in a perpetual state of innovation and evolution.



**Find out more on our Podcast!**

Check out **Episode 8** of our podcast **@AuManufacturing Conversations** to hear from Uuvipak co-founders Dr Shafali Gupta and Andy Epifani

### WHAT IS THE PROCESS TO UNDERSTAND WHAT YOUR CUSTOMERS WANT AND DELIVER ON THIS?

AIS Water enjoys regular contact with key stakeholders, including customers, suppliers and government, to ensure it continues to develop products that meet and exceed industry expectations. As an Australian owned and operated manufacturer the company has the ability to be agile and adapt quickly to key issues or trends impacting the industry – for example, water saving technology, and producing commercial quality anodes. AIS Water's anode facility is the only one of its kind in the Southern Hemisphere.

### WHAT ROLE DOES CULTURE PLAY IN INNOVATION AT YOUR BUSINESS?

AIS Water's approach to innovation extends way beyond the factory walls. The company's vision is "enhancing life", whether that be saving the planet's water through AIS's innovative water disinfection technology or enhancing the life of its staff and the communities in which it works and lives. AIS's workforce is inclusive and made up of people from 16 different nationalities, mature-age staff and people with disabilities with each bringing new ways of thinking and working to the company. We trust in the creativity of each individual and works from the inside out to improve business processes and products.

### WHAT ARE YOU CURRENTLY WORKING TOWARDS?

AIS Water is exploring new markets and industries for its products, including the U.S.A. The company is developing a new chlorinator that will be released in late 2023 and revolutionise the industry. With AIS's new commercial anode facility now fully operational, the company is enjoying the ability to be a supplier of anodes to other businesses, rather than previously manufacturing for its own use only.

### WHAT IS SOMETHING WE NEED MORE OF TO LIFT INNOVATION AMONG THE NATION'S MANUFACTURERS?

AIS Water is a strong believer in collaboration, not competition. Manufacturers must work together more to share knowledge, celebrate innovation and elevate the Australian manufacturing industry as a whole.

Local manufacturing must be championed by all levels of government with less red tape and more support including specifying Australian manufactured products for inclusion in major projects.



### WHAT DOES YOUR COMPANY DO, IN 50 WORDS OR LESS?

ANCA is a world-leading manufacturer of CNC grinding machines, motion controls, automation, and manufacturing solutions. With global headquarters in Melbourne, ANCA exports 99 per cent of products to customers worldwide, servicing 45 countries and delivering leading solutions from offices in the UK, Germany, China, Thailand, India, Japan, Brazil, and the USA.

### WHO AND WHAT DRIVES INNOVATION AT THE COMPANY?

ANCA was founded in 1974 and for nearly 50 years its co-founders, Pat Boland and Pat McCluskey, have been driving innovation with their passion for technology. ANCA has a vibrant hub of engineering at its Bayswater headquarters, and this team of innovators, along with ANCA's 1,300 global employees are committed to pushing the boundaries of what is possible.

Innovation at ANCA means continually being first to market with new technology that meets a gap in the market and solves customer challenges. The company's growth has been driven by innovations, including patented technologies, that have revolutionised the

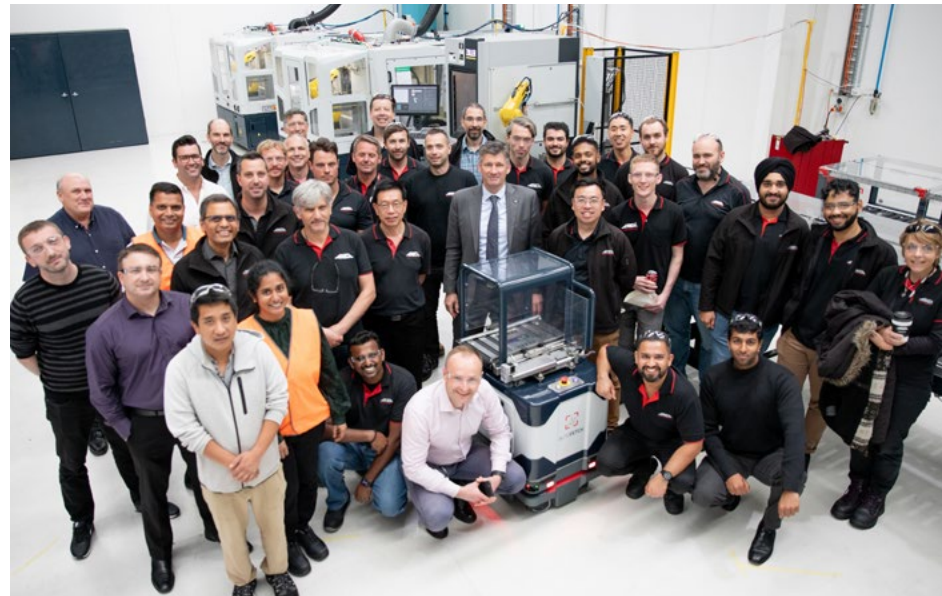
production of cutting tools and pushed manufacturing forward.

ANCA has a dedicated Research and Technology team who are committed to inventing and working with new technology to advance the company and industry forward. ANCA has a culture of innovation, launching new products every year to expand to new markets and deliver on our commitment to lower cost and higher quality tools for our customers.

**WHAT IS THE PROCESS TO UNDERSTAND WHAT YOUR CUSTOMERS WANT AND DELIVER ON THIS?**

Strong relationships with our customers through our local teams and aftermarket service and support helps us to immerse ourselves in the market and interact regularly with customers to understand their specific needs. Innovation often starts with our customers and comes from the desire to solve customers' production challenges and meet and anticipate market needs.

Due to ANCA's strong vertical integration, we have the capability to create custom and bespoke solutions for our customers. This flexibility to partner with our customers is a point of difference in the industry and our custom solutions not



only deliver on customer needs but help to drive our innovation pipeline.

**WHAT ROLE DOES CULTURE PLAY IN INNOVATION AT YOUR BUSINESS?**

A big one! As an advanced manufacturing business, innovation is at our core and critical to success. We foster openness and collaboration with ideas welcomed from both inside and outside the company. ANCA is proud to have a diverse and inclusive culture, spurring a rich tapestry of ideas. Our in-house capabilities mean we can embrace agility and adaptability,

which encourages flexibility and iterative approaches and help us to keep a curious mindset.

**WHAT ARE YOU CURRENTLY WORKING TOWARDS?**

We are very proud of our world-first ANCA Integrated Manufacturing System (AIMS) for connected and automated cutting tool manufacturing and are continually working on how we can take this further.

ANCA is also set to expand our ULTRA series of grinding machines. ANCA technologies such as nanometre control

and patented MTC thermal management and process control are enabling the highest quality and accuracy for cutting tools in the world.

**WHAT IS SOMETHING WE NEED MORE OF TO LIFT INNOVATION AMONG THE NATION'S MANUFACTURERS?**

Talent and technology. Harnessing our talented workforce and matching the academic with the practical elevates our ability to continually surprise the market with our latest technology. We have experienced engineering and research specialising in a large range of disciplines. This is complemented with our machining and production teams that are bolstered by our apprenticeship program who experience specialised and applied training. Our vertical integration also strengthens our aptitude for innovation and gives our teams real life experience in any number of applications.

Embracing and adopting new technologies such as automation, robotics, artificial intelligence, Internet of Things (IoT), and advanced data analytics can significantly enhance innovation in manufacturing. At ANCA we consider technology to be in our DNA and it drives our commitment to innovation.



# PIONEERS UNCOVERED

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*Here we spotlight some of the less-well-known companies  
– some emerging, some are simply quiet achievers –  
that have captured our attention during the campaign.*



#### TOP 50 SILVER AWARD WINNER

Furnace Engineering is a bona fide manufacturer's manufacturer. Besides having manufacturers as the core customers for their custom-made ovens and furnaces, it would probably be unusual if somebody outside of the industry had heard of them.

Though their clients include a who's who of industrial leaders – thermal processing is used for everything from mineral extraction to strengthening metals to electronics – the Notting Hill-based engineering company doesn't make a thing about it.

As with certain other high-performing business-to-business manufacturers, discretion is an important part of the job. It might be an occasional frustration from a marketing point of view, but that's that.

"If we jump out there and [are] willing to talk about everyone's processes, whether they've given us permission or not, it's probably not culturally aligned with what a lot of our customers would expect," Furnace Engineering's Managing Director, Richard Simpson, tells @AuManufacturing.

"It's become the default setting... Culturally we're comfortable with the idea that people will be able to see from what we do that they don't need to know who we do it for."

The company employs between 60 and 80, depending on business conditions. At a headcount of 80, there would be

about 30 engineers and 30 production workers.

Every piece of equipment it makes is customised. A running joke, shares Simpson, occurs with each bit of repeat business.

"The guys will tell me, 'we succeeded in getting another repeat of that project.' And I'll wait," he says.

"And they'll say, 'Except for...'. And then begins usually a reasonable length list of different features that are required for our customers."

Simpson's father Bob started Furnace 55 years ago after a career in manufacturing, engineering and consulting. Unsurprisingly, there have been various periods of adaptation along the way.

Simpson joined in 1994 after beginning his career



at Ford, working in engineering design and project management, then sales, then taking over management of the firm in 2000.

At about that time, two significant shifts were underway, both linked to globalisation.

Firstly, the car industry was under “constant threat” and Furnace needed to diversify into other markets.

Secondly, a licensing model had been successful for a long time, but the world was shrinking and it became more desirable for companies to deal with – and manufacture for – their international customers directly.

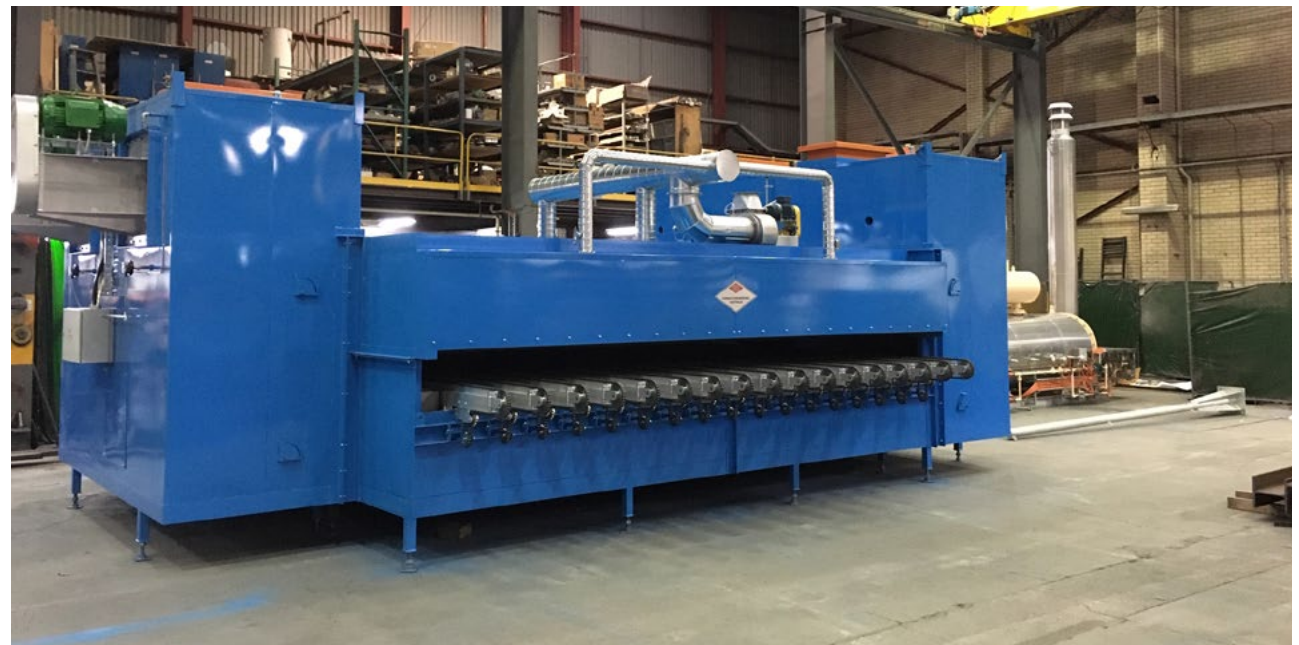
“So we found ourselves in a position of having to parlay our experience and knowhow into products that we developed ourselves,” adds Simpson.

“And we managed to successfully do that and make that transition away from dependency on foreign technology to being, by and large, a company that makes its own designs and builds its own equipment to those designs.”

The carbon fibre side of Furnace’s business has grown up alongside that industry in Australia, particularly around Geelong. An award-winning project involved work on the pilot line for the Carbon Nexus facility, located at Deakin University’s Wurn Ponds campus.

Though it’s a sector that – with a high representation of aerospace companies – has slowed in the Covid era, it still presents opportunities to progress as a company.

A recent project in collaboration with Deakin University developed a new cyclisation furnace. This brought lab



research on more energy-efficient carbonisation of precursor material further into technological maturity, with a small-scale production furnace delivered and Simpson’s company awarded a related patent.

It’s an example of a stretch innovation project. Furnace aims to complete at least one such project a year, though to not spread itself so thinly that it can’t do its best work.

Innovation for the company is described in terms of newness plus an appropriate amount of stretching.

“We see innovation as really being rooted in the need for something which doesn’t currently exist in terms

of a solution or a piece of equipment or a product. And drawing on the skillset that we have and the appetite to stretch ourselves slightly outside of our expertise, but not too far out of our expertise,” explains Simpson.

“I think that the desire to do innovative work has been there within the team for all the time that I can remember.

“The question is making sure that we’ve got the ability to really provide the focus that is required on those innovative projects and not try and do too many at once...; [to] be distracted by too many things which require a high level of attention because you’re stepping slightly outside of your normal activity.”





### TOP 50 SILVER AWARD WINNER

Graphene – with its host of superlative attributes – created a lot of excitement after it was first synthesised in 2004, then after the pair responsible won a Nobel in 2010. After a while, articles started to appear lamenting a lack of commercial impact or a “killer app”.

It has found its way into some useful applications – and products like GMG’s graphene aluminium-ion batteries might be hugely successful in future – but few would argue graphene has changed the world yet.

White Graphene makes a material described as analogous to regular graphene, with “two-dimensional” layers of hexagonally-arranged atoms, though is based on boron rather than carbon.

Like their near-namesake, boron nitride nanosheets AKA white graphene come with a swag of potentially useful properties.

According to White Graphene – a joint venture between PPK Group and Deakin University – their nanosheets are 138 times stronger than 304 grade steel, have a massive surface area, and have demonstrated big antibacterial, antifouling, wear resistance and other benefits at low loadings in coatings.

“The holy grail for the past 30, 40 years has been how do you scale up the manufacturing of boron nitride nanomaterials, because when you look at our competitors, they’re only capable of manufacturing grams. Grams per month,” Lieuwke de Jong, Commercial Director at PPK Group, tells @AuManufacturing, adding that this has made prices prohibitively expensive.

“[We have solved] the mystery around mass production of high-purity, low-variability white graphene.”

White Graphene, which is a sister company to boron nitride nanotube business BNNT Technology, has been able to up output from a single gram per week to five kilograms, with capacity to scale up to 20 kilograms if needed, de Jong says.

The two-year R&D project between the company and Deakin University scientists is being put forward by White Graphene for @AuManufacturing’s Australia’s 50 most innovative manufacturers campaign.

Besides markets including gelcoats for marine users and timber coatings, White Graphene has its sights set on the emerging hydrogen market.

With their impermeability to hydrogen, boron nitride nanosheets could provide an answer to the gas’s potential to attack the integrity of steel pipes and welds.

“If you transport it through a pipeline, for instance the current gas pipeline infrastructure, the problem is that it permeates through the pipeline, through the steel, and even worse you can get steel embrittlement,” says de Jong.

“Now if you mix the white graphene with certain coatings, we can actually make those pipelines, those steel pipelines, impermeable to the hydrogen gas. And that basically means that potentially you could use the existing infrastructure in a hybrid way, so you could either transport gas or you could transport hydrogen gas.”

Like its black counterpart, white graphene is at an early stage of adoption.

Manufacture of regular graphene appears to have some way to go, both to decrease costs and increase quality.

“[G]raphene produced using top-down methods is often many layers thick, has holes or deformations, and can contain impurities,” wrote Kevin Wyss from Rice University last year.



“Factories can produce a few tons of mechanically or chemically exfoliated graphene per year, and for many applications – like mixing it into plastic – the lower-quality graphene works well.”

De Jong says inconsistencies in graphene manufacture are something his company is working to avoid, and is confident they can do what regular graphene hasn't been able to yet.

“I don't want to come across as cocky, but graphene... 15, 20 years ago promised us a lot of things. And some of those have definitely materialised,” he explains.

“Don't get me wrong, graphene is a fantastic material, but there are definitely some shortcomings. And my belief, my feeling is that white graphene will actually deliver on the promises that graphene did not deliver on.”



#### TOP 10 GOLD AWARD WINNER

For many successful Australian manufacturers, the source to their success could be described as excelling globally within a well-defined niche.

The path into this is not always linear. It certainly wasn't for Smartline Medical, which began its life in 1996 as a maker of farming and food industry machinery. Today it pioneers technology for drying and sterilising endoscopes.

“Our process in innovation has always to have a very close touch to the market,” Lachie Smart, General Manager at the Yandina, Queensland-headquartered business, tells @AuManufacturing.

“And we'd been told by one of our partners who is a thought leader in endoscopy that there's a new focus on being able to store and dry these endoscopes quickly... We started with a very basic plastic box with a little fan and a hepa filter.”

Smartline began with endoscopes about a decade ago, Smart tells us, and in a couple of years began narrowing its range – which included everything from theatre trolleys to height-adjustable sinks and tables, to fixed-height benches and sinks – into standards-backed products for the medical industry.

“We found that it's hard to do a lot of things well,” he explains.

Endoscopy is a fast-growing field of medicine, where it can offer a less-invasive alternative for diagnosing and treating certain conditions.

A challenge is sterilising scopes, which are “thermolabile” (destroyed

by heat), so cannot be exposed to high temperatures. Scopes are chemically sterilised and dried after use, though if this isn't done properly there is the risk of bugs breeding on a moist instrument and causing problems later.

Smart's company worked with world-recognised experts to develop their iQ series drying cabinets, which he says are the first in the world to offer real-time monitoring of parameters such as humidity, airflow and temperature for each endoscope channel in storage.

In their R&D approach, a problem is identified, then assessed as something that is meaningful to potential customers or not.

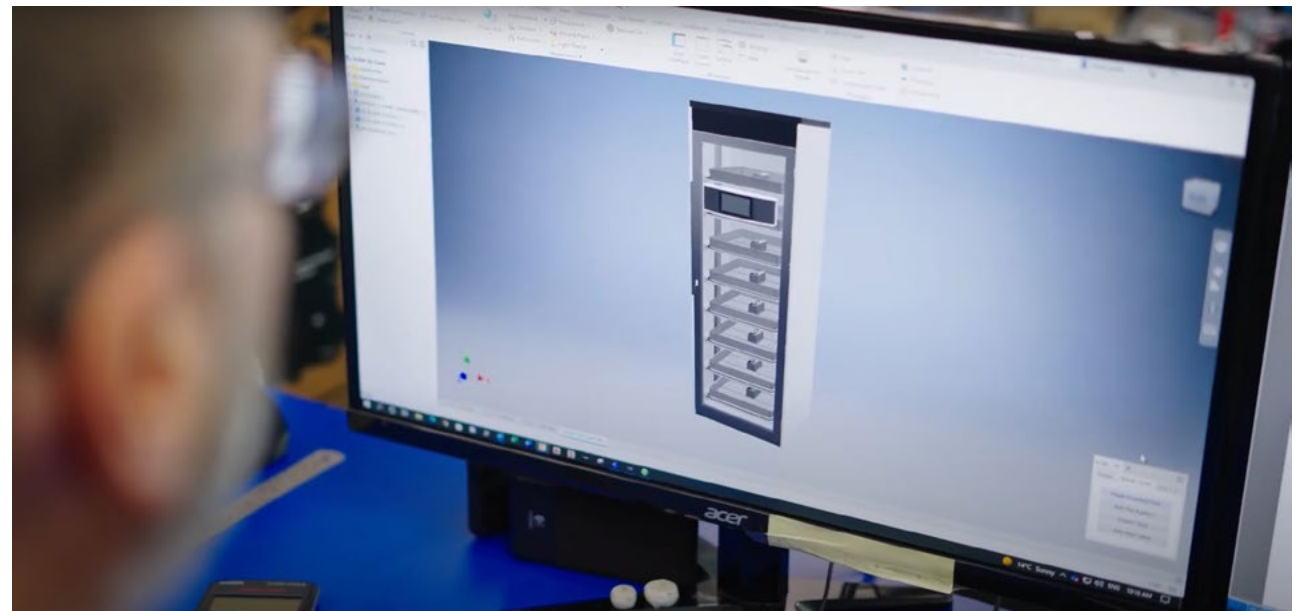
Then it is considered in terms of whether it matches the company's profile. Would it lend itself a high-value, low-volume solution? If not, then it's a job for somebody else.

"We shouldn't design a scalpel because we can't meet that sort of production capacity," explains Smart.

"Does it fit our distribution partners? And then we confirm that it is a real problem that we need to solve in the market. And if it ticks all of those boxes then we'll move to an investigation stage."

The small team comes up with a collection of separate ideas, each evaluated for how well they might solve the problem, the best ones identified, and feedback is sought from distribution partners and end users in hospitals.

"The goal is by the time we actually get to [the] prototyping and design stage – which is the fun part of research and development – we've now got a product that we're pretty



sure should be adopted by the market," he adds.

"Rather than designing something, spending lots of money and time and then going to the market and going 'what do you think of this?' So for us it has been really critical to have great partners that can help us test our concepts before we start designing them."

The "4 Is" method – ideate, investigate, innovate, implement – then moves on to the innovate stage. Only then is there a real investment made in time and money, first on CAD iterations and then physical prototypes.

Smartline's R&D investment compared to revenue is high compared to most companies we speak to. However, as a small firm of only 19 employees it has been important to

be as frugal as possible, says Smart.

As for an overall definition of innovation, he describes it as follows:

"I'd say it's solving problems in new and unique ways, with the key focus being on the problem not on the product. And I think it's very easy – especially as we've got a pretty decent research and development team, most of them are engineers, and so it is obviously the first thought to focus on the product. But recently we've discovered that it's a lot more efficient if we focus on the problem. We've got a personal method that we follow through. But for us it's starting at the beginning, not starting halfway through the process, which is when we're designing things."





### HIGHLY COMMENDED

Five-year-old business Wireman has a simple mission. It gives its value proposition as: “Tools and equipment that make fencing faster and easier for land owners and fencing contractors.”

Simplicity rules at the small manufacturer. And innovation, as this series has shown so far, does not equal more for the sake of it.

The long-time industrial designer co-founded Wireman with his patent attorney, Fraser Old.

In the beginning, Old asked if the problem of tying barbed fencing wire could be addressed, before Lowrey saw that the real problem was in removing the barbs. Their first product, the DeBarber, was later released.

“Then when I was looking at the whole industry, the one thing I found that everyone was complaining about was the wire grippers and the wire-

ensioning equipment that was available,” recalls Lowrey.

The resulting product, sold as Jack The Gripper, has been their most successful. According to Lowrey, they’ve moved over 15,000 units, with British Rail a customer, and exports to the US to begin this year.

The grippers form part of various kits sold by Wireman, are cheap enough to be a “gateway product”, and are small enough to be sent through the postal service – “That just means we just broaden our market scope much more that way”.

Lowrey explains: “That’s got us out there. And so what happened was, that meant that we could go on and do internet marketing and sell this that way.

“Also a lot of the people are remote. And if you think back to – in America they had the Sears catalogue and people bought out of that and it got shipped out to them and away you went.”

The business isn’t huge right now, though is roughly doubling revenues year-on-year and expects to pass the \$1 million mark in 2023.

On product development, Lowrey outlines a simple approach.

A problem that has identifiable commercial value is picked. Product testing is kept minimal unless there’s a safety issue to be addressed.

A prototype is made to see if it works and passes “the pub test,” and they’ll decide how well it could be produced at scale and taken to market. A small run is then made to see how the market responds.

“And then, if that goes well, we’ll go to a limited run of them, maybe a hundred or so of a particular device, or 200, then take that to market,” adds Lowrey.

“See how it goes, see what people feel about it, and then with that really start to understand what it’s going to cost to scale up. If it’s working, we’ll carry on. If it doesn’t, we’ll drop it...”

“From a product development perspective – I’ve been at this quite a long time – and it’s more, because we’re here trying to commercialise things as quick as possible, really, most of the thinking is about how not to add in any problems or add in anything that would impinge our ability to manufacture quickly.”



On the topic of innovation, he admits he and business partner Old have different understandings – unsurprising given their backgrounds – but agree there is no point addressing a challenge with no commercial usefulness.

“I come at it from the point of view ‘can it be done, and can it be done at a price... someone is prepared to pay for it, and that a large amount of people are going to pay for it?’” Lowrey explains.

“I think around all those sorts of things. I sort of think three-dimensionally, so I think about the problem, whereas sometimes Fraser will present me with a problem... and then I’ll give it some thought. If I think we can solve the problem, then we’ll step into it.”



## More on our Podcast!

Interviews with each company profiled – and several others that aren’t – are available via our podcast

**@AuManufacturing Conversations**

## OPEN WELDING

### HIGHLY COMMENDED

He doesn’t use the word “Eureka moment”, but Malcolm Rigby had one of those a few years ago during a phone call about a shielding gas mixture.

Rigby was at his desk in Melbourne, where he was then employed by Air Liquide in business development. A salesperson was with a client in South Australia, trying to convince them of the value of the consumable.

The client was told to take a welding pass while the salesperson held a phone up to the job for a couple of seconds.

“And I said ‘No, no no. What this guy needs to do is to change a little bit of this voltage value and change a little bit of this amp value; just a very tiny bit, and do it again. So he did it again. And I said ‘No, no, stop. I just want you to increase the stick out. Just by a couple of millimetres,’” Rigby recalls.

“Instantly the product performed and the weld performed a lot better. And everyone was very thankful and I got off the phone. But when I got off the phone I thought ‘why does it take myself to be able to advise that person in South Australia? Not only the company representative, but the welder as well. Surely there must be a way we can automate this.’”

Sound on its own can carry a surprising amount of information.



Last year Pfizer bought ResApp Health for \$179 million, following the Australian company’s success in a pilot trial diagnosing Covid-19 infections based on a patient’s cough. The company had its origins in signal processing research at The University of Queensland, led by Udantha Abeyratne and going back to 2009, using data derived from coughs to diagnose respiratory diseases.

Analysis of speech and other patient sounds is being used by other companies to detect disease.

And in the industrial world, companies including Australia’s Movus are tapping into noises from machines to help customers make better use of these assets.

After a bit of digging, Rigby discovered that there was no shortage of research – some of it going back to the 1920s – on the information contained in welding sounds.

“Even the US Atomic Energy Agency was exploring this in 1969. And they all came to a conclusion that there was a possibility of processing in a sort of close to real-time activity then it would be worth it,” he tells @AuManufacturing.

A literature review for an ARC Linkage grant application found 57 papers on the subject, but no solution. The resulting project, partnering with UTS and Sound Intuition and beginning in 2017, sought to develop one.

“We were also approached by [University of Wollongong ], and they were a little bit miffed,” Rigby recalls.



“They said ‘Why didn’t you come to Wollongong. We’re the welding centre of excellence.’ And I said to the Dean there, I said, ‘look, the problem is an acoustic problem, not a welding problem.’”

The resulting RGL solution has been available from Rigby’s startup, Open Welding, for two years.

He describes it as containing a custom-built microphone, processing box, and software, with a current focus on the three areas of welding compliance, ranking competency, and training.

The company currently has “three or four” early customers and an official launch is planned for when they secure a marquee client.

On commercialising new technology, Rigby says it helps to be driven by a purpose beyond just making money, especially when the going gets tough.

“That’ll take you so far, but it just won’t take you to that bigger appreciation of what you’re doing. I often say to people that I work with, you’re going to walk through a desert at some stage. And you’re going to be really thirsty for water. So what’s going to get you to the other side? It’s going to be the vision that you are doing something greater,” he explains.

“Yes, we’re going to make some money and that’s all very good. But at my age, I live a comfortable life. I want Australia – to quote a former prime minister – to be the smart country. Australia can be just so clever. It does frustrate me that we lose a lot of opportunities.”



#### HIGHLY COMMENDED

The amount of material used and created by the construction and demolition sector is huge: 27 million tonnes – or 44 per cent of all managed waste in Australia for 2018-19, and the single largest source. 24 per cent of it was unrecycled.

Estimates include that it’s responsible for half of all virgin material used globally at the beginning of the lifecycle. At the other end, it produces about a third of all waste.

Ged Finch, then a Master’s architectural student in Wellington, New Zealand, began addressing the issue in 2017.

His concept was a timber framing system, able to be clipped together, then disassembled and reused when needed.

The resulting company, XFrame, has been operating commercially for three years, with a presence in New Zealand, the Tonsley Innovation District in Adelaide, and the United States.

Among Australian installations, they’re in the middle of their 20th at an ANZ branch when we catch up with CFO Simon McKean in May.





The company has evolved Finch's invention into software that can turn CAD drawings (or, they say, those on napkins) into CNC instructions to turn engineered plywood into components, a "95 per cent automated" tender, a calculation of carbon emissions, and assembly instructions.

There is a standardised set of 12 components, able to be joined together with a rubber mallet and without glue or nails, then disassembled for reuse.

You might have just thought of Meccano. CFO McKean makes the same comparison.

"We are, in Australia and New Zealand anyway, a technology company. We do bid for projects and we win projects on our own merits, but we want to be very much an outsourcing model," he tells @AuManufacturing.

"The requirement for us to own CNC routers to run our sheet supply through, or extra staff or... install teams: we can very much outsource that aspect. So we want to stay quite lean in terms of what we offer."

For a company focussed on sustainability – as well as creating systems and

providing a platform to drive change in its industry – being able to have their products made close to the point of use makes sense.

Within Australia, production of pre-assembled parts is handled by disability employer Bedford Group.

The vision is to have other companies join their quest for building circularity by creating XFrame-compatible products such as lining, insulation and cladding.

The three families of jobs handled are fitout, furniture and construction, with commercial fitouts generating the most demand so far.

McKean believes there is enormous potential in construction, particularly housing, due to the well-documented supply pressures. He mentions roof trusses as a current area of R&D to this end.

"So we're working on at the moment a sort of a final set of instructions really that we can XFrame housing projects. So we know we can do the walls very, very comfortably," he explains.

"And whilst we can do flat roofs, what we want to work out is roof trusses. So we're going through a lot of analysis there on

the automation and certification of roof trusses so that when we do go to market with a housing alternative, we've got a complete package ready for people."

Of course, the company is also aiming to improve everywhere else.

As with solar energy enterprise 5B – another company describing itself as in the platform game – its focus is not on production in-house, though being able to prototype is very important for understanding the challenges faced by users.

"So how do we keep innovating? We've got a great tech platform, we'll keep refining that. So our innovations are how we put a sheet of plywood through the CNC and [it's under] 3 per cent waste. Can we make that 1 per cent or 0 per cent?" says McKean

"Some of our innovation is what method do we use to stack, maybe, a container where something goes to site? What's the most efficient way at the other end to unload? How do we try to improve every aspect for saving money for us and the client, but also speed of installation? So we really think hard about innovation at as many levels as we can."

# DILEMMA: INNOVATIVE COMPANY OR INNOVATIVE PRODUCT?



**Dr Munib Karavdic**  
*CEO, WAVE Design*



**Mike Jennings**  
*Design Lead, WAVE Design*

## *Insights from judging our most innovative manufacturers*

Wave Design recently had the opportunity to participate in judging entries for @AuManufacturing's 50 most innovative manufacturers.

For those who haven't heard of Wave Design, we're an end-to-end strategy, design and delivery partner. We help companies across a wide range of industries design and deliver solutions to problems for people.

It was amazing to be given the opportunity to understand the manufacturing companies of Australia more deeply and to better appreciate the efforts they go to produce impactful products and solutions to a huge range of problems. Below we share some observations from reviewing over 75 entries for the award.

It was obvious from the entries that many companies recognise the importance of innovation in creating a better future for the world - seizing on opportunities in eco-manufacturing. They invest efforts and resources towards sustainability, aiming to produce Australian-made products that limit their impact on the environment.

By adopting a circular economy approach, these companies focus on minimising waste and reusing, repurposing, and recycling materials. For example, one manufacturer focuses on creating furniture from recycled plastic and encourages customers to return their products for recycling at the end of their life cycle - a prime example of a circular economy in action.

Others see innovation in manufacturing as developing game-changing technologies and products that bring about significant advancements.

We saw many examples of new technologies and cost-saving measures that revolutionise manufacturing processes, improving safety, efficiency, and productivity.

By investing in research and development, manufacturing companies are pushing the boundaries of what is possible, creating breakthrough technologies, and driving transformative change within their industries. One company has developed a new material that will be used to create lighter engines for electric aircraft, enabling them to fly 15 per cent further and 5 per cent more efficiently, reducing the environmental impact of short-haul flights.

While producing innovative products and technologies is undoubtedly essential and can deliver a huge range of benefits, as many participants presented, being an innovative company can take the concept of innovation even further and set the foundation for long-term success and sustainability in business. There are several important distinctions around this.

## **What makes an innovative company?**

From Wave Design's perspective, there are several key aspects that contribute to a company being truly innovative. They are: fostering a culture of innovation, understanding the problem, having a defined methodology in place to enable creativity and solution development, and continuous improvement. While many

of the companies we reviewed had one or more of these in place, few had them all. So what do we mean by these critical aspects, and why are they so important?

First, innovative companies are ones that foster a culture of innovation that permeates every aspect of the organisation. This collective mindset encourages and incentivises employees to think creatively, take measured risks, and explore new possibilities. Psychological safety, dedicated time and budget are essential requirements here. One outcome of this is the ability to attract and retain top talent - which is a key enabler for the success of all businesses.

Second, innovative companies are ones who deeply understand and can communicate the problem they are solving. This comes not only from understanding the science of the problem but how that problem impacts the people who are affected by it. In the case of manufacturing, this isn't always obvious - the customer is not always the end user, and in some cases, there is no "end user". However, with some lateral thinking, it's always possible to identify and articulate how an identified problem or challenge affects people. This enables organisations to tackle complex challenges holistically, going beyond the confines of individual products to focus on comprehensive problem-solving. It also enables them to talk about how their solutions create value for people - an essential requirement to attracting customers and investors.

Third, innovative companies have a defined methodology in place for creative problem-solving. There are many fields of science that can be referenced here,

***"INNOVATIVE COMPANIES ARE ONES THAT FOSTER A CULTURE OF INNOVATION..THIS COLLECTIVE MINDSET ENCOURAGES AND INCENTIVISES EMPLOYEES TO THINK CREATIVELY."***

Human Centred Design, Design Thinking and Systems Thinking are just a few to draw from. Having a creative methodology in place makes the process of innovation repeatable and leads to more effective use of resources: taking small incremental steps towards more significant investment and eventual returns, ultimately reducing risk.

And finally, innovative companies have an embedded ethos of continuous improvement and optimisation in all business areas. Committing to revisiting designed solutions and improving them over time leads to refined internal processes, streamlined operations, enhanced productivity, and better solutions. The outcome of this is obvious - reduced costs, increased profit, and a better experience for customers or end users.

### **What are the outcomes of being an innovative company?**

There are also some overarching outcomes that result from having these critical aspects in place. Being an innovative company opens new opportunities, partnerships, and collaborations through the inherent knowledge and domain expertise that comes from exploring widely and thinking deeply about the infinite ways problems can be solved.

Additionally, being an innovative company drives sustainable growth and resilience. By continuously exploring and pushing the boundaries of what is possible, organisations can adapt to changing market conditions,

disrupt traditional industries, and create new markets. They naturally stay ahead of the curve.

### **In summary**

While many Australian manufacturing companies are producing world-first products with impressive sets of features, focusing solely on products and technologies can lead to a shallow innovation pipeline.

Companies that rely on product-centric innovation may struggle to attract and retain top talent, as employees may seek organisations with a more comprehensive approach to innovation.

Additionally, stakeholders and investors may perceive a lack of long-term vision and sustainability in companies prioritising product innovation over developing the key aspects of innovative companies.

While delivering innovative products is undoubtedly important, it is only one facet of being an innovative company.

By embracing innovation as a core value and weaving it into the organisation's fabric, companies can harness the full power of innovation to drive growth, competitiveness, and long-term success.

Ultimately, being an innovative company surpasses the impact of delivering innovative products alone, paving the way for a brighter and more prosperous future.





## STUDIO RIZ

Meet the creative force behind @AuManufacturing's rebrand, media kit and awards designs; including this stunning booklet.

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