I4AMF Conference 2020

Accelerating the uptake of Industry 4.0 technology and digital business models















Today's speakers







DR GREG WHITELEY





DR CORI STEWART





DAVID KAPLAN















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David Chuter CEO and Managing Director, IMCRC









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Attendee live poll - where do you think Australia is on the Industry 4.0 journey?"



2020 I4AMF Conference attendees







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I4AMF Workstreams





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I4AMF Workstreams accelerating Industry 4.0 uptake

Technology Application Scenarios



Digital Business Models

- Value creation, benefits
- User case studies, exemplars
- Research and innovation focus
- Linkages to I4.0 living / test labs





Industry 4.0 uptake in Australia technology applications, digital business models

Barriers, challenges

Accelerators

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Lack of understanding of Industry 4.0 ROI

Lack of business vision, culture and leadership

Lack of Industry 4.0 knowledge

Collaboration - especially business to business

Strategy - business strategic planning

Case studies

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IMCRC Industrial transformation program



BUSINESS MODEL INNOVATION

MANUFACTURING LEADERSHIP

INDUSTRY 4.0





Manufacturing SME assessment









futuremap[®] Digital - Industry 4.0



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Dr Greg Whiteley Chairman, Whiteley Corporation









Building Human Therapeutics Plant

- Digitalisation of the quality and manufacturing process
- Robotics and automation wherever possible

Increased Productivity

- Improved competitive advantage
- Improved long term sustainability

What's New ?

- Class 3 Flammable/DG Plant (OTC Medicines)
- Good Manufacturing Practice (GMP) Quality System required
- New technologies arising through our IMCRC Discovery Grant









Culture of Continuous Improvement

- Drive to continuously improve matched with IoT, automation
- Digitalisation of all processes
- Advanced Manufacturing = maximized efficiencies

Pilot Project

- Multinational customer with unique specifications
- Required partial-automation to make feasible

Human Therapeutics Plant project changed due to Pandemic volume demand









Collaboration Tips

- Identify your collaboration partner first
- Understand the project and the benefits
- Understand the partner's strengths & skills
- Align goals, timelines, and resources
- Have very clear goals and performance milestones
- Agree up front to regular review meetings
- Accountability is a two way street

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Jamie Baensch General Manager, Air Radiators







Air Radiators is a SME manufacturer of engine cooling systems for trucks, trains, mining equipment and power stations



- To survive as a Australian manufacturer you must constantly eliminate waste from your business
- Lean Manufacturing principles had got us so far, but we needed to find more • efficiencies... so we looked to our information flows









Our information infrastructure is made up of multiple systems

- ERP, MRP, PDM, CAD, QTS, etc
- Limited inter-connectivity data being pushed between systems
- Data in the system was very rarely live



• The future state we wanted was one where the shopfloor data was always live









Our Pronto ERP system is very effective. The problem was getting data in and out without paper and keyboards

- Decided to use 55" touchscreen PCs as the user interface
- To get two-way data flow to the between the touchscreens and Pronto ERP we used IBM Cognos Business Intelligence Tool







manufacturing



By connecting our systems together, orders from our customers now flow directly out onto the shopfloor



- Touchscreens provide all the data needed by our team members; schedules, drawings, work instructions, BOMs
- Easier for team members to visualise the workflows and value chain
- Better understanding of the need to book off work-orders fast
- Everyone can see status of the value chain live









With the information flows now live we have significant benefits for our business

- Reduced overtime (for schedule slip recovery)
- Improved productivity our team members have the right information presented when they need it
- Improved IFOT performance and reduced lead-times
- Relocated two indirect heads involved in production planning and expediting
- Improved inventory management
- \$1,400 p.a. in paper savings









We did not have a big budget to do this - we needed to do this in-house

To kick off the project we used the Leadership for Manufacturing Excellence Program run by the Geelong Manufacturing Council. We put three of our staff on the program

- Sales Admin Clerk manages the orders coming in and the invoicing going out
- Production Supervisor manages the shop floor team
- System Admin Manager manages and maintains our ERP system

On this training program they did the current state and future state value maps and designed the interfaces for the touch screens









Implementing quickly – using our existing resources

- Upskilled our System Admin Manager by attending an IBM Cognos training course
- Mocked-up the look of the screens based on our current visual management white boards
- Acquired 55" touch screens sourced directly from a manufacturer in China for \$1,300 each
- Started small replacing our visual management white boards with touch screen one buy one.







We did not set out to do a INDUSTRY 4.0 project, but the result is that is what we got, A DIGITALISED SHOPFLOOR!









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David Kaplan Managing Director / CEO, Sleepcorp









Started securing the installation and transition into a new factory

Finalising a prototype version of the new plant developed using digital twin software

- Giving direction on the best layout
- Providing analysis of potential stress points
- Allowing us to make confident assurances key stakeholders

Identification, investment and delivery of automated machinery and software has begun









We recognise the key competitive advantage that local manufacturing gives us, by engaging in Industry 4.0 we will

- Be capable of sustaining our competitive advantage and Australian Made manufacturing into the future
- Strengthen our business position in light of increasing competition from imports
- Move towards our strategic growth strategy for the business both locally and in export markets









The support and knowledge base of the university has been vital to our business, providing us with

- An **understanding of the opportunities** presented by Industry 4.0 in both real and practical terms,
- Strong training support to our managers and teams,
- Guidance in identifying and prioritising key areas for development, and,
- Support in recognising and implementing new processes and policies







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Dr Cori Stewart CEO, ARM Hub











ARM Hub Services

We build expert teams around Industry 4.0 challenges.

01.

Industry Engagement

- Industry 4.0 business readiness workshops
- Site visits and needs assessments
- Technology demonstrations
- Business networking

02.

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Commercial Solutions

- Adoption sprints for agile implementation of new technologies
 - Demonstration to validate new technology applications
- Expert services to support client business objectives

03.

Public & Private Investment

- Assemble teams
- Access competitive grants and commercial contracts
- Apply to win





ARM Hub + Industry



OzVader Ventilator

- Start-up as a response to COVID-19
- 10+ collaborating businesses, across engineering, specialist medical professionals, roboticists & designers
- Local manufacturing adapted for production
- Mix of private & public investment

OZVADER COLLABORATORS









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Hervé Harvard **Director, UTS Rapido**







R&D offering focused on delivering commercial value

- We offer a commercial R&D capability to solve industry challenges
- We enable industry to access UTS research expertise, UTS facilities and relevant grants to generate business outcomes
- We focus on R&D impact through delivering value to our customer



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R&D offering focused on delivering commercial value









Mineral Separation using Additive Manufacturing

- 3D printing to create precisionengineered mining equipment
- Full size spirals and dual material prints completed
- Increased manufacturing flexibility and mining yield increase





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Panel discussion













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Summary - technology applications and digital business models

Accelerators

- Leadership, ambition, strategy and collaboration
- Focus on the people element of 'people + machines + things'
- Value proposition capture and create
- Digital business model opportunity uniqueness
- Research and innovation as a catalyst
- Start somewhere and scale up find your tipping point
- Learn, especially from others case studies needed!





Share your story – case studies



Register online to share your Industry 4.0 story www.imcrc.org/shareyourstory

Share your story

Australian manufacturers have fantastic stories to share. Their insights and the lessons they have learned can be of great value to other manufacturers who are perhaps at an earlier point in their Industry 4.0 journey.

In conjunction with the Industry 4.0 Advanced Manufacturing Forum (I4AMF we are keen to collate a library of these stories, providing you with an opportunity to share your own story and help contribute to the advancement of Australian manufacturing as a whole.

Start the process and share your story here.

SHARE YOUR STORY



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Thank you for attending

















futuremcep®

future-proofing Australian manufacturing SMEs

Optional session provided for 2020 I4AMF conference attendees







futuremape SME maturity assessment



IMCFC

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MARKET - beyond the production line







LEADERSHIP – in a disruptive and digital world



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INNOVATION – innovating to compete



Technology investment primarily to improve productivity, lower cost





Digital adoption

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Adoption to date of digital techniques has focused on business support functions

Are perceived barriers to entry reducing adoption of a wider suite of digital tools?

Industry 4.0 technology adoption futuremap



IMCRC Industry 4.0 SME support



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www.futuremap.org.au/events

IMCRC | activate

- Manufacturing and Industry 4.0 R&D projects
- With IMCRC partner research organisations
- \$50,000 \$150,000 cash matched
- 6-12 month projects

www.imcrc.org/apply-now



APRJNTERN

- Students internships with manufacturers
- 3, 4 or 5 month projects placed in industry
- IMCRC additional funding support

PhD INTERN ACCELERATES 3D PRINTING PROCESSES



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Thank you

For more information visit

- www.futuremap.org.au
- www.imcrc.org





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