

# Digital Supply Chains

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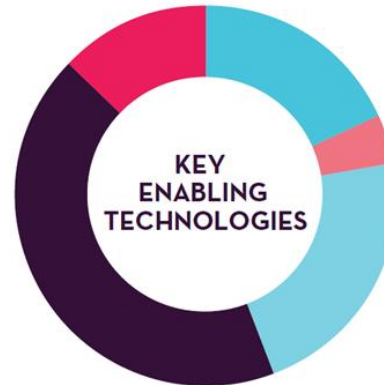
# Innovative Manufacturing CRC

[www.imcrc.org](http://www.imcrc.org)

futuremap



- Co-funding for manufacturing and Industry 4.0 R&D with Australian universities and/or CSIRO



- Additive manufacturing
- Robotics, assistive technologies
- Sensors, data analytics
- Virtual/augmented reality
- Advanced materials



- Advanced manufacturing
- Oil, gas and energy resources
- Medical technology and pharmaceuticals
- Building and construction
- Mining equipment, technology and services
- Defence



# The 4 key themes of the futuremap diagnostic



## Digital

Industry 4.0 is centred on the digitalisation of enterprises and whole value chains through the real time integration of people, machines and things. While made possible through digital and advanced manufacturing technologies, Industry 4.0 is as much about strategy, talent, innovation, and business operations as it is about technology.



## Market

Market maturity focuses on how a business positions itself with respect to the market, its customers and suppliers to achieve competitive advantage. As well as offering ways to improve productivity, Industry 4.0 provides Australian manufacturers with opportunities to rethink their market, seeking opportunities to go “beyond the production line” to capture high-end services upstream and downstream.



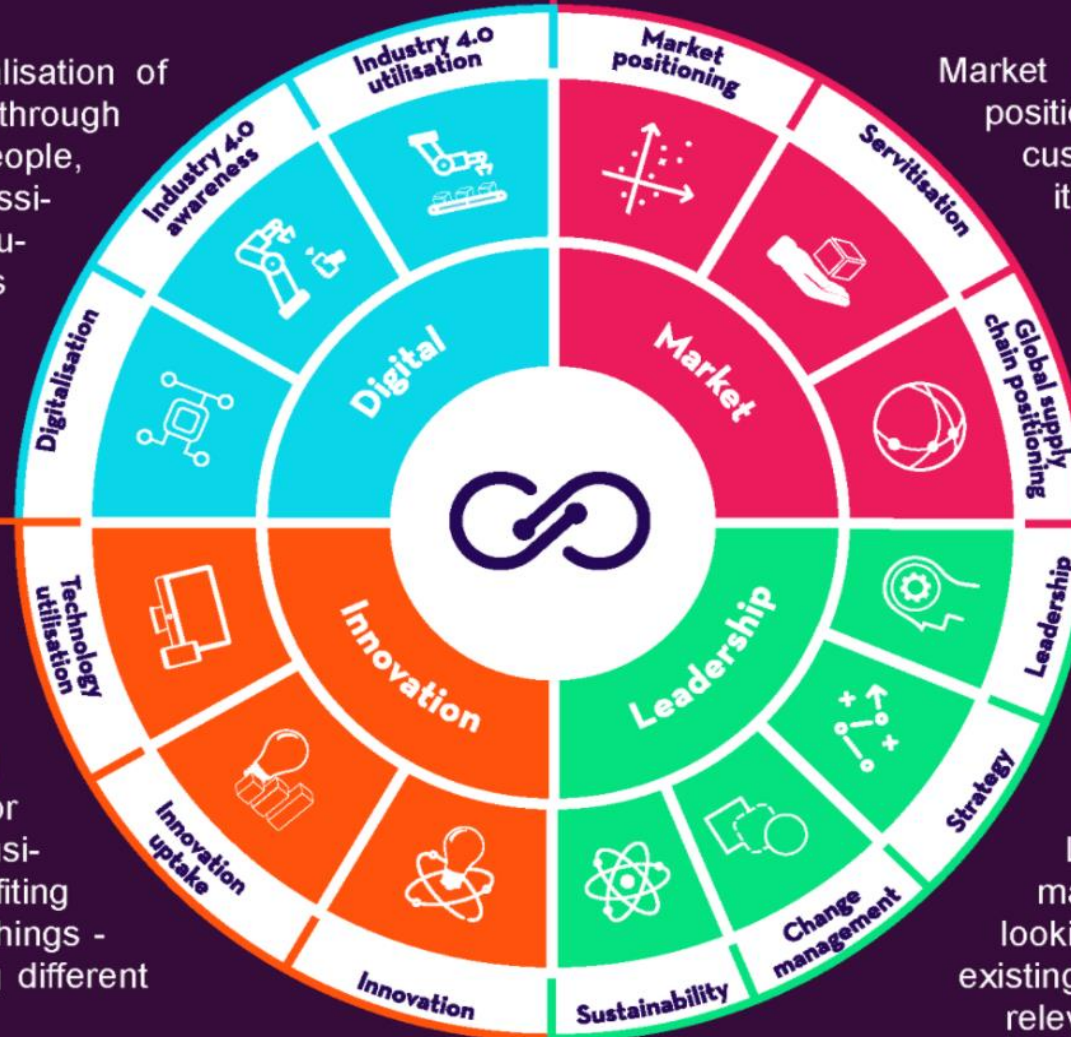
## Innovation

Innovation is central to being an advanced manufacturer. It helps create new sources of value and facilitates entry to new markets, or better, captures the value that the business may be creating but not benefiting from. Innovation is about doing new things - doing things differently and / or doing different things altogether.



## Leadership

Leadership is today more important than ever. The digital transformation of manufacturing means that change has never been less linear or predictable. Leadership teams must focus on the many forces external to the business, looking for new ways to add value, translate existing strengths and capabilities into new ones, relevant to the changing business landscape.



# ...and after 750+ manufacturers we have learnt some **futuremap**<sup>™</sup> useful lessons on BUILDING MOMENTUM



The importance of understanding possibility

The changing role of strategy

The need to act



# The importance of understanding possibility



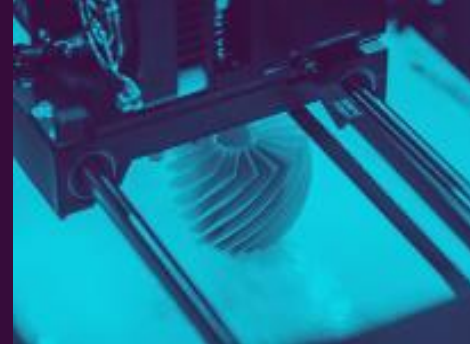
## Sensors and data analytics

- Across whole value chain
- Predictive maintenance
- Logistics tracking
- Quality control



## Smart robotics and automation

- Assistive
- Human collaboration
- Awareness, decisions
- Full autonomy



## Additive manufacturing

- Complete, complex, products
- Lower capital investment
- Consumer led design
- Just in time production



## Augmented and virtual reality

- Overlay designed with environments
- Optimised equipment
- Remote collaboration
- Safe training

## Sensors and Analytics

### Starting points

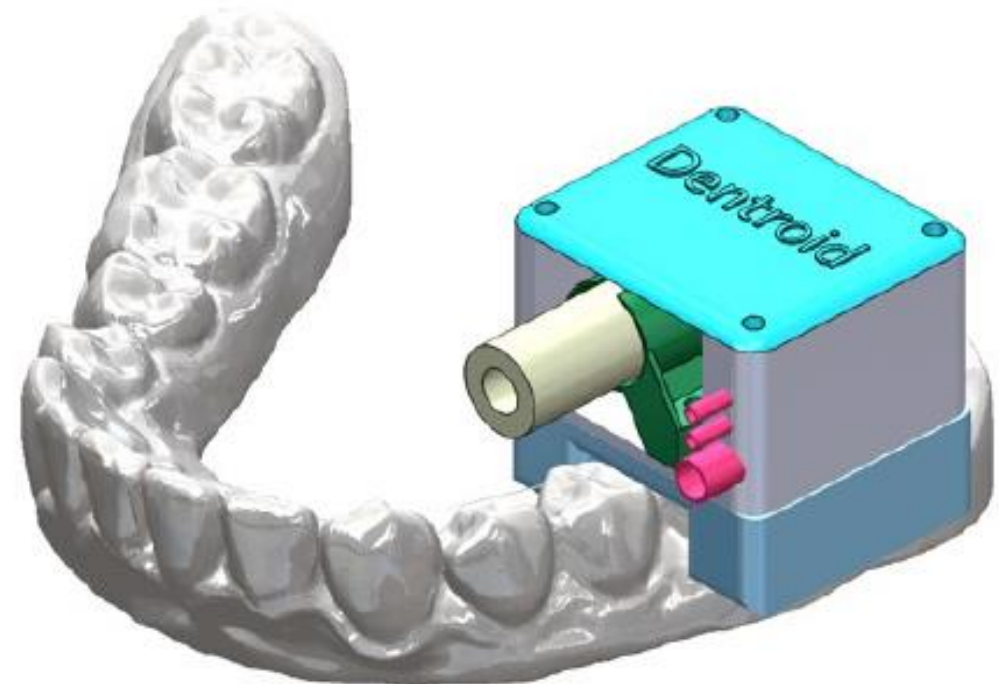
- IOT enabled equipment
- Performance data gathering
- Core data collation and smart data presentation



# Robotics and Automation

## Starting points

- Single use applications
- Basic manipulation
- Productivity enhancement

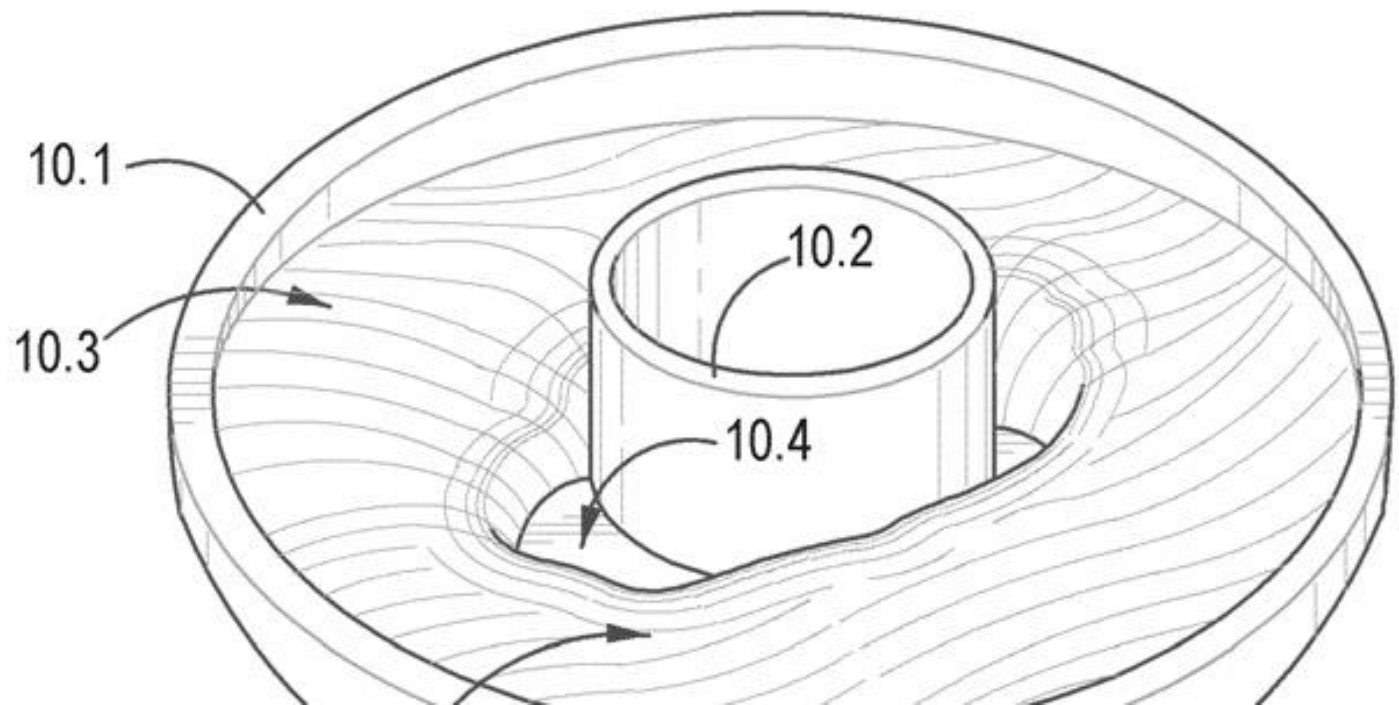




# Additive Manufacturing

## Starting points

- Jigs and Fixtures
- Rapid prototypes
- Mass customisation



# Augmented and Virtual Reality

Starting points

- Static visualisation, e.g. training
- Service support





# The changing role of strategy



## A traditional leadership model

- Work from a vision through to a strategy
- Deploy this down through departments into individual goals
- Individuals action against these, possibly with incentives
- Annually, review progress and go around again!

# The changing role of strategy

A VUCA environment doesn't align to this model

- Do we know what the environment will be for us?
- Do we know how we will compete?
- Do we know what we are capable of?



# The changing role of strategy

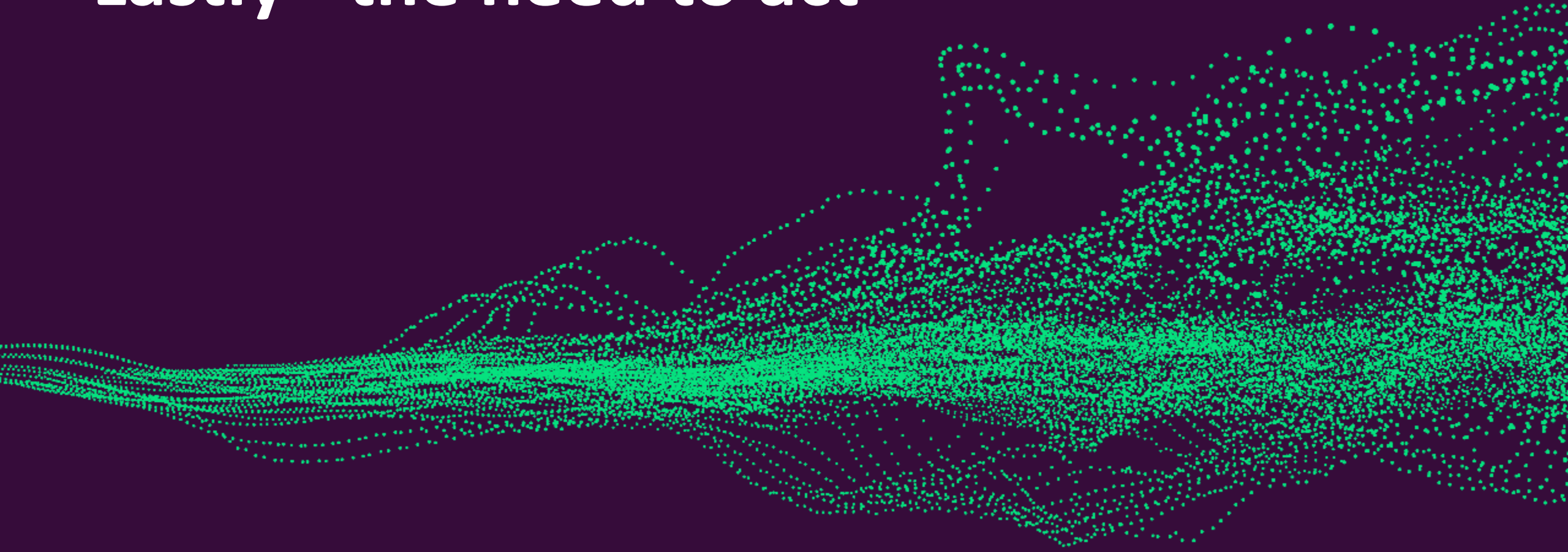
A VUCA environment doesn't align to this model

- Do we know what the environment will be for us?
- Do we know how we will compete?
- Do we know what we are capable of?



**FIND your strategy by doing!!**

# Lastly - the need to act





# 750+ manufacturers helps us understand what needs to be done



**47%** do not have a technology plan linked to an overall strategic plan or business model but **100%** want to improve this



**More than 95%** of businesses want to provide real-time data to their employees



**45%** have ambitions to increase their export revenues



**More than 85%** believe they provide significant benefit to their customers yet, **less than 50%** have converted this to strategic lock-in



**90%** of businesses want to be operating an effective improvement culture in the future, with only **33%** being there currently



Ambition to have digitalisation skills throughout their organisation moves from **25%** to **89%** over a two year period

# 750+ manufacturers helps us understand what needs to be done...



## When reviewing the aggregate data we can show that action lags behind awareness

Statement considered	% Responding 'YES'
Our leadership and management are aware of Industry 4.0	59%
Our business owners and/or Board of Directors are aware of Industry 4.0	57%
Industry 4.0 and associated digital strategies are frequently discussed and considered in our leadership/management meetings and planning processes	23%

Whilst we see increasing numbers agreeing that their leadership and board are aware of Industry 4.0, it is only discussed regularly by less than a quarter



# 750+ manufacturers helps us understand what needs to be done...

Building an understanding of competitive advantage is highlighted as as important to manufacturers

Statement considered	% Responding 'Agree' or 'Strongly Agree'
Our leadership and management understand the <b>performance competitive advantages</b> arising from Industry 4.0	36% (now)
	93% (in 2 years)
Our leadership and management understand the <b>opportunity for new business models</b> enabled by Industry 4.0	29% (now)
	90% (in 2 years)

Limited understanding of how Industry 4.0 adds competitive advantage to a business, but a clear ambition to change this

**Turning data into information is one thing  
Turning it into dollars is where it counts**

**If you apply digital to a broken thing  
you will have a digital broken thing**

***Be troubled, but also be excited***