

Now's The Time For Aussie SMEs To Shine: Getting Onboard The Fourth Wave

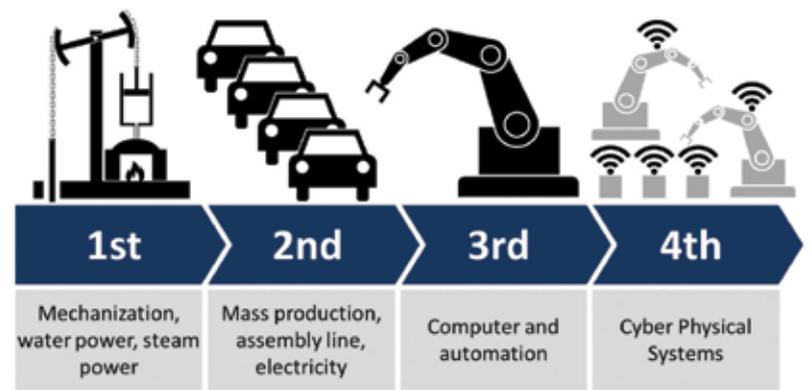
By Emilio De Stefano and David Pender

With all the buzz about Industry 4.0, Australian defence sector SMEs face some clear strategic choices. They can become part of a drive to take small Australian manufacturers to the forefront of global defence supply chains, or they can step aside and let it pass them by. The \$200 billion defence investment over the next decade provides the catalyst. Australia will never really compete with Europe (and others) in high volume production processes. Low volume, high value products and processes (like those in defence) are a different matter.

WHAT IS INDUSTRY 4.0?

The 4.0 signifies the "fourth wave" in the industrial era. Each previous wave produced disruptive changes to how things were made, what was possible to make and even, how we lived our lives. The first wave created cities; the second goods that more people could afford; the third improved quality and efficiencies. Each wave was long lasting, albeit each had a shorter timeframe than its predecessor.

The fourth wave brings together physical and digital systems, making them work together in ways that were nearly unimaginable 15 years ago. Cloud computing, the Internet of Things (IoT), data analytics and machine learning all enable digital systems to monitor the physical in near real time and make intelligent decisions that feed back into the physical to improve performance.



The four industrial revolutions (Image courtesy of Wikipedia).

WHAT IS SO DIFFERENT? SOFTWARE TOOLS AND PREDICTIVE MAINTENANCE HAVE BEEN AROUND FOR YEARS.

Two things are different: cost and speed. These enabling technologies are now affordable. Once only for big players due to their high capital cost, these tools are now

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available as a “pay-per-use” service. Through advances in sensor technology, internet speeds, cloud computing and third-party IoT platforms (e.g. Amazon Web Services and Microsoft Azure), we can now get more data, more quickly for ultra-fast analysis and make informed decisions based on it. Industry 4.0 goes beyond one factory; it connects actors within the value chain – you to your suppliers as well as you to your customers.

WHAT ARE THE BENEFITS?

Without venturing into the deep unknown, Industry 4.0 benefits revolve around 4 key areas – business models, productivity, how we compete and market requirements.

| Business Models | Productivity | How we compete | Market requirements |
|---|----------------------------------|---|--|
| Create and capture new forms of value. | Reduce downtime. | Change the basis of competitive advantage. | Enable “mass customisation” |
| Create new business models and improve existing ones. | Improve maintenance processes. | Radically improve supply chain integration. | Reduce the time to market for new products/services. |
| | Improve product/service quality. | | Provide greater ease in sustainment services. |

Mass customisation is one of the most exciting benefits that could come out of Industry 4.0. It has potential to see many of the traditional manufacturing industries that have gone offshore over the last few decades (i.e. textiles), being reshored as the labour component of the overall cost of manufacture is reduced and transport is stripped out as one of the last remaining activities in the value-chain that creates no value for the customer.

WHAT ARE THE CHALLENGES FOR AUSTRALIAN SMES?

Leadership appetite and uncertainty. SME leaders have to become comfortable that the idea is for them and figure out the investment priority in terms of cash and time. Uncertainty because starting points are unclear, there are competing ideas in the market that are generating confusion and little education or training is presently available.

IS GERMANY LEADING THE CHARGE?

Whilst standout Industry 4.0 exhibits were on show at Hannover Messe 2018 : SEW Eurodrive, Siemens and Festo, German SMEs are still not far along the industry 4.0 journey. Only one fifth are using Industry 4.0 technologies themselves. These SMEs use design and simulation tools far and wide, but paper-based production systems are still the norm, and few are feeding ‘as-built’ information back into the original design model to create what is known as a ‘digital twin’. As evidenced in the DTC’s recent visit to Germany however, adoption roadmaps are being developed by SMEs and companies are thinking about how they can digitise their operations. In short, the Germans lead from the integrator’s perspective, although it seems the German SME sector is struggling with many of the same challenges our SMEs struggle with.

CAN AUSTRALIA GET INVOLVED IN THE INDUSTRY 4.0 JOURNEY AND IS IT POSSIBLE FOR AUSTRALIAN SMES?

Greenfield sites are being established for SEA 1000, SEA 5000 and LAND 400. Australia has a unique opportunity if we exploit the opportunities at hand and establish the foundations to digitise our defence infrastructure over the next few years. There’s no reason why we can’t have the Germans visit in 5 to 10 years to see what best

practice in this space looks like. We have the Federal Government support for Industry 4.0 – where the Prime Minister has established the Prime Minister’s Industry 4.0 Task Force. We can continue to work closely with industry leaders. We can encourage our education institutions to produce the right mix of skills and talent in their graduates. It can, and must happen.

WHAT IS THE DTC DOING TO SUPPORT SMES WITH THE TRANSITION?

The DTC will support its members in Industry 4.0 understanding and adoption. Knowledge is being gathered through trade shows, from industry leaders and through working closely with other industry associations and various agencies. A program to support understanding and adoption is being planned for an early 2019 roll out.

CONCLUDING THOUGHTS

Technology is developing at a fast pace. Industry 4.0 tools will continue to improve, probably become cheaper and certainly even easier to use. Now is the time for Australian SMEs to come to grips with the concepts and technologies Industry 4.0 offers and begin the planning process for adoption. We can lead in the mass customisation space. Then at the right time, adoption won’t entail “jumping a huge chasm” but will just be another step in the journey.

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Image courtesy of BAE Systems Australia: Two NTP ANT Student Consoles installed with new APC monitors.

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