

Delivering modern manufacturing through a skilled workforce – Webinar briefing



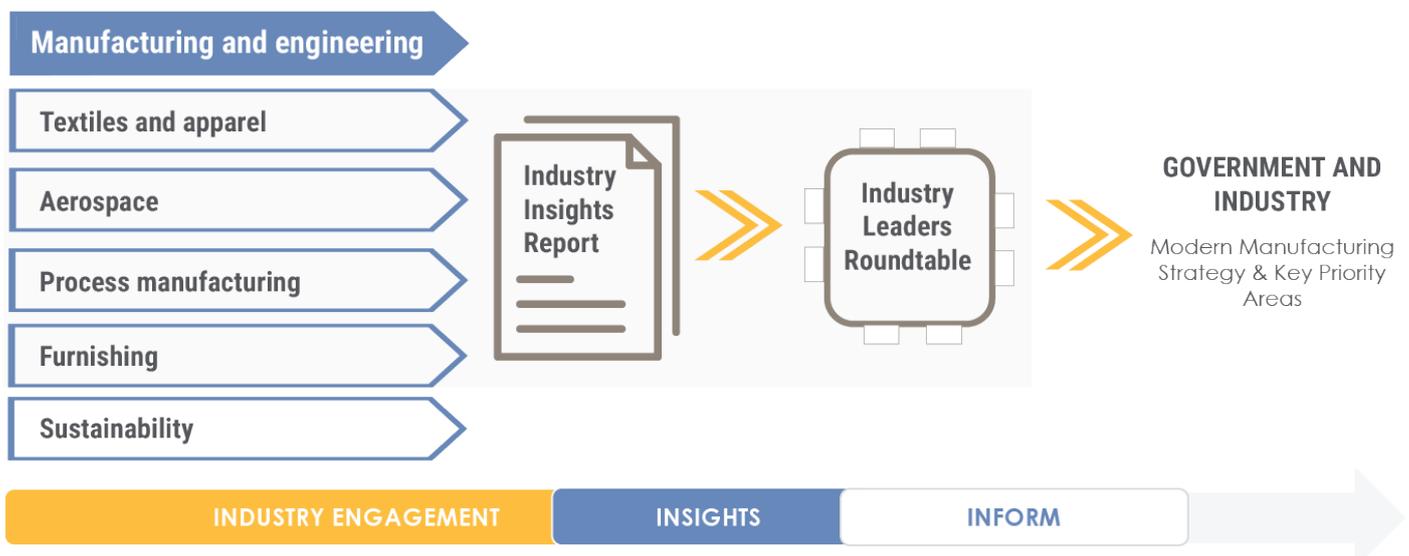
Thursday 3 December 2020 | 1.30PM AEDT



WEBINAR SERIES PURPOSE

IBSA Manufacturing is running a series of focused webinars to further the conversation around what skills are required and how to ensure they are made available to Australian industry and its workforce.

WEBINAR SERIES



Discussion Paper – Manufacturing and Engineering

Introduction

This webinar is part of a series that IBSA Manufacturing is conducting on behalf of the Industry Reference Committees (IRCs) who develop training packages (and qualifications within them) in the manufacturing industries. The webinar is timely as Australia emerges from what it is hoped will prove to be the worst of the effects of COVID-19 and can start to focus its attention on recovery and capitalising on emerging opportunities.

It comes after a recent webinar held on 30 October 2020, entitled 'Delivering Modern Manufacturing through a Skilled Workforce – 2020 Budget Initiatives'. This webinar, featuring Senator Michaelia Cash, Minister for Employment, Skills, Small and Family Business, highlighted the need for a skills-led recovery and emphasised the need for the sector to scale up by investing in jobs and in skills and technology where Australia has a competitive edge. The Minister especially emphasised the importance of recruiting apprentices and the government's recent initiatives to assist employers with apprentice training. To view the webinar, [click here](#).

IBSA Manufacturing is keen to maximise the benefits to all stakeholders of the budget announcements outlined by the Minister in the earlier webinar. They are now conducting additional sector-specific webinars for stakeholders to assist IRCs in providing timely and comprehensive feedback to the Government on what is happening 'on the ground'. This includes the opportunities, barriers and skills needed for effective take-up of the new Modern Manufacturing Strategy initiatives.

The 'Manufacturing and Engineering' webinar will include the following industry leaders, who will share their views and participate in a Q&A session:

- David Fox, General Manager - La services
- Mark Goodsell, National Director - Ai Group
- Peter Angelico, Managing Director, ABeck Group - South East Melbourne Manufacturing Alliance (SEMMA)

Commonwealth Government Commitment to Manufacturing

The Commonwealth Government has announced that it will spend \$1.5 billion on a Modern Manufacturing Strategy as part of its plan to rebuild the economy, create jobs and recover from the COVID-19 recession.

MODERN MANUFACTURING STRATEGY – Key Initiatives



The Modern Manufacturing Strategy identifies six areas as National Manufacturing Priorities, which reflect Australia's competitive advantage. They are:

- resources technology and critical minerals processing
- food and beverage
- medical products
- recycling and clean energy
- defence
- space.

The Commonwealth Government will strategically invest in projects in the six priority areas to help manufacturers scale up and create jobs. The Department of Industry is also setting up industry-led expert teams to co-design road maps to set clear goals in each priority area over the next two, five and 10 years¹.

Most sectors of the manufacturing industry have an involvement in at least one of the priority areas, either directly or through supply chains.

Road Map Themes

In addition to the national priority areas, the government has also listed several themes that each road map will address. These are:

- ensuring the vocational education and training system is providing workers with the skills to support the emergence of automation, data analytics, artificial intelligence and other digitisation strategies and technology. (These are often included under the general heading of Industry 4.0.)
- building business management capabilities
- increasing supply chain resilience
- building the scale and competitiveness of Australian manufacturing.

¹¹ Australian Government. (2020, October 6). Make it Happen: The Australian government's Modern Manufacturing Strategy. Retrieved from Industry.gov.au: <https://www.industry.gov.au/data-and-publications/make-it-happen-the-australian-governments-modern-manufacturing-strategy>

Your Industry and the Road Maps

The national manufacturing priority areas do not easily map to manufacturing sector descriptions used for other purposes such as those used by IRCs for the development of training packages (and qualifications within them). The IRC is looking to make sure that all the manufacturing sectors it represents or partners with will have an opportunity to benefit from the government's Modern Manufacturing Strategy. It knows that many of its sectors and enterprises are either in, or support, the priority manufacturing areas. A major example of this are the equipment maintenance and commissioning skills covered by the MEM Manufacturing and Engineering Training Package.

IBSA wants to maximise the importance of your sector in the Modern Manufacturing Strategy and to this end it is conducting webinars to:

- discuss the importance of skills development to the Modern Manufacturing Strategy
- gather information from industry on the latest technology, market developments and skills requirements in your sector.

Results of each sector webinar will contribute to a report on the key issues and solutions for delivering modern manufacturing through a skilled workforce. This will be shared with Government.

Digitisation/Industry 4.0

The Modern Manufacturing Strategy is a forward-looking strategy and one of the most important strategy themes is digitisation, which is also often included in the scope of the German-developed term Industry 4.0. The impacts of COVID-19 and rapid advances in digital technologies are acting together to transform the way that enterprises do business. Embracing digital transformation and automation technologies is now a necessity for most businesses, with the only debate being the rate at which different sectors and enterprises will be affected.

"If the pandemic has taught business leaders one thing, it is that being agile and embracing digital transformation and automation technologies is no longer a luxury, but a necessity." ¹

There are many Industry 4.0-related technologies and skills such as additive manufacturing, artificial intelligence, collaborative robots, digital twins, Industrial Internet of Things (IIoT), cyber security etc. These will impact differently across manufacturing enterprises and sectors. However, they all have a number of features in common:

- a dependence on digital integration, control and monitoring
- a large increase in the amount of data able to be collected, transmitted and analysed (big data)
- a significant increase in connectivity within and across enterprises especially across supply chains. This connectivity will usually be based more and more in the cloud for data storage, real time communication, control and monitoring of systems and processes. Remote control, virtual work and cyber security will become essential business processes.

Have your say on the range issues that affect your business over the next two, five and 10 years

The IRC wants to ensure that information from all sectors is considered in the implementation of the Modern Manufacturing Strategy and not just participants in each priority area. To do this, they will be asking webinar participants to consider a number of general issues affecting their broad sector and some more specific issues for sectors and enterprises that will be addressed in breakout sessions. In preparing for participation in the webinar please consider these issues:

- the opportunities for your industry in the Modern Manufacturing Strategy and the national priority areas
- the immediate post-COVID-19 recovery stage (two-year horizon) and a longer-term (five- and 10-year) strategy for your industry
- the critical changes in your industry over the next 5 to 10 years
- critical skills that are needed to help industry improve their uptake of Industry 4.0 technology and digital business models.

In considering the issues above, we encourage participants to include feedback on both technical and other skills that are seen as critical to growing the capability of their industry and/or organisation. Capability-growing non-technical skills that could be considered are:

- competitive systems and practices/lean manufacturing skills. This covers a wide area with some lean-related skills such as value-chain mapping likely to be a key part of an enterprise's ability to connect into one of the priority areas
- cognitive skills
- risk management
- energy efficiency and environmental management skills
- circular economy concepts
- leadership and management skills – what skills and at what level?

Where to from here?

Feedback received from the webinar series will be incorporated into a submission to the Government in early 2021 reporting on the direction of your sector over the next ten years. IBSA will be emphasising the importance of skills development to support digitisation and the need to ensure the widest possible participation in the Modern Manufacturing Strategy initiatives.

Manufacturing and Engineering

Manufacturing and Engineering (MEM) is a broad and diverse industry sector and touches on all six priority areas as outlined in the modern manufacturing strategy.

The Manufacturing and Engineering industry covers a diverse range of businesses and occupations associated with designing, making, assembling, installing, maintaining and repairing manufactured products. Their coverage includes most of the sub-sectors or 'classes' within the following Australian and New Zealand Standard Industrial Classification (ANZSIC) subdivisions and groups:

- primary metal and metal product manufacturing
- fabricated metal product manufacturing – including key and lock manufacturing
- other transport equipment manufacturing – including shipbuilding and boatbuilding
- machinery and equipment manufacturing
- other manufacturing – including jewellery and silverware manufacturing
- repair and maintenance – including watch and clock service and repair and key duplication.

The qualifications in the MEM Manufacturing and Engineering Training Package relate to the following broad areas:

- manufacturing Production
- engineering
- Fabrication
- mechanical
- technical/paraprofessional
- boatbuilding and Shipbuilding
- jewellery manufacture
- locksmithing
- watch and clock service and repair.

In a pre-COVID-19 survey undertaken by IBSA (on behalf of manufacturing IRCs) in April 2020, 90% of the manufacturing and engineering stakeholders who participated in the survey felt that there were current workforce skills challenges. The following key challenges were identified:

- lack of skilled tradespeople
- training in the use of new technologies
- funding to keep up with new technology training
- lack of apprentices with basic computer numerical control (CNC) knowledge
- 5-axis advanced manufacturing skills in programming, designs of jigs/fixtures and machining
- increasing compliance knowledge and skills.

The COVID-19 virus pandemic is having an immediate impact on the Australian economy; the scale and timeframe of which is not clear. While some pockets of the industry may see opportunities in the current environment in the supply of critical equipment, it is predicted that a large portion will be impacted by reduction in demand for products and services. Further, the sector is heavily dependent on apprenticeships to provide continuity of supply of skilled labour. Any disruption to the apprenticeship system is likely to have a detrimental impact on capacity over a significant period. This disruption might come in the form of extended stand-downs due to reduced demand for products and services and disruptions to the delivery of the off the job component of an apprenticeship.

Modern Manufacturing Strategy

In terms of the modern manufacturing strategy, Manufacturing and Engineering plays a key part in the supply chains that support the priority areas. For example, the table in Appendix 1 provides a list of industry subsectors and their relation to the six priority areas.

In preparation for participating in the webinar we will be seeking your feedback and ideas about the following:

- opportunities presented by the six priority areas, including feedback on those identified in Appendix 1
- critical changes in your business/industry sector will be over the next 5 years
- impact of changes on your future workforce needs
- impact on job roles over the next 5 years
- How will these job roles change in terms of the skills needed?

Appendix 1 - Modern Manufacturing Strategy Alignment Table

Resources Technology and Critical Minerals Processing	Food and Beverage	Medical Products	Recycling and Clean Energy	Defence	Space
<ul style="list-style-type: none"> • Mechanical Trade • Fabrication Trade • Industrial Electrician • Fixed and Mobile Plant Mechanic • Para-Professional: <ul style="list-style-type: none"> - Mechanical Engineering - Maintenance Engineering - Mechatronic Engineering - Manufacturing Engineering • Design and Detail Drafting 	<ul style="list-style-type: none"> • Mechanical Trade • Fabrication Trade • Para-Professional: <ul style="list-style-type: none"> - Mechanical Engineering - Maintenance Engineering - Mechatronic Engineering - Manufacturing Engineering • Design and Detail Drafting 	<ul style="list-style-type: none"> • Mechanical Trade • Fabrication Trade • Para-Professional: <ul style="list-style-type: none"> - Mechanical Engineering - Maintenance Engineering - Mechatronic Engineering - Manufacturing Engineering • Design and Detail Drafting 	<ul style="list-style-type: none"> • Mechanical Trade • Fabrication Trade • Para-Professional: <ul style="list-style-type: none"> - Mechanical Engineering - Maintenance Engineering - Mechatronic Engineering - Manufacturing Engineering • Design and Detail Drafting 	<ul style="list-style-type: none"> • Mechanical Trade • Fabrication Trade • Composites Trade • Refrigeration and Air Conditioning • Fixed and Mobile Plant Mechanic • Para-Professional: <ul style="list-style-type: none"> - Mechanical Engineering - Maintenance Engineering - Mechatronic Engineering - Manufacturing Engineering • Design and Detail Drafting 	<ul style="list-style-type: none"> • Mechanical Trade • Fabrication Trade • Para-Professional: <ul style="list-style-type: none"> - Mechanical Engineering - Maintenance Engineering - Mechatronic Engineering - Manufacturing Engineering • Design and Detail Drafting