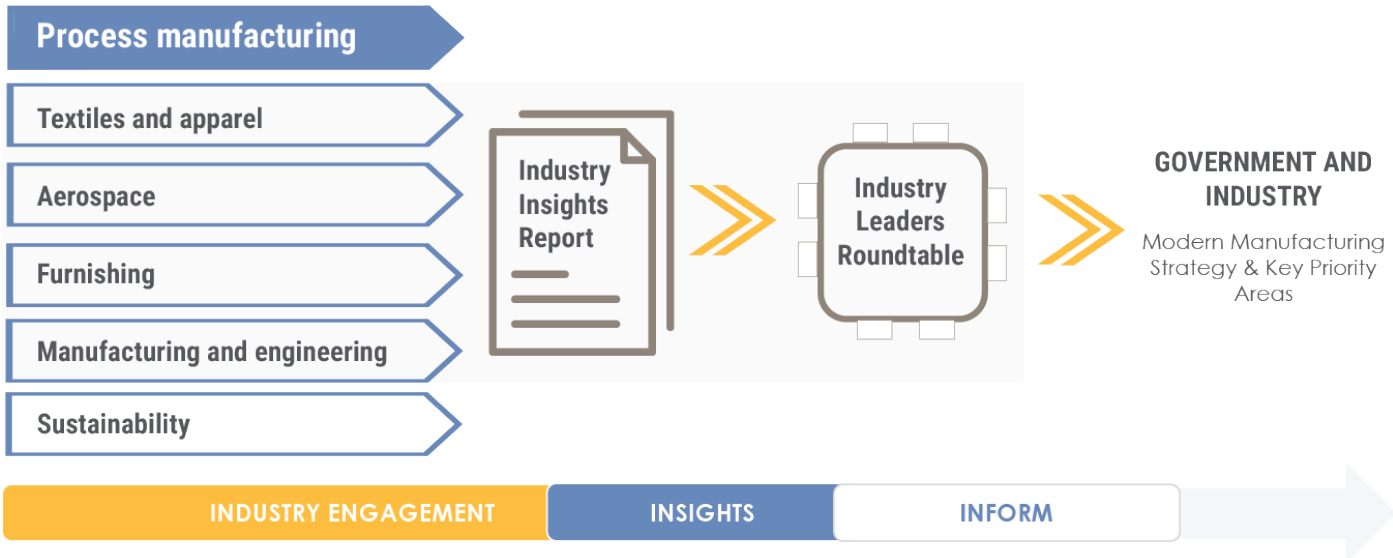
# Delivering modern manufacturing through a skilled workforce – Webinar briefing

Tuesday 1 December 2020 | 11.30AM 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 – Process Manufacturing, Recreational Vehicles and Laboratory

## 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 it) 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 our 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 Process Manufacturing, Recreational Vehicles and Laboratory (PMRVL) webinar will include the following members from the Process Manufacturing, Recreational Vehicles and Laboratory Industry Reference Committee that will facilitate discussion for the breakout sessions:

- Leah Simmons – Laboratory Operations
- Grahame Aston – Polymers
- Stuart Lamont – Recreational Vehicles
- Nigel Haywood – Chemicals, hydrocarbons and refining.

## 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 years[1].

***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 & 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 it). 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.

**IBSA wants to maximise the importance of your sector in the Modern Manufacturing Strategy and to this end we are 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 answering the above questions, 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.
- energy efficiency and environmental management skills
- circular economy concepts
- Cognitive skills
- risk management
- 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.

## Process Manufacturing, Recreational Vehicle & Laboratory Operations

The Process Manufacturing, Recreational Vehicle and Laboratory Operations (PMRVL) sector is a broad and diverse industry sector and touches on all six priority areas as outlined in the modern manufacturing strategy.

- **Laboratory Operations (MSL)** covers non-professional, technical and scientific skills including testers, technical officers and other laboratory personnel.

- **Process manufacturing (MSM)** includes production support roles for process-manufactured goods such as food, beverages, refined oil, gasoline and pharmaceuticals.

- **The recreational vehicles subsector,** which falls under MSM, covers recreational vehicle related service, repair, manufacture and retail.

- **Chemical, Hydrocarbons and Refining (PMA)** is a diverse group of industry sectors covering the production of chemicals, gas, petroleum, coal products, and metal manufacturing and refining.

- **The Plastics, Rubber and Cablemaking sector (PMB)** can be defined as fitting one of two categories: (1) high volume, lower cost, standardised products and (2) low volume, higher cost, niche products. It also covers conveyor belt manufacture and repair.

According to IBISWorld data, in 2019, the sector comprised of 180,974 businesses, employed 978,413 people and had an annual turnover of $405,971 million.

In a pre–COVID-19 survey undertaken by IBSA in April 2020, 88% of PMRVL stakeholders who participated suggested there were current workforce skills challenges. The following key challenges were identified:

- shortage of skilled technical and scientific officers
- shortage of staff with chemistry qualifications
- graduates lacking practical experience
- no qualification available in surgical cut-up/grossing
- lack of training for PVC windows
- shortage of skilled tradespeople
- upskilling staff to keep up with technological changes
- an ageing workforce.

Within the PMRVL sector, there are obvious cases where COVID-19 has had both positive and negative impacts. COVID-19 may see an exponential growth in pathology and sample testing. With Australian state borders reopening, there has been increasing demand for recreational vehicle production as international travel is restricted and more people are travelling locally. This seems to have resulted in an increased demand for recreational vehicle production.

Due to travel restrictions and factory shutdowns in China resulting from the COVID-19 pandemic, access to raw materials and replacement parts that are usually imported from overseas are in limited supply. However, with Australia increasing their sovereign manufacturing capability, this sector will be called upon to produce essential goods such as plastic face shields and hand sanitiser.

## Modern Manufacturing Strategy

In terms of the modern manufacturing strategy, PMRVL 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 |
|---|---|---|---|---|---|
| • Chemicals, hydrocarbons & refining<br>• Heavy off-road tyre repair<br>• Surface preparation & coating<br>• Cablemaking<br>• Conveyor belt manufacture and repair<br>• Composites production<br>• Manufacture and installation of PVC and polyethylene pipelines<br>• Laboratory Operations<br>  • Calibration procedures<br>  • Field testing and sampling<br>  • Mineral testing and analysis<br>  • Soil testing | • Conveyor belt manufacture and repair<br>• Plastic Injection, extrusion, rotational and blow moulding, blown film (packaging)<br>• Laboratory Operations<br>  • Food safety monitoring<br>  • Ingredient testing<br>  • Product quality monitoring | • Plastic Injection, extrusion, rotational and blow moulding<br>• Composites production<br>• Laboratory operations<br>  • Calibration procedures<br>  • Health and medical related laboratory testing | • Plastic Injection, extrusion, rotational and blow moulding<br>• Laboratory Operations<br>  • Calibration procedures<br>  • Field testing and sampling<br>  • Mineral testing and analysis<br>  • Soil testing | • Surface preparation and coating<br>• Plastic Injection, extrusion, rotational and blow moulding<br>• Heavy off-road tyre repair<br>• Composites production<br>• Plastic Injection, extrusion, rotational and blow moulding<br>• Laboratory Operations<br>  • Calibration procedures<br>  • Field testing and sampling<br>  • Materials testing | • Composites production<br>• Plastic Injection, extrusion, rotational and blow moulding<br>• Surface preparation and coating<br>• Laboratory Operations<br>  • Calibration procedures<br>  • Materials testing |