

Competitive Manufacturing Strategy - COSBOA

Background

If we accept the proposition by Andrew Liveris that Australia now imports approximately 80 percent of its manufactured goods, then it becomes evident that neither current industry policy or the innovation system have achieved their intended outcomes.

The economy-wide risks of this reliance on imported manufacturing was experienced during the COVID-19 pandemic. Supply chain problems brought on by COVID-19 have heightened sensitivity around dependency on a single partner or source of imports. Policy makers and business cannot assume there will always be supply chain continuity – the world isn't that simple.

However, nor is the response to this challenge simple. Re-industrialisation and the process of de-coupling from a dominant supplier is not straightforward and could have serious implications for other important sectors of the economy, including resources, agriculture, services industries, as well as investment.

Creating a globally competitive, large-scale manufacturing sector in Australia to reduce our reliance on imports is not something that can be easily achieved, if at all. Australia needs to become more resilient to external supply chain shocks, but not at the expense of an open economy.

With that in mind, COSBOA believes that greater support for small manufacturers is a critical element of competitive manufacturing strategy. Despite the decline of manufacturing in Australia our industries have managed to develop and retain niche capabilities. These are the starting point for a revival of a highly competitive manufacturing sector. An innovation system that genuinely assists SME manufacturers is critical to building and enhancing niche capabilities.

The Government needs to consider enhancing domestic supply networks, and in consultation with all levels of government, industries and universities develop a roadmap to enhance those networks. That roadmap should consider how best to leverage and coordinate technology, institutions, infrastructure and intellectual capital to better connect suppliers with customers.

COSBOA believes the dangerous 'hollowing out' of Australia's manufacturing industries is at least partly the long-term result of:

- The focus on reducing protection to benefit the Australian consumer - creating a trade and industry environment which provides cheaper goods in Australia.
- The decline of large-scale manufacturers unable to compete on cost or volume while maintaining quality.
- A comparatively small domestic market / difficulty in achieving economies of scale for mass production.

- Direct and indirect labour costs.
- An emphasis on costs over value in supply chains.
- An innovation system that does not effectively engage with the host of small manufacturing businesses that constantly undertake problem-solving innovation.
- Cost imposts on small business that hinder competitiveness, e.g. indirect taxes, high energy costs and an inefficient regulatory environment.

THE INNOVATION SYSTEM

How can the Australian innovation system better equip and empower manufacturing small businesses to innovate and grow, and to help reduce Australia's reliance on imported manufactured goods?

This is the central question COSBOA has asked in seeking to identify improvements to the Australian innovation system, as it pertains to the manufacturing sector.

The current system and structures

The current innovation system comprises of complex web of organisations and programs – sometimes complementary, sometimes overlapping. At a Commonwealth level these include:

- The Australian Research Council (ARC)
- Cooperative Research Centres (CRCs)
- Industry Growth Centres
- Research institutions, including CSIRO and numerous university-based research institutes
- AusIndustry / Entrepreneurs Programme / R & D Tax Incentive / Innovation Connections
- Accelerating Commercialisation
- Education Institutions producing skilled graduates for manufacturing jobs.

For most small business owners, the system is confusing at best, and impenetrable at worst.

The reason is that, for the most part, the Australian innovation system was not designed for small business.

This becomes very clear when we consider a graphical representation of the innovation system, its structure and its drivers (see figure below).

The innovation system, as represented, primarily serves the interests of research and education institutions, government agencies, big finance and commercial organisations, and large corporations.

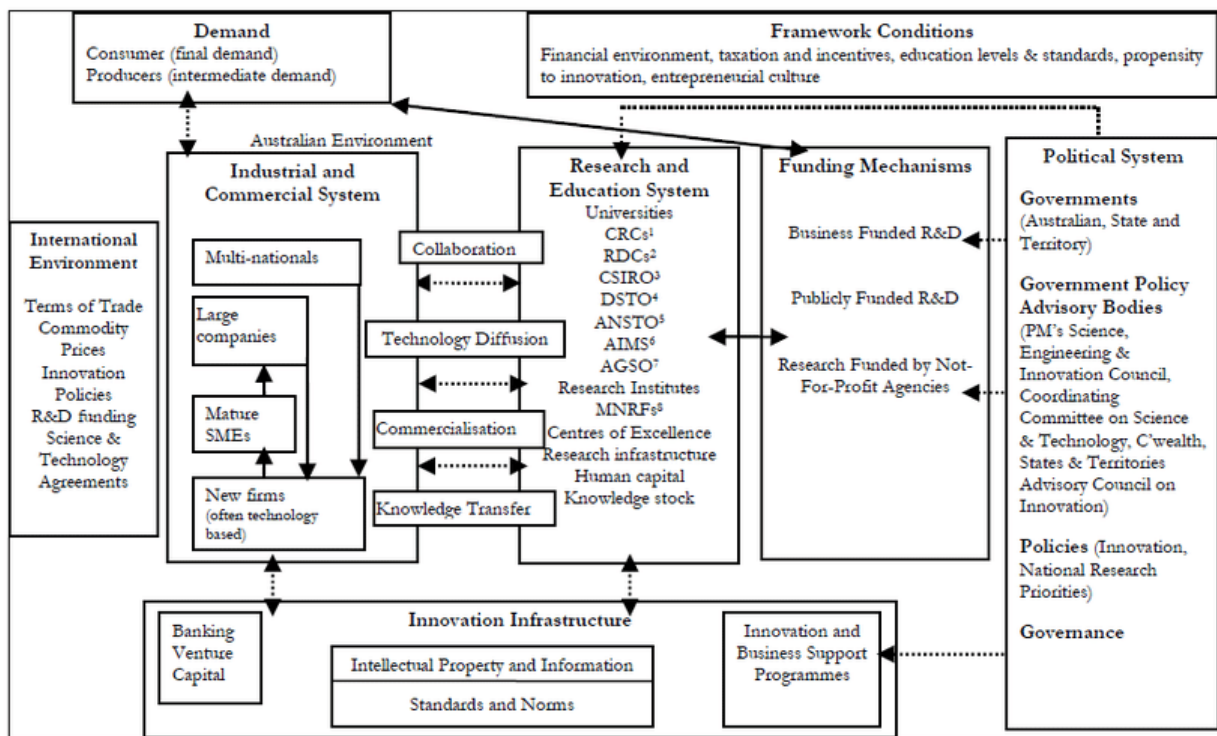


Figure from: Rouch, D.A. Ball, A. 2019 The critical role of fundamental science in the Australian innovation system

Engagement with small business

Some organisations within this structure, including some of the numerous national research organisations, claim to engage actively with SMEs. In reality, very few of these organisations provide practical assistance to small business.

Some small manufacturers claim the R & D Tax Incentive (RDTI), but many do not. To successfully navigate the bureaucratic RDTI process most small business owners will need external professional advice. RDTI has generated a lucrative stream of income for many consultancy firms, advising and guiding businesses through the process. This has resulted in some perverse outcomes, including RDTI claims of questionable veracity.

A small number of manufacturing SMEs have received very valuable assistance from the Innovation Connections Facilitators (just 14 nationally), through the Entrepreneurs Programme. Fewer still have received assistance from the Accelerating Commercialisation programme.

The Industry Growth Centres also undertake projects with small numbers of elite SMEs. The Cooperative Research Centres claim to engage SMEs in industry led research projects, but the number of small manufacturers involved is very low.

Universities prefer to collaborate with big companies. There are certain practical reasons for this. Big businesses more often have fully resourced R & D departments and are better equipped to deal with the peculiarities of the academic approach to applied research. They are also more likely to be able to fund the development of new intellectual property (IP) to the commercialisation stage.

Australian academics are primarily rewarded for having their research published in high-status journals. Arguably, for commercialised IP, this is more likely to occur if the research has been undertaken in collaboration with a high-profile company.

A new set of objectives for the Australian innovation system

COSBOA believes the objectives of the innovation system, *as it relates to small manufacturing businesses*, should be to:

- 1. More effectively identify the manufacturing SMEs that regularly undertake problem-solving innovation, including incremental innovation** (by directly engaging local manufacturing business communities).
- 2. Provide meaningful support to manufacturing SME owners that encourages them to advance from problem-solving innovation to investment in planned R & D activities.**
- 3. Directly assist these small businesses to develop R & D plans, which could include both in-house innovation and external research support.**
- 4. Pro-actively engage with much greater numbers of manufacturing SME owners to help them pursue commercialisation of new products and solutions.**

COSBOA agrees that Australia needs to continue to pursue pure, basic research. In relation to applied research, COSBOA does not necessarily propose merging or phasing out organisations in the innovation system (such as CRCs and Industry Growth Centres) but we *would* support a *leaner*, more cohesive industry innovation structure that aims to:

- Reduce complexity, duplication and waste.
- Actively identify new opportunities for manufacturing innovation that emerges in small businesses.
- Continually respond to new opportunities by actively seeking regular input and feedback from manufacturing business communities.
- Get practical results for small manufacturing businesses by facilitating much easier, more affordable access to professional research capability. This could include placement of PhD candidates into relevant small businesses while undertaking applied research.
- Give greater impetus to research institutions, including universities and CSIRO, to collaborate directly with small manufacturing businesses. This could be done through specific KPIs requiring such collaboration
- Support the identification of industry segments with potential competitive advantage based on market logic (including a deep understanding of supply chains), rather than adopting a ‘picking winners’ mentality.
- Implement clever new approaches to government procurement to drive innovation in small manufacturing businesses, similar to the *Small Business Innovation Research* (SBIR) and *Small Business Technology Transfer* (STTR) programs in the USA (<https://www.sbir.gov/about>).
- Directly assist small manufacturing businesses to greatly strengthen workforce technology skills.

- Help drive local economic development by enabling regional business communities a say in the way the innovation system works at a local level.

COSBOA would argue against the laissez-faire economic philosophy that opposes government intervention of any type.

Why small business is part of the solution, not the problem

Some literature and reporting on manufacturing innovation suggests that Australian small businesses are somehow inherently lacking in the drive to innovate.

COSBOA believes there is a long tradition of Australian small manufacturing businesses being *informal* innovators. The informal process tends to be problem driven. Small manufacturers innovate to solve problems – to improve their own processes or to solve customer problems. In other words, incremental innovation.

Innovations generated through this informal process are currently less likely to involve external researchers, because external research is seen by many small business owners as being inaccessible or too costly. Innovation is often promoted by government and institutions using only the imagery of pure, basic research. Because small businesses tend not to engage with external research bodies their R & D is also therefore less likely to result in patent applications. This is one of the reasons Australian businesses are often reported as being less innovative than their Asian counterparts.

Initiatives such as Industry 4.0 have largely by-passed small manufacturing businesses because, by and large, business owners have not been involved in the high level conversations about advanced automation and robotics (including collaborative robots or ‘cobots’), machine-to-machine and human-to-machine communication, artificial intelligence (AI) and machine learning, sensor technology and data analytics.

COSBOA believes the RDTI is *not* a major driver of genuine innovation in small business. Despite providing more than \$14 billion to businesses since 2013 the RDTI has not solved the problem of an apparent lack ‘new knowledge’ being generated across Australian industry. The Fraser, Ferris and Finkel Review found, in its current form, the incentive is subsidising ‘business as usual’ R&D rather than promoting investment in additional R&D. COSBOA agrees with the need for increased transparency about ‘what the programme has funded; and which companies it has funded’.

COSBOA wishes to stress that ***manufacturing is about doing business***. For the small business owner, research and development is *not* core business. It is just an enabling activity which can provide competitive advantage. If manufacturing in Australia is to be revitalised into a more innovative, competitive form, the SME interaction with the innovation system needs to have a *much stronger business focus*.

To drive manufacturing innovation on a larger scale the innovation system needs to engage more actively with larger numbers of SMEs. ***This will not be achieved if the focus remains primarily on trying to make SMEs match the expectations of research institutions.***

One way this direct engagement can be achieved is to have ‘more boots on the ground’ - skilled and experienced innovation brokers who understand manufacturing and small business. The current Innovation Facilitators in the Entrepreneurs Programme perform part of this role. An effective brokerage system should not only make connections between businesses and researchers but also have the resources to address capability and capacity gaps in the businesses to help them gain the best value from the research partnerships.

These innovation brokers would engage directly with local manufacturers and industry associations, to identify and provide support for innovation activities. Brokers would also perform the role sometimes referred to as ‘boundary spanning’ - bridging the gaps between businesses and the research institutions.

This might be done by significantly expanding the scale and range of the *Innovation Connections* program and/or by utilising the advisor networks of industry associations. The innovation broking activity needs to more than make connections between business owners and researchers. It needs to work alongside business owners to articulate R & D activities and develop planned approaches to innovation.

One of the aims of this direct engagement with small businesses should be to provide a ‘one stop shop’ to find the most appropriate path for SMEs into the innovation system.

Further unlocking the innovation potential of small manufacturing businesses is part of the solution to revitalising industry competitiveness.

REMOVING BARRIERS TO MANUFACTURING COMPETITIVENESS

COSBOA believes there are a range of barriers to manufacturing success in Australia that can be addressed by government. This should be done in a way that avoids protectionist policy.

Taxation

Australia's tax system should be reformed to encourage greater investment and economic growth. For example, Australia's company tax rate remains internationally uncompetitive. Inefficient taxes such as stamp duty could be targeted as part of a broader review of the Federal and State revenue sources. Levies imposed on manufacturers should be quantified and reviewed for their economic impact and effectiveness.

Australia's tax laws have failed to keep up with the global competitive environment faced by small manufacturing businesses.

Arguably, Australia's tax and transfer system is one of the most complex among developed nations. This results in a major cost impost on small business owners who must almost invariably pay for advice just to navigate the system – surely not a desirable characteristic of a nation's taxation system.

Complexity sometimes stems from the varying tax treatment of different types of legal entities (e.g. companies, partnerships and trusts). The ability of a business owner to navigate this complexity can have a significant effect on the tax liability of a business and can lead to different tax outcomes for the same economic outcome.

Adding to this complexity are the State taxation arrangements including land tax, stamp duty and payroll tax, which need to be reformed as part of a broader review of Federal and State revenue sources.

COSBOA believes that the business taxation system needs to be modernised and streamlined to remove unnecessary barriers to competitiveness. Improvements to the business taxation system should aim to achieve efficiency and simplicity:

- Removing unintended consequences of complexity that result in the distortion of business/financial decisions.
- Becoming easier to understand to the point where small business owners face relatively low administrative burdens relating to tax.
- Utilising improved digital technology to ensure ease of compliance and processing.

Energy prices

Industrial electricity users have suffered price shocks in recent years with Australian power bills surging while remaining flat in many other developed and developing economies. This surge in prices has led to fears of serious economic consequences for many small businesses, especially manufacturing enterprises.

During 2018 COSBOA undertook a national advocacy project relating to small businesses and energy costs.

COSBOA conducted a survey of 200 SMEs and developed in-depth case studies with business owners in a range of industry sectors. The research found that:

- 78 per cent of businesses had seen their energy costs increase in the previous two years.
- The rise in energy prices is damaging Australian small businesses, significantly reducing their profitability, affecting their cash flow, restricting their capital expenditure and in some cases requiring them to cut staff hours.
- Over 50 per cent rented their premises, which meant there were far fewer energy saving measures available to them compared with businesses that owned their properties.
- Small business owners reported feeling high levels of stress and anxiety about future energy bills. A startling 85 per cent of respondents said they would struggle to absorb any future energy price rises, and 1 in 8 businesses surveyed were already unable to pay their energy bills.

Manufacturing businesses are often high energy users. Rising energy prices in Australia have disproportionately affected manufacturing competitiveness.

COSBOA does *not* propose a plan that includes reinstating high-carbon energy generation.

COSBOA continues to support the 2018 ACCC recommendations that:

- Governments should fund small business organisations to provide tailored electricity retail market advice.
- Governments and market bodies should develop targeted at small business specific electricity market awareness campaigns targeted at small business customers.

COSBOA adds to these recommendations a call for more practical action from governments and the energy sector to help reduce price increases and empower small businesses to get back in control of their energy usage and energy bills. This would provide:

- **Industry specific tool kits** supporting owners to implement better business processes and make the most of energy efficient capital investments.
- **Energy planning online training program** available for small business owners and their staff who make procurement and process decisions, to be upskilled in energy planning.

Smart regulation

The regulatory environment for Australian businesses is complex. COSBOA believes that Australian regulators must continue to strive to simplify, streamline and better align regulation between jurisdictions.

COSBOA supports Government's efforts to increase transparency of regulatory processes and improve regulator behaviour. We do not argue for a drastic deregulation process that could result in perverse outcomes for communities, the environment *and* businesses. We believe there are good reasons for many aspects of business to be regulated.

COSBOA argues that a great deal of guidance has already been provided to regulators to impress on them the urgency and importance of improving their performance.

COSBOA continues to support a strong emphasis on reducing compliance costs for business and the principle that all regulators should be capable of achieving the objectives of regulation without imposing unnecessary costs on business.

COSBOA proposes a thorough review of the **Regulator Performance Framework** which came into effect on 1 July 2015, to ensure it is fit for purpose. The Framework established six Key Performance Indicators including:

1. Regulators do not unnecessarily impede the efficient operation of regulated entities.
2. Communication with regulated entities is clear, targeted and effective.
3. Actions undertaken by regulators are proportionate to the regulatory risk being managed.
4. Compliance and monitoring approaches are streamlined and coordinated.
5. Regulators are open and transparent in their dealings with regulated entities.
6. Regulators actively contribute to the continuous improvement of regulatory frameworks.

COSBOA wishes to strongly emphasise the *importance of education of regulators on the needs of small business*. COSBOA observes that one of the main negative influences on regulation and regulator behaviour is that many regulatory bodies believe they understand small business (where in reality they do *not*).

COSBOA supports a role for National Cabinet in driving the cross-jurisdictional regulatory reform agenda.

Regulatory Technology (RegTech)

COSBOA argues for a much smarter, more cohesive regulatory environment. Governments must strive to achieve regulatory best practice, including implementing fully a digitalised, streamlined regulatory environment for business, which actively coordinates regulation (and access points) across jurisdictions.

Smart regulation is not about more or less legislation, it is about delivering results in the least burdensome way.

Manufacturing industry skills shortages

The processes, technologies and materials used by manufacturing businesses are very diverse. Consequently, the breadth and depth of workforce skills requirements vary considerably. Manufacturing workers acquire their skills through several education and training pathways, including university degrees, higher level certificate and diploma qualifications, apprenticeships and a broad range of on-the-job learning experiences.

Graduate employment outcomes for manufacturing-related VET qualifications are high compared to the average for all VET programs. Despite this, enrolments in manufacturing-related courses have been steadily falling.

In April 2019 Innovation and Business Skills Australia (IBSA) observed:

'There are a number of workforce challenges and opportunities facing the manufacturing and engineering industry that have implications for skill development priorities, particularly:

- *New Defence projects that will create substantial numbers of jobs and demand for engineering skills over coming decades*
- *Changing technology, which is impacting the way in which work is conducted, providing new business opportunities, changing business models and assisting businesses to increase their efficiency and productivity*
- *An increasing focus on the sustainability of products and business practices*
- *Skill shortages in several occupations (welding trades workers, sheetmetal trades workers and structural steel, and locksmiths) and recruitment difficulties in relation to Science, Technology, Engineering and Mathematics (STEM) skills, automation, big data and artificial intelligence solutions' (IBSA Manufacturing and Engineering Industry Reference Committee Skills - Forecast and Proposed Schedule of Work 2019–2023).*

COSBOA understands that the prioritisation of industry sectors (e.g. mining technology, med-tech, biotech, pharma, defence technology) is likely to be a key part of the design of the Competitive Manufacturing Strategy. If this is to be successfully implemented, Australian manufacturing businesses will need to have better access to suitably skilled employees.

Skills shortages in manufacturing are a long-standing problem for Australian industry - a problem that does not have a simple solution. Manufacturing industry employers have been striving to address skills shortages, but it is evident that, for the Competitive Manufacturing Strategy to succeed, highly targeted interventions will be required.

The imperative to adopt advanced manufacturing technologies will require even more highly skilled / newly skilled employees. The paradox is that the demand for traditionally skilled manufacturing workers will remain high in the foreseeable future.

SME manufacturers re-tooling to implement advanced digital technology will need workers who have both a fundamental understanding of the ways materials are worked, as well as complex cognitive skills such as programming and creative problem-solving.

This will require much closer partnerships between business and education providers. Education and training for this new industry environment will need to be highly agile and adaptive as technology (and the skill requirement) continues to rapidly change.

A new collaborative approach will be essential between local manufacturing business communities, industry sectors and post-secondary and higher education providers.

CASE STUDIES

The following two case studies are starkly illustrative of the barriers small manufacturing businesses face when they attempt to innovate and introduce new products to market.

Ken Stuckey, Agcom Pty Ltd, Victoria

“I sincerely hope that this will go somewhere as my experience is that it is very difficult to get support for Australian manufacturing.

Our group of companies has developed technology in wind generation, hemp processing and autonomous robot & a collaborative robot – the latter which has been working in a pain therapy clinic for over seven months without a glitch.

I have received a little bit of support from the Victorian government for an ultra-lightweight wheelchair.

For over 40 years I've seen the demise of manufacturing in Australia. If we could get a leg up with any of these products they would create enormous job opportunities in Australia. All we need is the cash to support the projects. We have the skills in house and can add to them quite quickly and easily.

It is very difficult to break into universities. We have arrangements in place for ongoing projects with Federation University. We had input from Swinburne University on the robot project but we had to put in a lot of cash (we now have to go through TGA with no government assistance to enable us to market the finished product).”

Geoff Bower, BOWER AUSTRALIA, NSW

“About 5 weeks ago I submitted an application to the Therapeutic Goods Administration – TGA – that regulate medicines and medical devices in Australia.

That includes disinfectants and sanitisers.

I have lab proven results on a disinfectant that my product kills COVID-19.

I can't sell it until they approve my application.

5 weeks and still waiting, with no end in sight.

When Gladys Berejiklian put out the call to all NSW businesses to come forward and help with hand sanitiser, liquid soaps, disinfectants – plus face masks etc we lodged our name and were approved, subject to further information being sought.

I had been in touch with the Education prior, as I had information public school had no cleaning supplies and during the panic buying, couldn't get any.

I had the ability to make lots. They were excited.

Gladys put the call out so the Education Dept said sorry, we fall under the NSW Govt recent sourcing exercise so we can't talk.

I went through the process and ended up on a very very short list – I was told “off the record” that no other applicant had the potential to manufacture as much disinfectant as I could. We were on our way.

Then we hit a snag – they wanted smaller packaging – 500mL pump bottles of sanitiser and 500mL trigger sprays. When the pandemic first hit lead times for both those types of packaging were out to 6 months or more. I tried to negotiate larger packaging (5 litres) as there was plentiful supply but they held firm.

I knew where this was headed – imported product – and that's EXACTLY what they did. I called them on it and now I appear to be 'black-listed'.

All the hand sanitiser being used in all NSW Govt departments is Chinese made. I have photos from friends showing kids burnt hands from the product.

The hard surface disinfectants are NOT TGA listed as being able to kill COVID-19. Teachers refuse to use it and go buy their own, albeit just as ineffective, disinfectants from the supermarkets.

I can't even get them on the phone now. The TGA don't answer anything.

The way the Government has handled everything has been an absolute joke, and I regard their 'call for help' now in the same vein.

I can literally make 1.3 million litres of lab-proven COVID-19 killing disinfectant spray & wipe.

Except I can't.”

These case studies reflect very common themes among Australian SME manufacturers:

- An innovation system that is ineffective for most small businesses.
- Government regulation and procurement systems that become barriers to innovation.

COSBOA is keen to work with government to find solutions to these issues.

Peter Strong

Chief Executive Officer

4 August 2020