SUBMISSION

Australia's Automotive Manufacturing Industry

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Manufacturing Focus welcomes the Productivity Commission's inquiry into Australia's Automotive Manufacturing Industry and is pleased to have the opportunity to provide our insights into a submission.

Manufacturing Focus is an Australian owned business process solutions specialist. The majority of our staff has significant engineering and management experience in the global and Australian automotive industry. Our submission is based upon the concern we have for a future Australia without an automotive sector.

Our company has worked in a wide variety of industry sectors across Australia including advanced manufacturing, mining, oil and gas, energy, construction, food and beverage, medical devices, government, service and defence. We have seen first hand the opportunity for the skills and 'competitiveness' from the automotive sector to translate and add genuine value into these other areas of our economy. We are gravely concerned that the loss of our ability to develop these skills in this country, as well as the loss of industry exposure to 'globally competitive value chains' will greatly reduce our ability to develop and create globally competitive industries in the future.

Introduction

The Australian automotive sector has been a key underpinning capability that has brought significant FDI into Australia, along with emergent product and process technology. It has become the default 'Management University' for the country and has provided exposure and experience to many that have gone on to develop other companies and industries.

Australia's automotive sector is in serious distress. The cost of producing in Australia has increased significantly in recent years. This has coincided with a further fragmentation of the market and competitive scale of producing vehicles viably.

There is an opportunity for Australia to take a more strategic view of how the industry could viably evolve. This could ensure not only the survival of this critical global value chain but it could also stimulate the transfer of skills and technologies into other key sectors of the Australian economy.

The automotive industry will need to be time to transition. Vehicle platforms are decided years in advance. If the current production were to cease in the short term, it is unlikely the existing supply base and skills would be able to transition effectively. A plan is essential to allow time to systematically transition the industry into a globally relevant, high value automotive manufacturing sector.

The automotive industry benefits to Australia

The automotive sector provides a rich and fertile training ground for leadership, management, design and production engineers, supply chain and allied professions.

A recent report commissioned by the Federal Chamber of Automotive Industries[1] recognises the 'spill-over effects' from the sector including technology transfers through research and development and innovation; lean management techniques and applications; and advanced labour skills and manufacturing techniques. Similarly auto executives interviewed in 2007[2] agreed that innovation was one of the most important success factors to maintaining a strong competitive position in the auto market - *"Stagnation means regression to innovation management in the automotive industry".*

We see this issue as being fundamental to our ability to solve problems and develop solutions. Australia has a long history of being innovative and successfully manufacturing solutions. It is this DNA we need to protect as a nation.

Australia's automotive manufacturing industry in a global context

Australia is now a high cost economy. We have the third highest operating cost environment in the world; in comparison with the US our cost base is 160%[3]. This has not only impacted the automotive sector but also many labour intensive and export focused industries.

We cannot focus solely on efficiency in a high cost environment; we must focus on *what we do* that is relevant in this economy. This requires a **focus** on **innovation** and **effectiveness**.

> *"Manufacturing, or the business of making things, is a critical component of any advanced economy. It is the biggest spender on applied research and innovation with spillover effects into the rest of the economy. It is the key driver of productivity improvements. It makes up the biggest share of world trade and is critical for export earnings. It is the largest driver of high value services. It is the largest generator of employment, with each job in manufacturing generating on average, between two and five jobs in the rest of the economy".*[4]

The Automotive sector is recognised globally as the pinnacle of manufacturing. The capability the industry brings as a spill over into other industry sectors cannot be underestimated.

[1] The Allen Consulting Group (2013) *The strategic role of the Australian Automotive Manufacturing Industry*, prepared for the Federal Chamber of Automotive Industries.
[2] Oliver Wynam (2007) *2015 car innovation: A comprehensive study on innovation in the automotive industry.*
[3] OECD
[4] Roos, Göran (2012) Summary of Recommendations, Manufacturing into the future.

The disadvantages of Automotive Manufacturing in Australia

Australian labour costs are high and the dollar is strong, but there are many examples of manufacturers that have been able to offset these challenges through innovative products, processes and business models.

Currently the inflexible output of the car manufacturer's capital-intensive assembly lines creates the need to sell a fixed number of models each year to remain competitive[5]. Combine this with the very significant excess of auto manufacturing capacity relative to global demand and the result is "home town" decisions by parent companies that disadvantage foreign automotive manufacturing sites. Ford and Mitsubishi are examples of this corporate decision making. The current methods of assistance need to directly impact the use of emergent technologies that create competitive advantage in the market reduce the need for manufacturing economies of scale and enable key benefits to Australia outside of just vehicle production.

Generally it is accepted that assembly plants by design can output in the order of 250,000 units per annum and power trains in the order of one million per annum to be of sufficient economic scale. Existing vehicle assembly operations in Australia are currently operating at a daily rate significantly below these scales and that of the majority of imported competitors. The realistic available market for Australian assembled vehicles may only be enough to support one mega-facility where a contract manufacturer produces various vehicles for competing companies. This has been successfully executed elsewhere with examples including Magna Steyr, PininFarina and NedCar. All of the current volumes from the three local manufacturers could be absorbed by one plant (currently producing 225,000 motor vehicles[6]).

If all Australian manufacturing was consolidated one significant challenge would be the additional complexity of multiple platforms and models. The Australian car market is highly fragmented. There are few models that generate enough volume to economically 'fill up' a single plant through developing different variants of a single platform.

To gain manufacturing economies of scale in the current context we have to access offshore markets that will enable sufficient vehicle sales. A fundamental question is whether or not left hand drive (LHD) variants (or specifically left hand drive) will be an export market in which Australian manufacturers have any realistic chance to sustainably compete. It is difficult and very expensive to design, tool and manufacture vehicles capable of both left hand and right drive configurations with current steel structures.

[5] Oliver Wynam (2007) *2015 car innovation: A comprehensive study on innovation in the automotive industry.*
[6] The Allen Consulting Group (2013) *The strategic role of the Australian Automotive Manufacturing Industry*, prepared for the Federal Chamber of Automotive Industries.

If Australia remains with existing manufacturing technologies for production it is likely that it will not be able to effectively generate the volumes necessary to offset the economies of scale of other global manufacturers.

Regardless of new technologies and models, there are areas of workforce productivity that need to be addressed, such as the effect of current workplace arrangements and agreements on the automotive manufacturing industry, and the implications for future investment in automotive manufacturing in Australia (for example, the recently renegotiated agreement covering employees at Holden's plant in Elizabeth, South Australia; or those being negotiated by Toyota and its employees). We need to ensure trade-offs in improved wages and conditions are paid for in real, measurable and tangible productivity / flexibility improvements. Government compliance costs such as payroll tax, workcover, superannuation guarantee and so forth need to be understood in the global context.

These issues are not only important for the automotive sector but for any future competitive industries we hope to develop in this country[7].

The need to change

Emergent disruptive technologies have the potential to change not only the way cars are manufactured but they could also enable lower economies of scale, higher value sales and export potential, whilst also improving vehicle performance. Whilst emergent technologies are not yet proven at scale, there are some exciting developments such as a move to power train electrification in hybrid and full electric form, and composite body structures (this technology is complementary with digital manufacturing methods such as 3D printing for mould making, enabling rapid development and lower scale production viable.

The move to a composite body structure, such as that being implemented by BMW, is a good example of how emergent technologies could transform the current automotive manufacturing plants found in Australia. Facilities would no longer need to have a stamping plant, welding plant or an EPD body plant. There would be no need for sheet metal tooling, which is both expensive and inflexible. As a result the need for upfront capital would be significantly reduced; likewise energy and water consumption would be significantly lower. Additionally there would be significant weight advantages for the vehicle itself, improving performance and also accelerating the use of electrification by offsetting electric vehicle battery weight.

Australian car manufacturers have yet to adopt these disruptive technologies as the associated costs and risks have been considered to be too high to drive the switch from the existing traditional manufacturing methods. There is also a commercial risk for large OE automotive companies to adopt these technologies outside of their home markets.

[7] Collier, Grace. The Australian: (2013) http://www.theaustralian.com.au/opinion/columnists/be-holden-to-us-all-carmaker-must-bite-the-wages-bullet/story-fnkdypbm-1226766308075#sthash.fihIMrQj.dpuf

BMW has partnered with a composite manufacturing company to allow rapid adoption of expertise[8]. Partnering with key technology companies may help change the dynamic of the current automotive value proposition (where all the IP is owned and controlled by the global OE manufacturer). There is an opportunity for Australia to be a leader in this technology by focusing on the benefits of performing these leading capabilities in Australia, rather than encouraging a status quo manufacturing technology which is scale dependant. This is an area where government policy could play a role in lowering the cost and risks to switch.

Australia's competitive advantage

Australia is a great place to live, providing the advantage of producing vehicles in an envious lifestyle that attracts and retains top talent from around the world. Australia has a relatively stable workforce with high skills and good institutional research capability. This enables the creation of new designs and processes, and represents a significant advantage when considering the adoption of disruptive technology and designs.

Australia is, however, geographically isolated. Supply chain distance to Australia means higher inventory holding costs, logistics costs, quality risk and design change agility which prejudices high levels of customisation. A local supply chain industry provides advantages that can facilitate for mass customisation and is agile enough to suit changing demands. Due to the geography of Australia there will need to be hubs of suppliers near to assemblers to support the modern approach to supply logistics.

The risk of moving the 'value added' manufacturing element off-shore is high when developing emergent technologies. Many innovations are developed from the co-location of design and manufacture. Incentivising the adoption of new technologies needs to be a key driver of future policy. If successfully adopted it could not only change the viability of small scale vehicle production, but also enable spill over capabilities into other key economic sectors.

The future benefits to Australia

If Australia was able to leverage these capabilities they could be shared with other strategic sectors, for example composite manufacturing with defence projects and aerospace; battery and hybrid technology with future mining methods. The benefits could be leveraged over a greater footprint of Australian industry enabling a scale around some key technologies. This could help Australian companies to leverage this capability in further global markets where it is not yet established.

[8] Miel, Rohda (2013) Composite body BMW i3 starts production.
http://www.plasticsnews.com/article/20130918/NEWS/130919923/composite-body-bmw-i3-starts-production#

The need for a transition plan

If the industry is to transition into a high value, viable automotive sector it will need time. Vehicle programs take years to plan and implement. If there is insufficient time in a transition, there is likely to be a loss of key skills and supply chain capability. This could significantly slow or limit the successful adoption of emergent technologies.

Time is also needed to develop new supplier capabilities. Many do not yet exist; there is an opportunity to develop this progressively by transitioning skills from the existing automotive sectors if a clear strategy and timeline is developed and communicated, and linked to an industry transition program.

Extent and relevance of industry assistance in other countries

The Australia Government needs to make a determination of whether or not the presence of a viable vehicle manufacturing (as opposed to mere assembly) industry is a strategic requirement for the country. If so, it needs to prosecute the case and then develop a framework upon which to base policy and financial development based upon innovative technologies that are judged to be critical to sustained success of our economy.

As a nation we need to identify and protect the development of those key things in which we are globally competitive. If we do not have a long-term policy that defines this, there will be no future for the industry in Australia as other countries exploit our weaknesses for their gain.