

Productivity Commission

Australian Automotive Industry Assistance

Australia's Automotive Engineering Centres are unique, globally competitive high value assets, not just for the auto sector but for Australian manufacturing and new global product development in general.

A comprehensive Automotive Industry Plan is required consistent with Australian High Value and High Skills Economic Assets.

Such a plan must include provision for Australian Automotive Engineering operations to manage business models that leverage their capabilities and competitive strengths and minimise arbitrary constraints imposed by corporate head offices.

VCAMM

VCAMM is a not for profit company, established under a grant from the Victorian Government to facilitate the conduct of scientific research in the field of advanced materials manufacturing and constituted to provide commercial management and research liaison services for its Consortium Membership of universities.

VCAMM strengthens Australian manufacturing by helping firms develop ability to utilise leading edge science and technology (IP) to grow their capability in management, innovation and market realisation by accessing the expertise and resources of the research community and associated collaborative networks, in particular with regard to New Materials Technology, Global Business Models and Collaborations.

As an **Intermediate Technology Organisation (ITO)**, VCAMM facilitates technology development, transfer and commercialisation for manufacturing firms and assists with the incubation of start-up and early stage manufacturing enterprises.

Automotive Industry Assistance

Although the firms supported by VCAMM range across a diverse spectrum of manufacturing in Australia, the staff of VCAMM have a strong history and ongoing connectivity with all levels of the Australian automotive industry and have an appreciation for the personal and organisational skills that this industry has helped develop in Australia as well as the ability to connect with global OEM and key suppliers.

VCAMM encourages continued government support of the Automotive industry and offers the following observations to assist the Productivity Commission in its' deliberations.

Key Observations

Much of the public debate on automotive industry assistance has focused on the subsidies to maintain vehicle assembly operations in Australia. While this has merit in relation to supporting direct employment in the assembly plants and through local supply chain, it is important to also consider the substantial value accruing to Australian industry from the vehicle platform engineering operations of Ford and Holden in Victoria, in particular.

These operations have been and continue to be globally competitive and directly provide highly skilled jobs in engineering, program and supply chain management, not only in the vehicle design centres but in the associated systems supplier operations and design, development and testing services by numerous local businesses.

Furthermore, the operations of these design centres and supplier operations provides direct access to global supply chain networks in the automotive sector for innovative Australian businesses with new products and material technologies.

The engineering centres of GM Holden and Ford (Australia) in particular, provide two of the very few operations in Australia with the organisational capability for systematic translation of major design projects to cost effective mass production for a global market, including coordination of complex supply chains and aftersales service.

VCAMM has found this to be far the most significant local breeding ground for the critically important skills required for new globally competitive innovative manufacturing businesses required to sustain our sophisticated industry network. To our knowledge, there are virtually no other complete supply chains in Australia with this scale of capability.

The skills development obtained within the automotive industry – in New Product Development systems, Technology Deployment skills, systems engineering, supply chain management for complex new product programs – and their demonstrated transfer to other industries, such as the Defence Sector (in many cases moving from traditional ‘build to print’ to ‘in-house design’) is substantial.

Furthermore, these OEM operations and their support network of suppliers and service providers are able to be leveraged by other firms in other product and industry sectors. Without the critical mass of these operations we would expect to see a decline in new product and process innovation in manufacturing in general, at a time when it needs to be increasing.

Examples

Carbon Fibre

VCAMM and Deakin University have collaborated to establish an internationally significant carbon fibre research facility in Geelong and have established a vibrant network of engagement with international businesses within the composite supply chain. As a result of this connectivity with the global supply chain, VCAMM has first-hand experience in the dynamic growth in the industry. It is universally agreed that the global carbon fibre demand is estimated to increase at a CAGR of 13-17% per annum and is forecast to reach approximately 150,000 metric tonnes by 2020. Taking the global market from its current value of US\$14.6 billion to over US\$36 billion by 2020.

The Automotive demand for carbon fibre composite components is a key driver in the growth of the market, with global forecast ranging from US\$300 million to US\$1.2 billion p.a. (15,000 – 55,000 tons) based on key demand trigger points such as emission and fuel efficiency regulations, and

technology improvements towards cost-effective manufacturing. The cost of manufactured carbon fibre parts is changing rapidly, based on automotive industry driven innovations throughout the value chain, from precursor selection and carbon fibre production to component manufacturing processes.

Global automotive OEMs are recognizing the potential for carbon fibre composites in their products and need for close integration between fibre production, component manufacturing and system design to overcome technical hurdles and are beginning to react. Many, most notably BMW, VW, Daimler and Ford are setting up partnerships with carbon fibre Manufacturers to drive innovation through the manufacturing supply chain and create a competitive position. Despite these nascent relationships, the global automotive carbon fibre composite supply chain remains chaotic and open to influence. The skills and capabilities associated with the Australian Automotive engineering operations provide an opportunity for local firms and innovators to exploit these opportunities and establish profitable niches in this rapidly growing global market. This in turn will lead to valuable technology transfer into other industries in deed of composite engineering design skills e.g. Oil & Gas, Wind Turbine, Defense and so on, enabling Australian manufacturing to play a key role in this exciting new wave of material manufacturing.

MicroHeat Technologies

MicroHeat Technologies is an emerging advanced technology business targeting global water heating markets with an innovative disruptive technology. Like all “Hi Tech” IP intensive start-ups, MicroHeat struggled to acquire appropriate manufacturing and quality skills. Critically to their development, MicroHeat has been able to partner with automotive Tier one and two suppliers who are hungry to leverage valuable capabilities from the Australian automotive supply chain. These include design (FMEA, DFM, CAD, FEA) and production systems with Futuris at their facilities in Fishermans Bend and Broadmeadows, tooling and metallic component design and manufacture at Diver Consolidated Industries in Reservoir, design and quality systems for complex electronic circuit boards from both Continental in Bundoora and Australian Arrow in Carrum Downs and plastic injection moulding at S&K Plastics in Preston. The opportunity to access and leverage local capabilities in this regard is extremely valuable to many emerging new businesses, MicroHeat is just one example.

Issues

While there is less apparently a need for subsidies to support these valuable engineering operations (which are in economic terms globally competitive), there are other significant issues that must be comprehended as part of a comprehensive plan to maintain and leverage full spectrum of capabilities across the supply chain in Australia. VCAMM does not accept the proposition that Australia cannot be a globally competitive player in this extremely valuable industry. Germany has been a high cost country for decades but the automotive industry is still associated with 1 in 7 jobs in that economy. It is a matter of having the right industry structure and policies for the specific skills and capabilities of our economy.

Perhaps the most significant issue to be addressed is the (mis)alignment of parent company strategies with the local industry interests.

Holden’s Engineering operation has delivered excellent new vehicle programs in the last few decades but has been reducing dramatically since the Global Financial Crisis, largely as a result of

corporate strategy corrections by head office. Access to export markets within the GM network has reduced and vehicle programs have been centralised at the larger engineering centres, virtually eliminating the relevance of their Australian headquarters to the parent organisation.

The product range of GM is increasingly centrally managed and the corporation is focused on optimising the location of assembly plants for generally low cost 'commodity' vehicles where they can minimise costs and maximise government subsidies. This is inconsistent with a strategy for a high cost economy seeking to maximise leverage of high value skills and capabilities, particularly in new vehicle engineering.

Ford Australia in comparison has been recognised for their globally competitive New Product Development and is currently responsible for engineering product lines in several international production facilities from Australian engineering HQ. This is a commitment that needs to be recognised and supported. It also needs to be understood how fragile the sustainability of the capability will become if there is only one serious player left in the economy compared to the resilience of a healthy local rivalry between several engineering operations.

Recommendations

We would therefore, recommend that the nature of ongoing government assistance should be part of a comprehensive vehicle industry plan and not simply an assembly plant subsidy to buy a few more years from one operation. It must address structural issues of accessing global markets by local operations and business models that are appropriate for a high cost economy such as Australia, and not simply subsidies to try and compete on a 'commodity' basis.

Taxpayer support should be linked to commitment for investment in globally relevant engineering services – effectively facilitating the local capability to compete on its' merit for new vehicle programs and over time, expand its global client base. Where this is proven incompatible with parent company strategy, then the government can play a key role and leverage its' assistance program to facilitate a sale/transfer of capability to other parties to maintain continuity of capability. For example, this could be achieved through channelling financial support to co-investment in a new vehicle program for export and making this available to prospective inward investors in Australian capability.

The comprehensive vehicle industry plan should include Tier 1 suppliers and system specialist businesses servicing global markets, where local technology can be integrated into vehicle platforms internationally for high value system and component exports.

VCAMM believes it is critical that Australia maintains a critical mass of the high value system skills associated with the ability to engineer a vehicle from concept to mass production and global export as a foundation of our Advanced Knowledge-Based Manufacturing sector.