SADILP 2015

CONCEPT PAPER

In order to provide the best Defence procurement solutions, we will at times need to look offshore. How can the Australian defence industry maximise its involvement in supporting & integrating imported acquisitions into our defence capability, while creating local jobs and opportunities and maintaining optimum skill levels?

David MURFETT	REDARC
Joanna RAUBISZKO	Department of State Development
John SALERNO	Dedicated Systems Australia
Larry SCUTERI	PMB Defence Engineering

Executive Summary

Australia is a unique country with large land mass and relatively small, highly concentrated population. This places significant demands on the technology and capabilities required to protect our borders. Whilst Australia has proven its ability to produce Defence products that compete globally; we lack the critical mass to design and build all of the diverse technology requirements.

As a result, at times Australia needs to look offshore to provide the best Defence procurement solutions. This paper examines how the Australian Defence Industry can maximise its involvement in supporting and integrating these imported acquisitions in the current defence environment.

The Defence Industry is fundamentally different to other sectors of the economy as it is mainly focused on serving the demands of a sole and powerful customer - the Australian Defence. As such the industry is 'subject to the government policy of the day'.

Currently, this policy is set in the Defence and Industry Policy Statement 2010 which clearly states "that capability acquisitions and sustainment decisions are not made on the basis of industry assistance" and "that protectionist measures such as offsets and local content quotas are costly and counterproductive and have no place in the Governments procurement process".

The key problem at the moment is not Australia's ability to produce world class outputs but much more so its direction and image on a political and industry front.

The industry already proved that is capable of competing on a global stage and has shown this though its 'champion' projects like Nulka, Bushmaster and now the F-35 program.

However, the Defence sector does not have capability to provide all defence solutions. The industry needs to differentiate itself and be known to go to for acquisitions such as UAV's, Light Armoured Vehicle Customisation, Airframe parts etc., and let go any areas at which it is not as great.

In the current policy setting, the Australian Defence Industry needs to look for solutions such as niche markets where it can supply products and services to both local and international defence industries (i.e. carry out the whole Manufacturing Development Life-Cycle).

The sector needs to invest, re-invest and promote areas where it has been successful – capitalise on its wins, and reuse heavy investment in world class infrastructure and work in collaboration to establish specialised clusters or hubs that are already known to provide economic benefits to other sectors of the economy.

In addition, Brand recognition is vital. Who is 'Defence Industry Australia' and what do we have to offer? The industry needs to send a consistent and aligned message from all sides of politics and all industry members.

Moreover, the sector needs to use its strong government lobbying capability to influence policy making and ensure local industry's best interests are always a political imperative.

Only policy that provides long term vision, clarity and certainty would encourage investment in infrastructure and research and development that are required for the future sustainment of the industry while maintaining optimum skill levels and creating local jobs and other opportunities.

Australia has some unique resources and talents which can be utilised to offer value add and sustain a competitive advantage. The areas to focus on include the Defence Industry familiarity to European and US partners, social and socio-political stability, remote and secure location that ideal for testing new defence products and well regarded higher education to name a few.

By using these unique resources and talents Australian Defence Industry could build on its strengths to maximise its involvement in supporting and integrating imported acquisitions and deliver world class, globally competitive products.

Table of Contents

1 A Global Outlook

1.1 Australia's Unique Situation

Australia is a country with a large land mass and relatively small, highly concentrated population. In a Defence context it is a difficult problem to have, as a small number of resources need to be able to cover a large area in order to protect our borders and beyond. This places significant demands on the technology required to feasibly meet capability requirements. Whilst Australia has proven its ability to produce Defence products that compete internationally; we lack the critical mass to design and build all of the diverse technology requirements.

This problem is faced by all technology and manufacturing industries in Australia Defence or otherwise. The small Australian market means businesses must deliver a unique proposition and become competitive globally. This proposition must be based on the familiar mantra of cost, quality and delivery in full on time (DIFOT).

Australian business has proven already its capability in doing this. The SME suppliers to the automotive industry delivered global quality product for many decades. The fall of the automotive industry was not their doing. In the Defence space, names like Nulka and Bushmaster are well recognised as global success stories. The 30-odd suppliers to Joint Strike Fighter (JSF) are proving likewise – hands up those who can name them all?

Perhaps Australian Defence Industry is the unrecognised SME of the Defence world. How do we get our brand recognised?

1.2 Global Competitiveness

Mark Thomson wrote (Thomson, 2014)

> *"The message is clear; the more work that's done in Australia the better. In the case of the F-35, it's likely true. Rather than rely on offsets, Australian firms compete with foreign manufacturers to supply the global F-35 program so that only internationally competitive firms thrive. In other instances, local sourcing occurs absent foreign competition and at a sizable cost premium, such as the troubled Air Warfare Destroyer Project where we are getting three vessels for the price of four."*

There are globally competitive methodologies Australia can use to participate in the supply chain – and in the case of the F-35, not only to deliver a product to Australia, more importantly, to be able to deliver the same world class product *globally*. Within the closed community of the F-35, Australia has a reputation as being able to stand beside any other global contributor.

The further observation in this quote is that for some items we cost more. It takes time to develop and refine the skills, processes, human capital, and supporting businesses to manufacture a world class product. This requires stability and long term investment and confidence in both leadership and customers that you *will* get there over time. By the time we produce Frigate 6 or 7 will we be 1-for-1 competitive, or better? If not, what is our overall value proposition to the customer?

This is much more than the simple dollar value. Is an Australian built Frigate *worth* 30% more? Australians *will* pay more for an Australian product that is higher quality and provides ongoing, fast and reliable local support. The economic multiplier effect of local employees and businesses paying Australian taxes and spending money in other Australian businesses then becomes a bonus. These measures should also be of value to the Australian Government.

A classic non-Defence industry example of this is when South Australia let the F1 Grand Prix go to Melbourne; it was in an environment where groups were lobbying the South Australian Government that it was a "loss maker" and "too expensive". As an enterprise in its own right, it lost money.

However the spinoff gains to the State were considered immense but difficult to quantify. When SA lost the F1 event, the State realised that events like the Tour Down Under offer substantial indirect value to the local economy. A prosperous Defence Industry can have the same immense indirect value add. Does anyone question the fact that by building three Frigates here, the equivalent value of a fourth will be generated in the indirect gains? If this wasn't the case, why is there such fierce competition between states to secure the build in their backyard?

If Australia is to "Bridge the Gap" during times of local downturn, we need to seek to participate in global defence projects. Do our partners see us as a brand to be relied upon?

1.3 A policy of Support for the Industry

Robert Wylie (Wylie, 2007) when commenting on the Australian Government's Defence and Industry Policy Statement 2007 noted the secondary aim of the policy:

> *"While the Government does not routinely use Defence projects to pursue economic outcomes, the potential economic impact of projects is sometimes an important consideration. In the future, when wider goals are relevant and consistent with our international obligations, their nature and importance will be made clear to potential suppliers."*

While the UK Government in their 2002 policy seeks:

> *"to maximise the economic benefit to the UK from our defence expenditure, a healthy and globally competitive defence industry and the development of a high value technologically skilled industrial base, consistent with the Government's wider manufacturing strategy."*

The difference in language is staggering, and what therefore are the likely outcomes?

Further, Wylie noted:

> *"The UK's Minister for State for Defence Procurement and Minister for State for Employment Relations, Industry and the Regions jointly signed the foreword to the UK Defence Industrial Policy, signalling that the UK Government accords this secondary objective high status. This contrasts sharply with the opacity of non-defence economic and industry development objectives in the Australian 2007 Defence and Industry Policy Statement."*

It is little wonder then that the industry support groups (DTC, AIDN) have pushed for (AIDN, 2014):

> *Recognition that Defence industry is a Fundamental Input to Capability. Consistent with the proposed definition, Government should recognise that industry contributes significantly to and underpins all of Defence's Fundamental Inputs to Capability (FIC). To this end, defence industry should be considered to be the ninth Defence FIC. The outcome of this should be the inclusion and consideration of industry in the FIC analysis for all Defence capability decisions;*

Drawing parallels with the corporate environment, a successful business has complete support for the overall entity from all sectors of the business. The Brand and the Core Values are known and upheld by all employees, from the Sales and Front Office to the Dispatch Department. Australian Defence Industry needs such uniform support across the board, when representing ourselves to our own employees, or to the global community. Our Brand identity and Core Values must be maintained at all times. All political parties and industry players should see it as their key responsibility to ensure that we send one consistent message that Australian Defence is thriving, capable, and delivers outcomes.

1.4 Offsets

At the time of release of the 2007 Defence and Industry Policy Statement, the Government moved away from the use of Offsets. Reaffirmed in 2010 by the then Minister of Defence Materiel and Science (Combet, 2010) "*The policy is emphatic in affirming that the Government will not use offsets or local content quotas to help protect Australian defence industry from overseas competition*. *Previous experience has shown that this approach is not in the best interests of Government, industry or Defence*".

Anecdotally, it would appear that our US partners see Offsets as a normal business practice, while the Europeans may be heading away from it. While abstract examples can clearly be shown of "*chickens for fighter jets*" (Combet, 2010), it is generally perceived that the net result of Offsets was a 30% premium on the cost of offshore acquisitions. This is not a cost effective purchase method, especially when the Offset is far removed from the purpose of the core contract. However, making it clear that Australia has globally competitive businesses in the sector who can contribute and ensuring that their names are on the table on an equal or even preferred basis, can only result in providing "*a healthy and globally competitive defence industry and the development of a high value technologically skilled industrial base*".

2 Manufacturing Development Life-Cycle

2.1 What is it and where do we fit?

Figure 1 shows the four stages of the Manufacturing Development Life-Cycle. Australia is capable of contributing to all of these sectors. We often prove this best in *niche* areas, but there is no question we can complete this cycle in larger global programs. The following exploration of each section shows how.

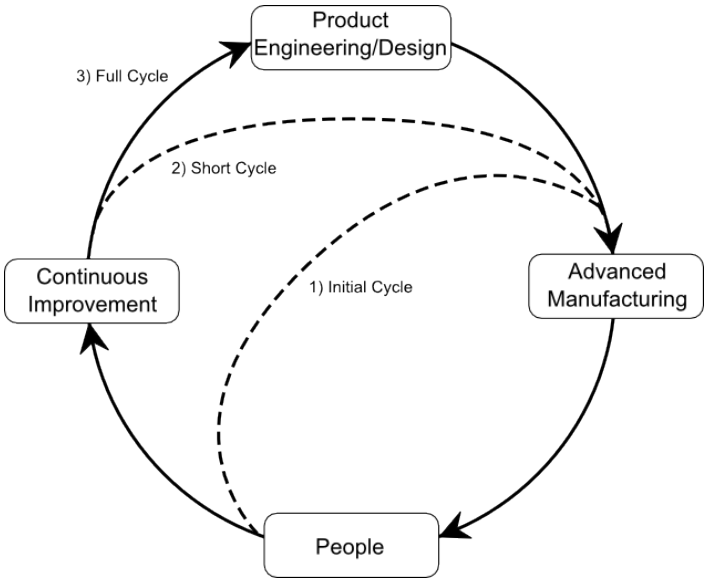

Figure 1 - Manufacturing Development Life-Cycle

2.2 People

Australia is globally recognised for our People. Local Universities are amongst the world's best, and the quality of our graduates follows from this.

Our businesses aspire towards world's best practice and global competitiveness, which in turn develops our People into a globally competitive asset. These qualities are the "entry point" for offshore entities to be attracted to the Australian Development Cycle.

Adding Australia's stability and living conditions, it makes Australia also an attractive destination for foreign workers. As such, for global companies to recruit Executive or highly-skilled staff to mid-to-long-term positions in Australia is generally not a difficult proposition.

2.3 Advanced Manufacturing

Australians have a reputation as early adopters of new technology (Austrade, 2013). This, and a highly educated workforce, allows the rapid absorption of advanced manufacturing concepts and technologies. The JSF project proved that a technology or Advanced Manufacturing process can be quickly transferred and adopted locally. The skills, experience, and adaptability of the workforce leads to a quality outcome in early implementation phases of a project.

However, at this level the global organisation has often not recognised the ability of the local workforce to do more than carbon copy the process. The "Initial Cycle" (shown as "1" in Figure 1) has formed.

2.4 Continuous Improvement

Given the chance to improve upon opportunities given to us, we will do so. Again the qualities of our people and education system pay off for the benefit of the overall global project. We prove ourselves capable of adding value to the process, and now we are at Stage 2, the "Short Cycle".

But are we a critical member of the global team, or a contractor to be abandoned when the task at hand is done? Will the JSF facility in Adelaide remain the global supplier to those countries involved in this program after the initial build is done? Could we not in fact take on the role of manufacturing replacement components for all sections of the airframe when the main run of aircraft has been and

gone? Could Australia be seen as ***the*** global support and development centre for this airframe into the future, when the main partners are focussed on the next big thing?

2.5 Product Engineering / Design

Australians are innovators. From the Stump-Jump plough to WiFi, we are able to develop world leading technologies. However, when dealing with complex global Defence projects, it is often difficult to get access to the full suite of Intellectual Property (IP) from all partners. This creates a barrier to entry for Australian companies to the final part of the life-cycle. Perhaps we should focus on the sustainability of the technology we acquire from global partners, ensuring that as our platforms age that they are still globally competitive. Lessons learned could then be used such that Generations 2 and 3 of a platform could be Australian designed.

To do this, we need to prove ourselves globally competitive in the initial development phase, and be ambitious to take on further responsibilities as global partners look to other opportunities. IP in particular is an area where good early negotiation must be applied during the contract phase of the project. This is critical to Australia to maintain, transform and develop our Defence platforms into the future.

3 Australia's Niche

3.1 Globalising the Brand

Everybody knows the importance of brand awareness – what is Australia's Defence brand recognition in the rest of the world? It should be "Small but strong; world standard design and manufacture; globally competitive in targeted areas; easy and successful partner with which to work". There are some successful examples of branded, targeted Defence Industry programs. Our own Defence Teaming Centre (DTC) lists a number of such opportunities in Aerospace and Specialist Vehicles.

http://www.dtc.org.au/Alliance-Programs/Industry-Alliance-Programs

However, the Brand identity must be consistent and repetitive. Outgoing Defence Minister Kevin Andrews said of his removal from the role that "*Mr Turnbull's decision now means that there have been more defence ministers in Australia than prime ministers in the last three years.*" [With inference to the high turnover in Prime Ministers] (Andrews, 2015). Will this provide a consistent and dependable message on which local business can invest? And if local industry does not know which way to move, what will our potential offshore customers do?

3.2 Our Offering to the World

The best outcome for the Australian defence industry is to have some niche markets where we can supply products and services to both our own and international defence industries (i.e. carry out the whole Manufacturing Development Life-Cycle). Australia has some unique resources and talents which can be utilised to offer value add and sustain a competitive advantage.

- Cultural familiarity: to European and US partners
- Stability: Economic, social and socio-political stability, climatic and geological conditions
- World class living standards
- Remote and secure location: We have a lot of land and much of it very sparsely populated, making it ideal for testing new defence products in a private and safe environment.
- Innovation: As already discussed, Australians have long been known for their ability to innovate.
- Process: We are very good at implementing standards and processes. This is a distinct advantage for building complex and mission critical products and working in a global environment.
- Education: Australia has a strong a well-regarded higher education system which already caters to many international students.

In short, we have few excuses as a country not to be globally competitive.

3.3 Target Products/Projects

Where can Australia use its strengths? While there are many, we propose three Niche areas amongst many that could be identified and successfully prosecuted by Australian industry. These applications focus on high complexity, low volume products where Australia can be more cost competitive.

3.3.1 Air – Unmanned Aerial Vehicles (UAV / Drones)

UAVs have clear and understood benefits for military use, but the same reconnaissance characteristics make them an essential tool in civilian life. These are small scale devices which can be

built in a garage – or indeed in a University laboratory. A quick Google search will show you the extensive number of Universities already working on such programs, some, such as the Queensland University of Technology already working with Thales in the Defence Industry. "*UAVs are moving at a rapid pace beyond the military sphere into the realm of governments and the private sector.*" (Jenkins, 2013).

This is precisely the type of work where Australia's huge land resources are valuable, as evidenced by the Taranis project – a joint BAE UK/Australia developed UAV tested in 2013 at Woomera: "*the largest weapons and aircraft testing range in the world.*" (Corcoran, 2014)

UAV technology has applications in multiple sectors, and this is essential for the long term stability of any development program.

- Defence
- Agriculture
- Mining
- Mapping (Land and Sea)
- High Power Line Inspection (and just about any other large scale inspection activity
- Entry to high risk areas

3.3.2 Land – Vehicle Fit Out

Australia has been a successful exporter with the Bushmaster, and was a global exporter of world class vehicles for many years. However, we struggle to be successful in a commodity market space. There are a number of competitors for military vehicles, and perhaps the base platform is not the area where we will prove to be most profitable. Volvo and Kenworth have successfully built heavy vehicles in Australia for many years, and for anyone who visits their production lines you would note that each vehicle is different than the next. Then they are often sent to body-builders who customise even further – Woolworths, Coles, Toll, TNT to name a few, all require different customised configurations. While we might be able to make the vehicle base, we can undoubtedly manufacture and tailor the "customisation package" or pods that turn a chassis into an Ambulance or a Reconnaissance vehicle - a substantial growth on the type of activities conducted by GDLS for the AUSLAVs.

3.3.3 Sea

Australia has had numerous attempts at shipbuilding with varying success – the ANZAC and COLLINS Class programs being the most successful to date. The main issue is the boom bust cycle of projects resulting in additional costs in (re-)setting up a workforce and corresponding skills shortages. This was experienced following the completion of the ANZAC ship program, through to the start of the Air Warfare Destroyer Program. Australia invested significantly in shipbuilding infrastructure such as Techport in SA and the Australian Marine Complex in WA to support shipbuilding and maintenance. The key to Australia's success in achieving some degree of naval self-reliance is a shipbuilding plan that allows for a multi-class rolling build program. Why is this important – sovereignty, security and economic benefits just to name a few (AMD/DTC, 2015).

4 Summary of Recommendations

Australia is capable of competing on a global stage and has shown this though projects like Nulka, Bushmaster and now the F-35 program. The key problem at the moment is not Australia's ability to produce world class outputs but much more so its direction and image on a political and industry front.

The following are recommendations in answer to the question posed to the authors (see title page):

- Brand recognition is vital. Who is Defence Industry Australia and what do we have to offer? Send a consistent and aligned message from all sides of politics and all industry members.
- Use cooperative programs which provide broader community benefits including employment and investment in infrastructure, without the overcharging and wastefulness that may occur with an Offset program.
- Use Global Supply Chain initiatives within the Primes
- Use Globally recognised benchmarks – SCIP, ISO9001, and perhaps TS16949 (Automotive) and equivalents in other sectors (Maritime, Aerospace etc.) – proof of a quality endorsed industry.
- Have a very strong government lobbying capability on behalf of the industry to ensure local industry's best interests are always a political imperative.
- Invest, re-invest and promote areas where we have been successful – capitalise on our wins, and reuse heavy investment in infrastructure.
- Specialise in niche areas. We can't do everything successfully. Become known as *the* country to go it for UAV's, Light Armoured Vehicle Customisation, Airframe parts etc., and let go any areas we're not so great at.
- Manage the boom bust cycle that results in so much waste by either more strategically planned (timed) defence acquisitions and/or specialising in Civilian/Defence transferable areas.

5 Acknowledgments

The authors would like to acknowledge the following people who shared their time to discuss the topic or elements of it with the group members. The opinions and conclusions expressed in this report are ours, not theirs, and any offence or blame lies solely on the heads of the authors.

First and foremost, our group mentor:

- Stuart Lindley, BAE Systems

Additionally:

- Adam Watson, Manager Aust. Industry Global Access Program, BAE Systems
- Tony Martin, Business Advisor, Defence Industry Innovation Centre, Dept. of Industry

6 References

AIDN, 2014. *First Principles Review of Defence.* [Online]
Available at: http://www.defence.gov.au/publications/reviews/firstprinciples/Docs/AIDN.pdf

AMD/DTC, 2015. *Australian Made Defence.* [Online]
Available at: http://australianmadedefence.com.au/why-it-matters/
[Accessed 2015].

Andrews, K., 2015. *Media Interview reported in various news sources.* [Online]
Available at: http://www.theaustralian.com.au/news/latest-news/kevin-andrews-dumped-as-defence-minister/story-fn3dxiwe-1227535711167

Austrade, 2013. *Australia - Destination Innovation.* [Online]
Available at:
http://www.austrade.gov.au/ArticleDocuments/3843/Australia_Destination_Innovation_Brochure.pdf.aspx

Australia, T., 2006. *So where the bloody hell are you advertising campaign,* Sydney: s.n.

Brown, J., 2014. *The.* [Online]
Available at: http://www.lowyinterpreter.org/post/2014/05/20/Australian-defence-exports-Beyond-Bushmaster.aspx
[Accessed 20 Sept 2015].

CASG, D. o. D., 2015. *Australian Military Sales Office.* [Online]
Available at:
http://www.defence.gov.au/dmo/DoingBusiness/Internationalengagementandexportsupport/AustralianMilitarySalesOffice/

Combet, H. G., 2010. *Building Defence Capability: A policy for a smarter and more agile defence industry base.* [Online]
Available at: http://www.defence.gov.au/minister/94tpl.cfm?CurrentId=10502

Corcoran, M. G. a. M., 2014. *Taranis drone: Britain's $336m supersonic unmanned aircraft launched over Woomera.* [Online]
Available at: http://www.abc.net.au/news/2014-02-06/taranis-drone-uk-mod-bae-systems-woomera-south-australia/5242636
[Accessed 15 11 2015].

Defence Ministers Office, D. o., 2012. *Australian Military Sales Office Established.* [Online]
Available at: http://www.minister.defence.gov.au/2012/07/02/australian-military-sales-office-

established/
[Accessed 20 Sept 2015].

Jenkins, C., 2013. *Thales commissions study to advance Australian UAV research.* [Online]
Available at: https://www.thalesgroup.com/en/australia/press-release/thales-commissions-study-advance-australian-uav-research
[Accessed 15 11 2015].

Thomson, M., 2014. *The Strategist.* [Online]
Available at: http://www.aspistrategist.org.au/defence-projects-jobs-and-economic-growth/
[Accessed September 2015].

Wylie, R., 2007. *A Defence Policy for Australian Industry: Are We There Yet?.* [Online]
Available at: http://www.securitychallenges.org.au/ArticlePDFs/vol3no2Wylie.pdf
[Accessed 20 September 2015].