

30 September 2014

AUSTRALIAN BUSINESS DEFENCE INDUSTRY
SUBMISSION TO 2015 DEFENCE WHITE PAPER
EXECUTIVE SUMMARY

Australia is in need of a logical, robust defence industry policy. This submission aims to provide an approach based on the development of a conceptual framework for defence industry and thence by viewing defence industry through a strategic risk lens.

The proposed defence industry framework is based on three “framing and guiding principles” (the external view) and three “industrial themes” (the internal view). The framework is designed to provide a structure within which defence industry can grow over the longer term in a manner most aligned with the attainment of national strategic goals. The resultant local defence industry capabilities will therefore be most relevant to prevailing and emerging strategic circumstances.

The framing and guiding principles, and themes are:

Framing and Guiding Principles

- Strategic Alignment
- Indigenous Industry as a Capability
- Creation of the Current and Future Investment Environment

Industrial Themes

- Mitigation of Strategic Risks
- Maximise Domestic Economic Activity
- Innovation

In addition, in order to have relevance, the defence industry policy needs to be linked to real world activities through a number of Fundamental Inputs to Industrial Capability (FIIC).

These FIIC are:

- In-country facilities
- Skilled and Available Workforce
- Access to Intellectual Property and Design Information
- Sustainable workflow
- Access to Capital
- National Infrastructure

PREAMBLE

Australia is in need of a logical, robust defence industry policy. This submission to the Defence White Paper (DWP) 2015 aims to provide the framework for a defence industry policy that:

- provides a rationale for the development of defence industry in Australia,
- places this defence industry within the relevant strategic context,
- provides a mechanism for the consideration and realisation of the industrial base most relevant to Australia's strategic circumstances,
- encourages the development of an local industry sector that provides benefits for the Australian economy through being globally competitive,
- provides a platform for innovation,
- utilises the comparative advantages that exist in the wider Australian economy,
- provides investment confidence for companies working within the defence industry sector, and
- provides the underpinning for the maintenance and development of the defence industry skills and capabilities that are most relevant to Australia strategic requirements.

What is defence industry? This question is fundamental in developing an appreciation for the size and scope of the local defence activity, and yet is difficult to answer. At one end of the scale defence industry can be considered as being all companies and sectors that provide goods and services to the Department of Defence. At the other end it might be more narrowly considered as being the provision and sustainment of capabilities required by the Australian Defence Force (ADF) for the conduct of its operational missions. The types and numbers of companies and the associated number of employed persons will vary accordingly.

The Defence Industry Policy Statement (DIPS) 2010 estimates that there are more than 3000 Small to Medium (SME) companies engaged in the defence sector¹. Estimates of the number of personnel employed in the defence industry sector range from 29,000² to 37,000³, and to more than 50,000 in some estimates. The local defence industry sector is therefore worthy of a deep and thorough consideration with respect to its future development, longevity and required areas of expertise.

¹ *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*; Commonwealth of Australia, Canberra, 2010; para 2.46.

² DIPS 2010; para 1.4.

³ *Defence Industry Workforce Study Background Paper*, Commonwealth of Australia, Jan 2012; Section 2.6.

Trends in the contracting associated undertaken by the Defence Materiel Organisation (DMO) for the period 01 July 2007 to 30 June 2014 as determined from publicly available contract data at www.austender.com.au, have shown that there is a decreasing amount of DMO contracts (by value) being awarded to companies within Australia and a corresponding increase in contracts being placed with offshore entities, particularly direct to the US Government. These trends are evident for both acquisition and sustainment, with the latter being of most immediate concern given the statement in DWP 2013 that “.. it is anticipated that the majority of opportunities for local industry will emerge in the sustainment of military equipment in service,”.⁴

These trends are provided at Figures 1 and 2 below for reference purposes.

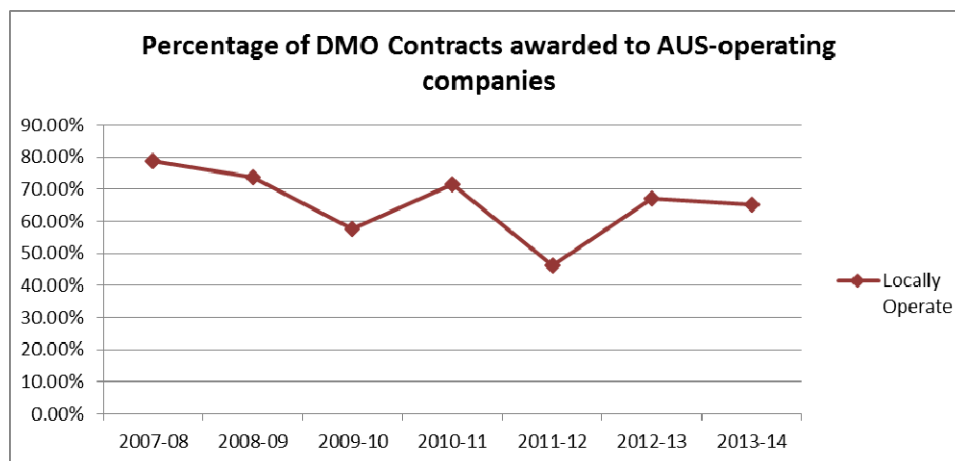


Figure 1. Percentage of DMO Contracts Awarded to Australian-operating companies 2007/08 – 2013/14⁵

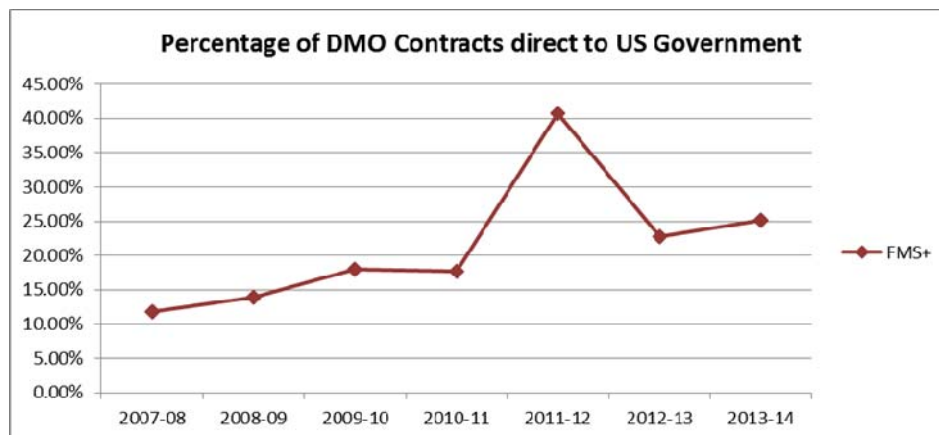


Figure 2. Percentage of DMO Contracts placed directly with the US Government 2007/08 – 2013/14

Whilst the results of the DMO contract analysis may be at variance with Department of Defence data on contractual cash flow, it needs to be remembered that the contract figures

⁴ DWP 2013, paragraph 12.52.

⁵ In the context of this discussion an Australian-operating company has an ABN and is registered to conduct business in Australia.

show a commitment to spend and that cash flow follows contracts. The trends as presented above will therefore, inevitably, impact on the cash flow (and hence the profitability and employment) of companies operating in the defence environment within Australia. The logical end state from these trends, if uncorrected, will be an industrial future that is not suitable for Australia's strategic circumstances, and is not capable of providing the necessary through-life support for our military capabilities.

A new approach to viewing and managing local defence industrial capability is therefore required.

An enduring feature of successive Defence White Papers has been the notion of self-reliance; of being able to counter direct threats on Australia's sovereignty within our own capabilities. DWP 2013 states this as "The highest priority ADF task is to deter and defeat armed attacks on Australia without having to rely on the combat or combat support forces of another country."⁶ There would seem to be, however, an inherent contradiction between this statement and the developing situation highlighted in the above graphs with respect to local industrial capability and the ability to support the ADF without having to rely on external industrial support.

This submission aims to address these issues and to provide an approach based on viewing defence industry through a strategic risk lens.

The Defence Issues Paper 2014 asks a number of questions with respect to defence industry policy, but fails to put these in a broader conceptual framework within which the questions would have more relevance, and which would guide the development of the capabilities considered necessary in the local industrial base into the future. This submission focusses primarily on the development of that conceptual framework, whilst also providing information directly related to the questions within the Issues Paper. For reference purposes the industry-relevant questions from the Defence Issues Paper are repeated here, namely:

- Which industrial capabilities are vital for the ability of the ADF to field forces and must be located in Australia?
- What are the consequences for Australian industry of international trends in the defence industry sector?
- How can the Government best encourage the development of an internationally competitive Australian defence industry?
- What is the future of existing industry support programs provided by Government?

⁶ DWP 2013, paragraph 3.35. Also see DWP 2009, para 6.5 and DWP 2000, para 5.14.

DEFENCE – INDUSTRY CONCEPTUAL FRAMEWORK

The input to defence industry policy in this submission provides a framework for the understanding, planning and achievement of the indigenous defence industrial capability that is required to support national strategy. The policy levers described herein recognise that the Australian economy is not capable of sustaining a predominantly local approach to the development, acquisition and sustainment of defence capability and that there is substantial foreign involvement exists in this sector. Moreover, it is also recognised that this foreign investment and involvement will continue for the foreseeable future. The defence industry policy framework as detailed in this submission is consistent with the Government's pre-election commitment to the local defence industry.

The way forward is based on viewing the problem through a strategic risk and risk mitigation lens, and hence on addressing, categorising and developing the local defence industry in terms of the assessed risk to the achievement of strategic outcomes. This approach extends the current concept associated with the Priority Industry Capabilities (PICs)⁷ as introduced in DIPS 2010, and reaffirmed in DWP 2013, and places this at the core of defence industry policy.

The proposed defence industry framework is based on three "framing and guiding principles" (the external view) and three "industrial themes" (the internal view) which are depicted in the following diagram and described in more detail in the following paragraphs. The framework is designed to provide a structure within which defence industry can grow over the longer term in a manner most aligned with the attainment of national strategic goals. The resultant local defence industry capabilities will therefore be most relevant to prevailing and emerging strategic circumstances.

The framing and guiding principles, and themes are:

Framing and Guiding Principles

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- Creation of the Current and Future Investment Environment

Industrial Themes

- Mitigation of Strategic Risks
- Maximise Domestic Economic Activity
- Innovation

⁷ *Defence White Paper 2013* para 12.24 defines PICs as "those capabilities which confer an essential strategic advantage by being resident within Australia and which, if not available, would significantly undermine defence self-reliance and ADF operational capability".

In addition, in order to have relevance, the defence industry policy needs to be linked to real world activities through a number of Fundamental Inputs to Industrial Capability (FIIC).

These FIIC are:

- In-country facilities
- Skilled and Available Workforce
- Access to Intellectual Property and Design Information
- Sustainable workflow
- Access to Capital
- National Infrastructure

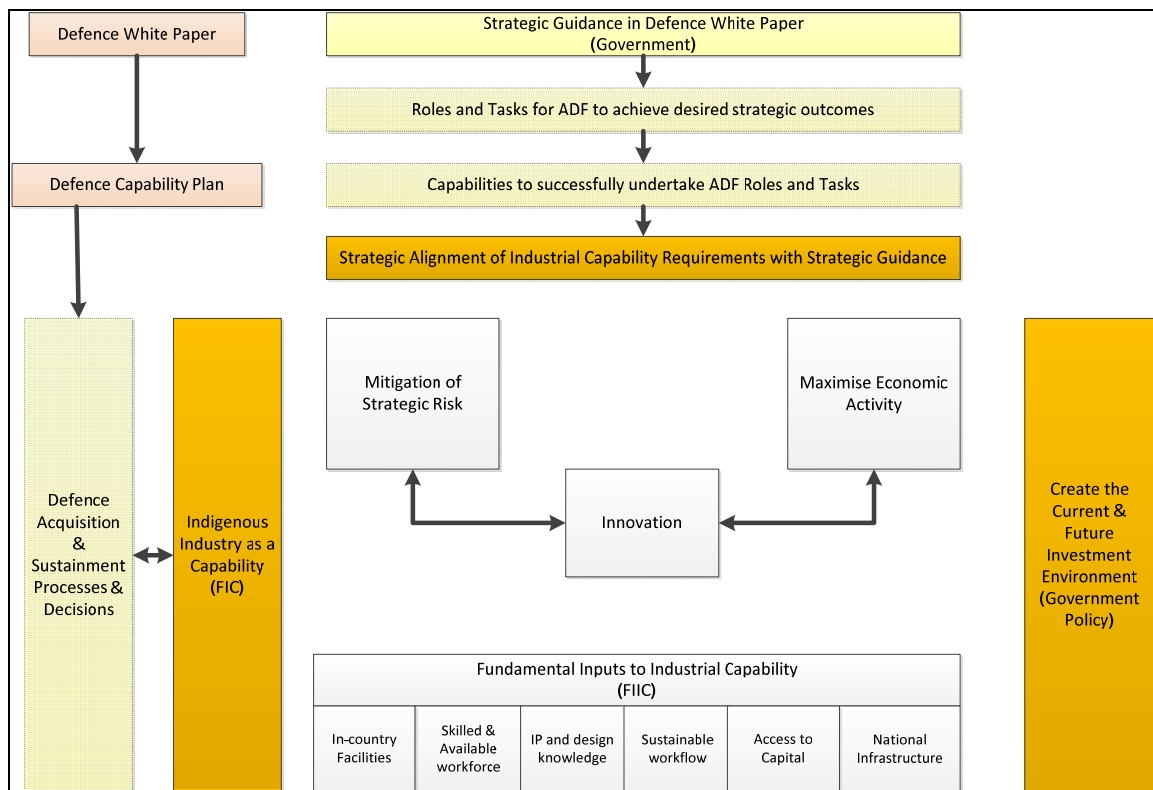


Figure 3. Conceptual Framework for Defence Industry Policy

FRAMING AND GUIDING PRINCIPLES

The framing and guiding principles are designed to provide some high-level principles to bound and guide consideration of defence industry policy in the Australian context. These are described in more detail below.

Strategic Alignment

The need to align strategic policy and industry policy is not new. In 2006, Paul Dibb wrote that “Defence needs to be much better at aligning industry capability with defence

strategy”⁸. Given the contracting trends shown in Figures 1 and 2 above, the need for this is arguably greater now than at any time in the recent past.

Strategic Alignment is required to ensure that defence industry policy and the development of the local defence industry is consistent with national defence strategy as enunciated in the DWP. Strategic Alignment will result from a detailed consideration of the capabilities that are needed within the local industry base to support the desired strategic outcomes. This determination will require a detailed analysis of defence industry capabilities and will provide a risk-based view of the indigenous defence industry by mapping the way in which industry capabilities impact upon the ADF’s ability to contribute to the attainment of the Government’s strategic goals. This risk-based view of industry will therefore provide insight into those industry capabilities that are critical for strategic outcomes, those associated with medium risk and those that will have little or no impact on the achievement of strategic goals. The distribution of industry capabilities can therefore be considered as sitting within risk tiers, or upon a “strategic risk curve”.

The mapping and alignment of industry capability with strategic risk will illuminate any gaps in existing industrial capability and will allow a detailed consideration of the local Industry as a capability. It is also likely to influence the means by which the Government (through the Department of Defence) interacts with the various capability sectors within defence industry. The risk-based view of industry capability will be expanded upon further in the section on Industrial Themes.

Indigenous Industry as a Capability

Industry is currently not included as a Fundamental Input to Capability (FIC)⁹, and consequently has often been treated as an after-thought in defence planning. A common refrain from Defence sources is that ‘Defence is not here to support Industry; Industry is here to support Defence’. This view omits or ignores the symbiotic relationship that exists between the parties. The consequences of this position is that the longer term ramifications of defence acquisition and sustainment decisions are given scant attention in the early stages of capability planning. The trends in Figures 1 and 2 are an indication of where this lack of consideration of the industrial ramifications might lead in the longer term; namely a declining local industrial capability, an increasing reliance on offshore industry, and increasing sovereign risk through decreasing control over our own destiny. The impact of such a position will be more keenly felt in the higher strategic risk areas of industry capability.

The inclusion of Indigenous Industry as a Capability as a FIC will ensure:

⁸ Dibb, P. (2006). A Defence Industry Development Strategy, in *Growth 57: The Business of Defence - Sustaining Capability*. The Committee for Economic Development in Australia; pp 10-19.

⁹ *Defence Capability Development Handbook 2012*, Commonwealth of Australia, Canberra; para 1.1.3

- The ability of local industry to contribute to acquisition and through-life support is considered, recognised and accepted as capability planning proceeds; and
- The impact of capability acquisition and sustainment decisions on the longer term ability of local industry to contribute to the achievement of strategic outcomes, particularly in high risk industry sectors, is considered.

Create the Current and Future Investment Environment

The oft-repeated position of successive Governments is to grow the local defence industry base. As recently as 20 August 2014 the Minister for Defence stated that:

“We want a sustainable defence industry able to deliver greater capability and endurance, improved functionality, better through life affordability and innovation into new and existing products and services”.¹⁰

This desired end state for industry will require corporate investment. As the sole purchaser of defence-related services and equipment in Australia, the Government therefore has a responsibility to create an environment in which industry feels confident to invest. This does not in any way require the Government to ensure individual corporate success, only the provision of a policy environment within which companies can more confidently make their investment decisions. In a 2011 article on European military - industry engagement, the Chief Executive of the European Defence Agency, wrote:

"There is a need for a better industry-government dialogue on a European level; only when industry fully understands what will be needed in the years ahead can it realistically assess what issues it will face. And government decision makers need to fully understand the industrial base consequences of defence choices."¹¹

Creation of such an environment is multi-faceted, and includes, *inter alia*:

- **Defence-Industry relationships.** Close working relationships between Defence and Industry are fundamental for industry confidence. Industry needs to be involved early in the capability life cycle, and consistently throughout. In addition, the nature of the engagement between Defence and industry may vary according to where an industry sector is on the “strategic risk curve” and may involve the utilisation of strategic partnering in some higher risk areas. Importantly, multiple avenues for engagement need to exist, and not just through a small number of predominantly off-shore Primes.
- **Visibility of, and engagement in, Defence planning.** Industry confidence has been seriously eroded over the last years due to frequent and largely unannounced

¹⁰ Minister for Defence presentation to Australian Business Defence Industry, Canberra, 20 August 2014. See <http://www.minister.defence.gov.au/2014/08/21/minister-for-defence-australian-business-industry-group/>

¹¹ Arnould, C-F. “Enhancing the Role and Engagement of Europe’s Defence Industries”; *Focus*, Autumn 2011, Issue 7; pp 20-21. <http://viewer.zmags.com/publication/1ca64ae3#/1ca64ae3/22>

changes to the Defence Capability Plan (DCP). The DCP is a key document for business investment decisions and needs to be returned to being a believable plan. In addition, as indicated above industry engagement at the very early stages of Defence needs planning would provide an improved basis for corporate investment decisions on issues such as workforce skilling, capital investment and innovation. The issue of engagement was a key part of the 1998 Strategic Defence Industry Policy¹², but little meaningful reform has been achieved.

- **Level the playing field.** A recent report in the United Kingdom (*The Destinations of the Defence Pound*)¹³ showed that 36% of every pound spent in the UK was returned to the Government through taxation and other Government programmes. Tax rates and structures may be different but a similar result could be expected in Australia. Given that no money returns to the Government when contracts are placed offshore, the real level playing field is one that factors in a percentage differential between industrial activity in Australia and that undertaken offshore. Mechanisms should be developed to implement this and to redress the unevenness in the playing field. This could be achieved through provision of information on local activity within tenders, and the introduction of some appropriate accounting structures to provide supplementation (if required) of the Defence budget.
- **Support, encouragement and focus for innovation.** Innovation is repeatedly seen as the way to the future, and therefore needs to be promoted and encouraged, and the products of that innovation supported. In a paper on national innovative capacity Michael Porter and Scott Stern have stated that:

“innovation intensity depends on an interaction between private sector strategies and public sector policies and institutions. Competitiveness advances when the public and private sectors together promote a favorable environment for innovation.”

The authors have further stated that countries that have built innovative capacity have prospered, whereas the reverse is a constraint on national progress. The ongoing work of the Rapid Program Development & Evaluation (RPDE) organisation and the introduction of the Defence Innovation Realisation Fund (DIRF) are positive steps but additional investment and focus is required, and importantly there needs to be a commitment to the introduction into service from local innovation successes. A specific bias in the promotion of innovation towards high strategic risk capabilities is warranted.

- **Support export opportunities.** Australia is a small market for defence product and is unlikely to be able to generate the economies of scale required to compete solely on price. Product differentiation is key, but this requires ongoing research and development, innovation and, importantly, introduction into local service by

¹² <http://www.defence.gov.au/minister/1998/s980602.html>

¹³ Taylor, T., and Louth, J. *The Destinations of the Defence Pound*; Royal United Services Institute Briefing Paper, January 2012.

Defence. Strategic planning for exports is required but an innovation focus on the higher strategic risks capabilities could be expected to result in increased export opportunities in these areas.

- **Reduce the cost of doing business.** The cost of doing business with Defence is an ongoing discussion, and is regularly commented upon negatively by business. Some conceptually simple solutions such as reducing the time between tender and contract award, and amending the tender processes to reduce overall costs have been promoted and need to be introduced as a matter of urgency.
- **Value prior investment.** Defence industry capability is not a disposable commodity, but a range of acquisition decisions indicate that it is often treated as such. In-country industrial capability is quickly lost, but difficult to re-introduce. Prior investment in defence industrial capability is important for handling strategic risks, for regional employment and, in many cases, the development of much-needed Science Technology Engineering & Mathematics (STEM) skills. Prior investment and ongoing commitment to Australian defence activities therefore needs to have some intrinsic value when making capability acquisition and sustainment decisions.
- **Non-partisan approach to Defence planning and force development.** Confidence with respect to defence-related investment by industry would be enhanced if a non-partisan political approach to defence planning could be implemented. Examples of joint planning across political parties exist in other jurisdictions and need to be closely examined and an appropriate model developed for Australia.

INDUSTRIAL THEMES

Mitigation of Strategic Risks

If “the first priority of government is to ensure the nation’s defence and security”¹⁴, it follows that there needs to be a focus on the mitigation of strategic risks. In the defence context the Government’s view of the strategic risks to Australia are enunciated in successive Defence White Papers. The Framing and Guiding Principle of Strategic Alignment introduced the concept of a “strategic risk curve”, or risk tiers, associated with defence industry, as a result of the mapping of industry capabilities. A principal theme for defence industry policy is therefore to focus on those industry capabilities at the higher end of the “strategic risk curve” as these capabilities have been determined as being most important for national security.

A focus on the mitigation of strategic risk does not imply that activity within other areas is not important, but does provide the Government with a logical rationale for making investment decisions that affect the local defence industry sector.

The following ramifications develop from the acceptance of mitigation strategic risk as a key theme for defence industry, namely:

¹⁴ *The Coalition’s Policy for Stronger Defence*; September 2013.

- The need to regularly measure the health of those capabilities linked to higher risk, including assessment of future health;
- The need to consider the impact of acquisition and sustainment decisions on industry sector health for higher risk capabilities;
- The need to intervene should the health of higher strategic risk capabilities be deficient, marginal or deteriorating;
- The need to regularly consider emerging technologies with disruptive potential;
- Investment decisions and other Government industry programs need to be focussed at the higher strategic risk capabilities;
- Restricted tendering may be required to limit competition to in-country companies in some circumstances to maintain or redevelop industry health in higher risk capabilities;
- Strategic partnering may be required for higher risk capability sectors if the development of in-country competition is not realistic or achievable at a feasible price.

Maximise Domestic Economic Activity

ABDI recognises that national benefits will flow from undertaking defence-related innovation, technology development, acquisition (as appropriate) and through-life support in-country in areas apart from those associated with the mitigation of higher strategic risk. Put succinctly, if we can undertake defence industrial activities at a price we are willing to pay then we should do this for the widest possible set of capabilities. The benefits include, *inter alia*, employment, industry attractiveness, development and retention of skills, development of national Intellectual Property (IP), generation of economic opportunity, and export.

Innovation

Multiple studies and papers have emphasised the close link between innovation and national economic growth. In 2007 *The Economist* Intelligence Unit undertook a survey which noted that “long---run economic growth depends on the creation and fostering of an environment that encourages innovation. Innovation is considered an important driver of long---term productivity and economic growth. It is argued that countries that generate innovation, create new technologies and encourage adoption of these new technologies grow faster than those that do not.”¹⁵

Competitive success has also been seen as being dependent upon an organisation’s management of the innovation process¹⁶. Innovation is therefore critical for the

¹⁵ http://graphics.eiu.com/PDF/Cisco_Innovation_Complete.pdf

¹⁶ Odeh, K., Riad, R. and Rabelo, L. *The Innovation Environment Within Systems Engineering of a Defense Organization*. Proceedings of the 2014 Industrial and Systems Engineering Research Conference.

maintenance and management of ADF capability levels and technological advantage in the strategic context, and for the potential for defence industry to aid the national economic performance through exports. In addition there are potential spillover benefits from defence-related innovation into other industrial sectors.

Innovations have been considered to have two main characteristics. The first is that innovations impact on the *status quo* by applying knowledge in a novel way. The second is that innovations are the result of a chain of events that starts with an original idea, invention or discovery, and then proceeds through prototyping, commercialisation, field trials, additional engineering, and sales. Some authors indicate that only by completing this chain can an invention be considered an innovation.¹⁷ This is analogous to the progression of a development along the Technical Readiness Level (TRL) scale towards TRL 8. Importantly, in the Australian defence context the results of the innovation need to be introduced into local service to enhance the prospect of export sales.

Innovation is therefore, as depicted in Figure 3, closely inter-linked with the other two identified themes. This inter-linking has a number of ramifications as follows:

- Innovation programmes need to focus on all aspects of the innovation chain, including introduction into service;
- An increase in the level of investment into innovation programmes is likely to have direct measurable positive results over the longer term;
- There needs to be a focus on innovation investment into those capabilities associated with higher strategic risks and on new technologies and services where Australia may be able to maximise economic activity; and
- Mechanisms need to be put in place to protect locally-generated IP, and to ensure that the initial stages of the innovation chain are not transported offshore for commercialisation and sales. The Australian Government needs to ensure that Australian taxpayer dollars are not used as a means to develop employment opportunities for workers in foreign countries. This may require a greater emphasis on, and support of, the local commercialisation process.

LINKING DEFENCE INDUSTRY POLICY TO THE REAL WORLD

Defence Industry policy does not exist separate to the real world, and demonstrable links need to be considered to give the Framework relevance. This is done through the consideration of a number of Fundamental Inputs to Industrial Capability (FIIC). The status and development of these FIIC may be addressed in a purely Defence context, but may have wider implications for the broader economy, and for national economic activity.

The identified FIIC are:

¹⁷ Mobbs, W. *Why is Innovation Important?* December 2010. www.innovationforgrowth.co.uk

- **In-country Facilities.** Specific facilities will be required in-country in order to enable the conduct of some industry activities in support of Defence. The availability of dry-docking facilities for ship repair and maintenance is one example.
- **Skilled and Available Workforce.** An available workforce with the appropriate skills will be necessary to provide competent industrial activities for Defence. Skilling is a long term investment with links into all levels of educational facilities, and with particular relevance for national capacity and competency in the Science Technology Engineering and Mathematics (STEM) subjects. The ongoing availability of design and engineering personnel will be critically linked to higher risk industrial capabilities. The Skills Australia report *Building Australia's Defence Supply Capabilities* has also found that there are benefits to the national economy from the capabilities used to support the ADF through technology diffusion to other sectors, particularly the manufacturing sector¹⁸.
- **Intellectual Property & Design Knowledge.** Access to design and IP will be required for all systems and platforms, whether designed and constructed within Australia or whether procured from offshore. The absence of this information will severely impact on Australia's ability to cost-effectively undertake through-life support, and will fundamentally affect the ability to upgrade systems with changes in the likely or perceive threat.
- **Sustainable Workflow.** A sustainable workflow is required to (1) build levels of experience within the workforce, and (2) enable productivity benefits to be achieved. What constitutes sustainability in workflow will alter depending on the industry capability, and may be linked with defence – industry engagement mechanisms such as strategic partnering.
- **Access to Capital.** Business requires ongoing access to capital, and particularly for innovation. Government provision of grants, soft loans, R&D tax concessions and other forms of finance may be appropriate for activities to mitigate higher strategic risks or to establish new capabilities.
- **National Infrastructure.** Business cannot exist without input from the national infrastructure such as fuel, light, power, water, transportation links and financial systems. Of particular importance for innovation success is the nature of the national communications infrastructure. The importance of the national infrastructure, and the links to other areas of Government policy, need to be recognised and addressed within the Defence context.

BENEFITS OF THE PROPOSED DEFENCE INDUSTRY FRAMEWORK

The benefits of this proposed defence industry policy are:

¹⁸ Skills Australia. *Building Australia's Defence Supply Capabilities*; Commonwealth of Australia, 2012.

- A clear, logical and defensible approach to the development of the defence industry in Australia:
- An industry with the capabilities most aligned with Government strategic policy and most suited to the mitigation of strategic risk:
- An industry with a clearly defined future based around mitigation of strategic risk, maximisation of economic activity and innovation; and
- An industry policy linked to the real world through clearly defined and addressed Fundamental Inputs to Industry Capability.