

# A Defence Policy for Australian Industry: Are We There Yet?

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In March 2007, the Minister for Defence released his Defence and Industry Policy Statement, the tenth iteration of Australian defence industry policy in the last twenty years. This article draws on comparable UK and US initiatives in analysing the Australian Government's new defence industry policy in terms of the ends it seeks to achieve, the ways it proposes to achieve those ends, and the resources it allocates to the task.

An effective defence industry policy has long eluded Australian defence policy makers. Including the now defunct defence industry sector plans developed 2002-2004, the Australian Government's latest *Defence and Industry Policy Statement 2007* is the tenth attempt to promulgate an effective policy in the last two decades.

Does this iteration of defence industry policy represent progress? To answer this question, this article establishes an analytical framework which it then applies to the 2007 Statement, drawing on previous Australian defence industry policy efforts and comparable initiatives by other governments.

## Framing the Analysis

Two decades ago Hogwood and Gunn identified at least nine different meanings of the word 'policy'<sup>1</sup> in common use. Practitioners have largely discarded efforts to define '*policy*' and now focus on *policy making*, defined as

the process by which governments translate their political vision into programmes and actions to deliver 'outcomes' – desired changes in the real world.<sup>2</sup>

The framework for this article begins with the link between government policy making and desired changes in the real world.

Bridgman and Davis have analysed of Australian government policy making in terms of a policy cycle.<sup>3</sup> As the following summary shows, the Minister for

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<sup>1</sup> Brian W. Hogwood and Lewis A. Gunn, *Policy Analysis for the Real World*, New York, Oxford University Press, 1986, pp. 13-17.

<sup>2</sup> Tony Blair, *The Modernising Government White Paper*, March 1999, <<http://www.archives.official-documents.co.uk/documents/cm43/4310/4310-02.htm>>, p. 1.

Defence's 2007 Defence Industry Policy Initiative conforms closely to this model of the policy process.

In May 2006, four months after his appointment as Minister for Defence, Dr Brendan Nelson announced his review of defence industry policy. To undertake the review, he assembled a team of external consultants and Defence officials who began by preparing a comprehensive discussion paper, which the Minister released in June 2006, and followed up with consultations Australia-wide. In December 2006 the Minister released a draft policy statement for comment and promulgated the final statement in March 2007.

But whether this exemplary policy process will deliver more desired real world outcomes than previous iterations of defence industry policy remains an open question. To probe this question more deeply, this article defines 'policy' as a purposeful synthesis of ends, ways and means, where:

- *Ends* comprise the choices and decisions made by legitimate decision makers on behalf of Australian society;
- *Ways* constitute the institutions and processes that Australian society has agreed the decision makers it has selected to acting on its behalf can use in implementing legitimate policy ends;
- *Means* are the resources allocated by decision makers to realize socially endorsed ends by legitimate means, recognising that, because means are limited, Australian society must be prepared to reallocate resources from one social activity to another in order to realise agreed ends in the way proposed.

In this sense, a defence industry policy that realises desired changes in the real world must go beyond a statement of policy ends, no matter what intrinsic merit the latter may have. To make a difference in the real world, defence industry policy must also include a description of how the government proposes to achieve those ends, and some indication of what resources—means—will be allocated to implement the policy.

In what follows, the 2007 *Defence and Industry Policy Statement* is analysed in terms of the ends it sets out to achieve, what ways are envisaged to achieve those ends, and the means allocated to doing so.

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<sup>3</sup> Peter Bridgman and Glyn Davis, *The Australian Policy Handbook*, 3<sup>rd</sup> edition, Crows Nest, Allen & Unwin, 2004.

## **Analysing the 2007 Industry Policy Statement: *Ends***

According to the 2007 Statement,

The Government's primary goal for defence industry policy is to ensure the cost effective delivery of equipment and support of the ADF [Australian Defence Force] in line with Australia's strategic circumstances.<sup>4</sup>

The Government also acknowledged a *subsidiary goal*:

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.<sup>5</sup>

This statement of both primary defence and subordinate economic ends of Australian defence industry policy echoes the current United Kingdom (UK) Defence Industrial Policy. The latter policy, promulgated in 2002, "is driven by the need to provide the Armed Forces with the equipment which they require, on time and at best value for money for the taxpayer."<sup>6</sup> Within this policy framework, the UK Government 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.<sup>7</sup>

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* (see below).

### **AUSTRALIAN DEFENCE INDUSTRY POLICY: CAPABILITY *ENDS***

There are strong continuities in Australian thinking about what local industry can and cannot do. According to the 2007 Statement, for example,

The ADF needs ready access to repair and maintenance services that, for practical reasons, can only be delivered by in-country providers. The ADF also needs in-country industry to adapt, modify and, where necessary,

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<sup>4</sup> Brendan Nelson, *Defence and Industry Policy Statement 2007*, Canberra, Department of Defence, p. 3, emphasis in original.

<sup>5</sup> *Ibid.*, p. 17.

<sup>6</sup> Lord Bach (Minister for State for Defence Procurement) and Alan Johnson MP (Minister of State for Employment Relations, Industry and the Regions), *Defence Industrial Policy*, London, Ministry of Defence, 2002, p. 4.

<sup>7</sup> *Ibid.*

manufacture equipment that is suited to Australia's unique operating environment and military doctrine.<sup>8</sup>

This language is almost identical to the statement of Australian defence industrial policy in the seminal 1976 Australian Defence White Paper.<sup>9</sup> In the last ten years, ADF preoccupation with networked enabled operations has prompted some refinement and amplification of earlier defence industry policy generalities, yielding the following priorities for Australian defence industry capabilities:

- Combat and systems software and support;
- Data management and signal processing including for information gathering and surveillance;
- Command, control and communication systems;
- Systems integration;
- Repair, maintenance and upgrades of major weapons and surveillance platforms; and
- Provision of services to support peacetime and operational requirements of the ADF.

The 2007 Statement is about refining and amplifying this statement of priorities. Before investigating how it proposes to do so, it is instructive to consider how the UK has approached its defence industry policy task.

### **UK DEFENCE INDUSTRIAL STRATEGY: SOVEREIGNTY *ENDS***

To give effect to the 2002 UK Defence Industrial Policy, the UK Government promulgated a Defence Industrial Strategy in December 2005. The 2005 Defence Industrial Strategy began by observing that:

As we look to non-British sources of supply, whether at the prime or subsystem level, we need to continue to recognise the extent to which this may constrain the choices we can make about how we use our Armed Forces—in other words, how we maintain our sovereignty and national security.<sup>10</sup>

With this in mind, the 2005 UK Strategy aimed

to tell industry very clearly where, to maintain our national security and keep the sovereign ability to use our Armed Forces in the way we choose, we

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<sup>8</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 1.

<sup>9</sup> See D.J Killen, *Australian Defence*, Canberra, Australian Government Publishing Service, 1976, p. 51, para. 28-30.

<sup>10</sup> Secretary of State for Defence, *Defence Industrial Strategy*, December 2005, London, Ministry of Defence, p. 6.

need particular industrial capabilities in the UK (which does not preclude them being owned or established by foreign-owned companies).<sup>11</sup>

The 2005 UK Strategy then used this notion of 'appropriate sovereignty'<sup>12</sup> to identify those industry capabilities needed in the UK to ensure the UK Government's ability to make sovereign decisions about how it uses UK submarines and surface ships; armoured fighting vehicles; fixed wing aircraft (including unmanned aerial vehicles); helicopters; general munitions; complex weapons; command, control and communications; chemical biological, radiological and nuclear force protection; and counter terrorism capabilities.<sup>13</sup>

Such clarification of the ends of UK defence industrial policy enabled the architects of the UK Defence Industrial Strategy to engage with UK industry and other stakeholders in specifying the ways to achieve those ends in sufficient detail to inform Ministry of Defence procurement, UK defence industry investment and performance measurement by both Executive and Parliamentary arms of the UK government. Such clarification of ends also leaves ample room for UK policy architects, implementers and other stakeholders to learn from experience with defence policy ways and to adapt those ways as appropriate.

This article argues that the Australian 2007 *Defence and Industry Policy Statement* lacks the UK policy's conceptual resilience because it has focused on a refinement of defence industry priorities at the expense of clarifying and amplifying defence industry policy ends.

### **Analysing the 2007 Industry Policy Statement: Ways**

To implement the 2007 *Defence and Industry Policy Statement*, the Australian Government envisages using a strategic approach to equipping and sustaining the ADF; maintaining priority local industry capabilities; securing value for money through best practice procurement; creating opportunities for Australian firms; encouraging small and medium enterprises; supporting the development of skills in defence industry; facilitating defence exports; driving innovation in defence technology and enabling Defence and industry to work together better.<sup>14</sup> Of these strategies for realising the ends of Australia's 2007 Defence industry policy the following are particularly relevant for present purposes:

- a strategic approach to equipping and sustaining the ADF;
- maintaining priority local industry capabilities;

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<sup>11</sup> Ibid., p. 7.

<sup>12</sup> Ibid., p. 17.

<sup>13</sup> Ibid.

<sup>14</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 3.

- securing value for money through best practice procurement;
- driving innovation in defence technology.

### **2007 INDUSTRY POLICY WAYS:**

#### **A STRATEGIC APPROACH TO EQUIPPING AND SUSTAINING THE ADF**

According to the *2007 Defence and Industry Policy Statement*, deciding when it is prudent to rely on foreign sources and when it is necessary to maintain in-country capabilities essential for our national security is a strategic choice. Such decisions are therefore an essential component of strategic planning and, as such, must take account of the full range of credible contingencies that the ADF might encounter:

It is only by considering such possibilities that the risk of being denied access to overseas support can be properly assessed and the level of resources reasonably committed to preventing or mitigating that risk determined.<sup>15</sup>

This is a potentially important shift in the conceptual underpinnings of Australian defence industry policy. Australia, like other countries, can afford to divert only limited resources from other defence priorities and allocate them to managing the risk that the nature, scale and timing of overseas support of the ADF might not be forthcoming in accordance with Australian interests. An effective defence industry policy would give local industry an incentive to invest in sufficient capacity to reduce that risk to a tolerable level. Australia's *risk appetite* is a measure of the amount of such risk Australia is prepared to tolerate and of the amount of resources Defence and industry are justified in expending to reduce that risk to a level tolerable to the Australian community and its elected representatives.<sup>16</sup>

But the *2007 Defence and Industry Policy Statement* stops short of discussing Australia's risk appetite, opting instead for announcement of a new Defence Industry Self-reliance Plan, to be prepared by:

- identifying priority industry capabilities, that is those industry capabilities that confer an essential national security and strategic advantage by being resident in-country;
- developing, in consultation with industry, a strategy to foster priority industry capabilities now and into the future;

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<sup>15</sup> Ibid, p. 10.

<sup>16</sup> HM Treasury, *The Orange Book: Management of Risk – Principles and Concepts*, October 2004, p. 9, <[www.hm-treasury.gov.uk](http://www.hm-treasury.gov.uk)> [Accessed 24 April 2007].

- promulgating the priority local industry capabilities so identified in the public version of the Defence Capability Plan (the ten year rolling plan for acquisition of major capital equipment).<sup>17</sup>

To affect the real world, the new Defence Industry Self-Reliance Plan (DISRP) proposes to refine and amplify the existing defence industry priorities. To this end, according to the 2007 Statement, the DISRP will be embedded in the defence strategic planning process (and, therefore, accorded a commensurately high security classification). Two defence strategic planning outputs will be used to drive the requisite refinement/amplification of defence industry priorities. These outputs are:

- For the *future* force, the comprehensive guidance Defence generates for capability managers regarding priorities for and balance between particular goals for future development of military capabilities having regard to available resources (in Australian parlance, the Defence Capability Strategy, one output of which is the cyclical Defence Capability Plan for procurement of major capital equipment);
- For the *present* force, guidance on readiness of the Australian defence force in-being for operations and on its ability to sustain those operations for a specified period as promulgated in the Chief of Defence Force Preparedness Directive.

This methodology for identifying defence industry priorities takes advantage of the very significant maturing of Australian processes for defence capability development and preparedness management over the last decade or so. It is a potentially substantial—and highly prospective—departure from previous efforts to develop defence industry policy at the unclassified level.

The methodology entails deriving defence industry priorities for supply and support of future Australian defence force capability from the strategic priorities that guide the Australian Defence Organisation in generating the military outcomes sought by Government. Such guidance involves analysis of the future strategic environment and identification of contingencies Australia might face over the next five, ten, fifteen and twenty plus years. Contingencies judged as high priority are developed further into planning scenarios, which are used to test operational concepts and military capabilities.<sup>18</sup>

The identification of defence industry priorities for supply and support of the force-in-being turns on the Chief of Defence Force Preparedness Directive

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<sup>17</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 10.

<sup>18</sup> Michael Pezullo and D.J. Hurley *Strategy Planning Framework Handbook 2006*, Canberra, Department of Defence, May 2006, p. 13.

(CPD). The latter has now matured sufficiently to set goals for preparedness of the ADF, to explain how those goals will be met from within available resources and to include measures of effectiveness. Defence executives responsible for military outputs are required to assess and report on the ability of the Australian Defence Force to carry out the contingencies specified in the defence planning guidance and the levels of performance specified in the CPD. In particular, the Chiefs of the Navy, Army and Air Force report on their performance in meeting their preparedness targets as articulated in their individual performance agreements with the Secretary and Chief of the Defence Force.<sup>19</sup>

Australia's use of highly classified defence planning guidance and preparedness directives to generate a commensurately classified DISRP puts within reach the critical link to military capability that has long eluded Australian defence industry policy. But for the DISRP to affect the real world, it must influence industry investment decisions. The DISRP contains some potential impediments to such influence.

The classification of the DISRP precludes its release to any but a very small circle of individuals in established defence companies with the requisite security clearances. Inherent in the DISRP, therefore, is a risk that it will lead to entrenching established suppliers and precluding new entrants to the industry. To overcome this difficulty the DISRP is to be subsumed into the unclassified version of the Defence Capability Plan. The 2007 *Defence and Industry Policy Statement* is silent as to what form this will take or how it will be done, prompting the following observations:

The unclassified Defence Capability Plan is intended to inform industry investment decisions by linking proposed defence capital equipment solutions to capability gaps. It provides one of the key links between commercial decision making and the defence strategic planning process. But the unclassified defence capability plan is about projects, it already indicates the scope for local industry involvement in those projects and it already includes estimates of the impact of defence project spending on the sectors comprising defence industry (that is electronics, aerospace, weapons and munitions, maritime and vehicles and land systems).

Refining the Defence Capability Plan's current treatment of defence industry will not yield a strategic approach to defence industry capability development, no matter how much detail is provided about industry involvement in projects, nor how accurately the impact of project spending on industry sectors is estimated. If Australian defence industry policy is to gain the benefit of linkage to wider capability planning, those responsible for developing the DISRP need to avoid being seduced by the specificity of projects.

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<sup>19</sup> Ibid., p. 23.

What counts is specifying industry's contribution to military capability outputs. The Australian defence portfolio budget statements identify 31 defence outputs, of which some 25 involve industry supply and support.<sup>20</sup>

The UK Ministry of Defence identified those particular industrial capabilities required in the UK so as to preserve the UK Government's *sovereign ability to use the UK armed forces in the way it chooses*. As already indicated, the UK's 2005 Defence Industrial Strategy uses the deceptively simple notion of 'appropriate sovereignty' to identify, in close consultation with UK defence industry, some twelve industrial capabilities required in the UK.<sup>21</sup> In February 2003, the United States Department of Defense published its roadmap for transforming the US defence industrial base. The US DoD's roadmap and subsequent documentation analyses the US industrial base in terms of five operational effects-based sectors (combat support, power projection, precision engagement, homeland and base projection and integrated battlespace).<sup>22</sup>

At issue here is more than policy style: Both the UK and US policy models enable industry to understand the Government's policy intent. This not only informs industry investment planning but also enables industry to contribute meaningfully to the identification of ways to achieve that intent, and to marshalling the means required to implement them,

Underlying the focus of Australia's 2007 *Defence and Industry Policy Statement* on defence industry priorities seems to be a conventional preoccupation with capability inputs like programs, platforms and weapons systems. When compared to the explicit focus on industry support for appropriate sovereignty in the exercise of armed force in the UK case, and on industry support for achievement of operational effects in the US case, the Australian focus on industry priorities seems conceptually impoverished.

### **2007 INDUSTRY POLICY WAYS: MAINTAINING PRIORITY LOCAL INDUSTRY CAPABILITIES**

Defence plans to monitor the health and sustainability of the priority defence industry capabilities so identified and, where necessary, to take action to maintain them. Such action is likely to hinge on use of the defence procurement by, for example, rescheduling demand, bundling projects and using restricted or sole source tendering.<sup>23</sup>

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<sup>20</sup>See Australian Government, *Defence Portfolio Budget Statement 2007-08*, Canberra, Commonwealth of Australia, 2007, Table 5a, p. 122.

<sup>21</sup> UK Secretary of State for Defence, *Defence Industrial Strategy*, pp. 59-127.

<sup>22</sup> Office of the Under Secretary of Defense (Industrial Policy), *Transforming the Defense Industrial Base: A Roadmap*, Washington DC, Department of Defense, February 2003, p. 2.

<sup>23</sup> Nelson, *Defence and Industry Policy Statement 2007*, pp. 12-13.

These are familiar prescriptions for remedying defence industry ills: they were mentioned in, for example, the Defence Efficiency Review (DER)<sup>24</sup> and figured prominently in the defence industry strategic sector plans.<sup>25</sup> But Defence seems likely to have made little use of these remedies to date because it judged that the cost they entail outweighed the likely benefits.

Rescheduling demand and bundling projects can adversely affect the ten year program of new major capital equipment promulgated in the rolling Defence Capability Plan and the Defence Management and Finance Plan which underpins the Australian Defence Organisation's budgeting system. A rational Defence organisation would only reschedule demand and bundle projects if the resulting benefit outweighed the cost of changing the program for rectification of capability gaps (by, say, deferring acquisition of capital equipment) or of adjusting preparedness. The 2007 *Defence and Industry Policy Statement* sheds no light on how such judgements will be made.

Nor is restricted or sole source tendering cost free: Such arrangements demand high levels of contracting and project management skills if the resulting monopolies are to continue generating value for money. The concerted effort by the Defence Materiel Organisation (DMO) to professionalise its workforce suggests that Defence is not oversupplied with such skills. That said, sole sourcing can account for as much as 50% of Australian Defence contract outlays<sup>26</sup> and Defence and industry are learning to manage the requisite partnering through such arrangements as the ANZAC Ship Alliance between the Commonwealth and Tenix (shipbuilder) and SAAB (combat system supplier).

The UK faces comparable challenges in this area – BAE Systems Land Systems, for example, supplies 95% of the UK's current inventory of armoured fighting vehicles and BAE Systems Air is the nation's only supplier of fast jets. The UK Government's search for business models that enable a monopsonist customer to secure, and be seen to secure, value for money therefore features prominently in the way ahead for the UK Defence Industrial Strategy.

The Australian defence market is increasingly characterised by competition *for* a limited market rather than by competition *in* that market. This trend is increasingly constraining Defence's ability to test for value-for-money on a project-by-project basis. The trend will also affect the terms in which

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<sup>24</sup> Malcom K. McIntosh, et al. *Defence Efficiency Review*, Canberra, Department of Defence, 1997.

<sup>25</sup> See, for example, Department of Defence, *Defence Electronic Systems Sector Strategic Plan*, Canberra, Commonwealth of Australia, 2004, pp. 85-95.

<sup>26</sup> Nelson, *Defence Industry Policy Review: 2006 Discussion Paper*, p. 23, para. 6.8.

Defence reports to Government on the health and sustainability of priority industry capabilities.<sup>27</sup>

Such reporting is a substantial innovation that stands to inform government about defence industry's role in broadening the military options available to government in responding to a security challenge. But it is unlikely to be sufficient to meet evolving arrangements for making the Defence Portfolio more accountable to the Australian Parliament for its performance.

As Wylie has pointed out<sup>28</sup> the ability of the Service Chiefs and other Defence executives to meet targets for the preparedness of the current force and for development of the future force depends increasingly on industry performance. Defence reporting pursuant to its current external accountability arrangements sheds no light on this critical performance parameter. Hence the Australian Parliament seems likely to press the Defence portfolio to include information about industry performance, health and sustainability in its Annual Report.

### **2007 INDUSTRY POLICY WAYS: BEST PRACTICE PROCUREMENT**

Since at least the 1980s the various iterations of Australian defence industry policy have all reaffirmed the importance of Defence procurement arrangements in shaping defence industry capabilities. Two aspects of the 2007 Statement treatment of best practice procurement warrant analysis in the present context:

- Use of Defence projects to pursue economic outcomes; and
- Managing the risk inherent in developing and acquiring the equipment required to give the ADF a decisive capability edge.

Non-defence political considerations probably played a part in, for example, the decision to build COLLINS Class submarines in South Australia rather than in, say, Western Australia. But the 2007 *Defence and Industry Policy Statement* is the first such statement to acknowledge formally that the potential economic impact of projects is sometimes an important consideration in determining where projects will be undertaken and who will undertake them.

Such candour is refreshing. But the 2007 Statement might have acknowledged the potential for tension between defence and non-defence objectives and explained how such tension would be managed if it eventuates.

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<sup>27</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 13

<sup>28</sup> Robert Wylie, 'Defence Industry Policy and Defence Accountability,' *Security Challenges*, vol. 2, no. 2 (July 2006), pp. 15-24.

One source of tension is inherent in the fact that Parliament appropriates funds to, on one hand, the Defence portfolio for defence of the nation and its interests and to, on the other hand, the entirely separate Industry, Tourism and Resources portfolio for industry development. Use of defence funds for non-industry development purposes risks blurring these separate responsibilities and diluting Defence portfolio accountability to Parliament for the proper stewardship of the resources appropriated to it for the defence function.

A second source of tension is treatment of defence industry policy as “a component of the Government’s broader approach to Australian industry that seeks to create sustainable prosperity.”<sup>29</sup> For this reason, presumably, the Department of Industry Tourism and Resources is already a member of the Joint Strike Fighter Industry Advisory Council, established to advise the Australian Government and industry on strategies to ensure maximum Australian industrial and technological participation in the Joint Strike Fighter Program and global supply chains of Lockheed Martin, its partners and sub-contractors. But the 2007 *Defence and Industry Policy Statement* gives no indication of what constitutes the Government’s broader approach to Australian industry, nor how defence industry policy links to it, nor how Government will manage any tensions between broader industry policy and Defence force structure development and preparedness priorities.

Thirdly, Defence has enough trouble advising government as to the appropriate balance of divergent defence interests in such major capital equipment purchases as, for example, amphibious support ships. Certainly, the Defence Materiel Organisation is poorly equipped to advise Government on the potential economic impact of major defence projects. Hence other non-defence portfolios will perforce be called upon for advice, exacerbating the inherent complexities of the defence procurement task.

The 2007 *Defence and Industry Policy Statement* is on safer conceptual ground in committing Defence to adopt a more commercial approach to risk management, noting that

The efficient management of complex programs is impeded by a culture that shows little tolerance for risk. For this reason, a better public understanding of defence projects and the risks they entail is needed. In the future Defence will clearly set out the level of risk in projects in routine reporting and explain why this risk is necessary.<sup>30</sup>

This proposition warrants closer analysis.

Australia’s political culture is fundamentally adversarial and, often, predatory. In these circumstances, if complex systems developed and deployed in

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<sup>29</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 1.

<sup>30</sup> *Ibid.*

Australian public sector – for example, the COLLINS Class submarines or the Australian Customs system for electronic processing of import documentation – do not conform to initial expectations then our press and politicians immediately condemn them as failures and pillory the scientists, engineers and managers involved. This political culture is inimical to the kind of learning and experimentation required to realise the potentially high returns that justify embarking on complex, high risk development projects in either the public or private sectors. In these circumstances, and as the 2007 Statement prescribes, routine Defence project reporting should certainly explain the level of risk involved and why those risks are necessary. But to align with commercial practice, Defence must also explain what value Australia stands to gain if the experiment succeeds. The onus is on Defence to foster the Australian public sector's appetite for risk and, hence, its capacity and willingness to innovate.

A more commercial approach to risk management in Defence projects must also avoid, on one hand, degenerating into mechanical process and, on the other hand, aspiring to the kind of arcane precision seen in financial markets. The UK Government has confronted this issue in its recent efforts to improve the capability of UK Government agencies to handle risk and uncertainty:

The handling of risk is at heart about judgement. Judgement in the context of government decision making can, and should, be supported by formal analytical tools which themselves need enhancing. But these cannot substitute for the act of judgement itself.<sup>31</sup>

Australia's record in the management of complex defence projects suggests that organisational cultures in Defence and the Australian public sector generally have far to go before this kind of judgement is accepted as an integral part of the defence capability development process.

### **2007 INDUSTRY POLICY WAYS:**

#### **DRIVING INNOVATION IN DEFENCE TECHNOLOGY**

To foster innovation in defence technology the 2007 *Defence and Industry Policy Statement* proposes to extend the Capability and Technology Demonstrator program and to encourage joint defence research ventures by the Defence Science and Technology Organisation, industry, universities and other public research bodies.<sup>32</sup> This evolution of past Defence practice breaks no new conceptual ground. As a policy response to the challenge of maintaining a clear margin of ADF superiority over any credible adversary it is therefore likely to encounter diminishing marginal returns.

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<sup>31</sup> Strategy Unit, UK Cabinet Office, *Risk: Improving government's ability to handle risk and uncertainty*, November 2002, p. 6, <[www.strategy.gov.uk](http://www.strategy.gov.uk)>.

<sup>32</sup> Nelson, *Defence and Industry Policy Statement 2007*, pp. 28-29.

With this in mind it is surprising that the 2007 Statement made little or no reference to:

- At the strategic planning end of the spectrum, defence experimentation aimed at fostering a shared understanding of the requirements, merits and likely outcomes of competing solutions to operational problems with the objective of improving concept and capability development; and
- At the application end of the spectrum, the Rapid Prototyping, Development and Evaluation (RPDE) program aimed at truncating the traditional process for procurement of capabilities for network enabled operations through defence-industry collaboration.

The introduction of formalised Defence experimentation resulted from the Government's acceptance of the recommendation by the 1997 DER that Defence improve the capability development process through more advanced modelling and simulation. The DER envisaged this experimentation ranging from basic technical models of, say, radar or sonar signatures over the full range of possible operating conditions and weapons effects feeding into the performance of complete weapons systems and, in turn, into complete battle field simulations.<sup>33</sup>

Australian defence experimentation has now evolved to the point of using war-gaming and simulation, lessons learned from operations, studies from operations research and history and military judgement to help link strategic guidance to capability development. The Australian Illustrative Planning Scenarios already mentioned are one of the enabling tools used in Defence experimentation.<sup>34</sup>

Defence experimentation tools and techniques provide a structured and increasingly mature vehicle for assessing the consequences of a foreign supplier limiting or withholding support in a contingency for political reasons. This risk—mentioned in passing in the 2007 *Defence and Industry Policy Statement*<sup>35</sup>—warrants closer examination.

Since at least the 1970s Australian strategic guidance has regularly reaffirmed that "The kind of ADF that we need is not achievable without the technology access provided by the US alliance."<sup>36</sup> But, as Wylie has pointed out, the United States uses access to classified US military information and

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<sup>33</sup> McIntosh, et al., *op. cit.*, p. 23 and p. E-4.

<sup>34</sup> Pezullo and Hurley, *op. cit.*, pp. 16-18.

<sup>35</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 9.

<sup>36</sup> John Moore, *Defence 2000: Our Future Defence Force*, Canberra, Commonwealth of Australia, 2000, p. 35, para. 5.9.

technology to advance US interests.<sup>37</sup> In addition, the US Congress has declined proposals by recent US Administrations to amend the US International Traffic in Arms Regulations so as to accord the UK and Australia the level of access to US technology enjoyed by the Canadians as a part of the North American Industrial Base.

In order to refine Australian defence industry priorities, our defence planners would do well to follow the UK lead and address the risk that an Australian Government's ability to make sovereign decisions about contingent use of Australian armed forces could be compromised if US and Australian interests diverged in that contingency.

At issue here is not US willingness to supply spares or even sophisticated consumables like precision weapons. Rather it is US willingness to release the software required, for example, to enable Australia to maintain and adapt those weapons for operations in our region, or to adapt for air combat operations in our neighbourhood the radar warning receivers embedded in US-origin combat aircraft. It is this kind of indigenous capability that will increasingly define Australian Governments' ability to make sovereign decisions about how they use military platforms and systems, whether sourced locally or imported.<sup>38</sup>

At the other end of the spectrum the RPDE is a particularly interesting and timely organisational experiment aimed at enhancing ADF capacity to conduct network centric operations. To this end the organisation is designed to enable Defence and participating companies and universities to work collaboratively on Defence-directed problems. RPDE does this by forming small teams of experts drawn from participating companies/universities and funded by the RPDE organisation from Defence allocations. The teams are tasked with generating sufficient information to enable Defence to make expedited decisions about enhancing ADF network centric warfare capacity.<sup>39</sup>

RPDE begins by scoping and bounding problems identified by ADF stakeholders. It then develops options for solving the problems, evaluates a selection of the solution options using a rigorous analytical and/or experimentation approach leading to evidence-based recommendations for selecting one of those options for solving the problem. The final RPDE output is a plan showing how the recommended solution would change ADF war-fighting. If Defence adopts the recommended solution, RPDE supports ADF implementation.

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<sup>37</sup> Robert Wylie, *A Profile of the Australian Defence Industry*, Canberra, ACIL Tasman, 2004, pp. 76-80.

<sup>38</sup> Robert Wylie, Robert, Stefan Markowski and Peter Hall, 'Big Science, Small Country and the Challenge of Defence System Development: An Australian Case Study,' *Defence and Peace Economics*, vol. 17, no. 3 (June 2006), p. 266.

<sup>39</sup> See <<http://www.rpde.org.au/defence>> for more details.

The RPDE experiment is represents a potentially radical departure from the conventional defence business model for technological innovation. Participants work in a paid collaborative environment based on Defence funding of some \$60 million over 2007-2010. RPDE obtains the requisite skilled people by seconding them from over 80 companies and academic bodies covering the full spectrum of small/medium enterprises, prime contractors, and public service providers in equal proportions. Hence, for example, the RPDE General Manager is seconded from Raytheon Australia and her predecessor was seconded from BAE Systems Australia.

To help pre-empt diminishing returns from established arrangements like Concept Technology Demonstrators while maximising the returns from new initiatives like RPDE Defence might exploit the burgeoning literature on the economics of technological innovation in general and on the development of complex systems in particular. Freeman, for example, has developed a model of technological innovation through learning by producing, learning by doing, and learning by the interaction of producers and users that could inform management of the Defence innovation process.<sup>40</sup> Similarly, Wylie et al have proposed a defence innovation system<sup>41</sup> as a sub-set of the model of national innovation systems developed by, among others, Metcalfe<sup>42</sup> and Nelson.<sup>43</sup>

### **Analysing the 2007 Industry Policy Statement: *Means***

The 2007 *Defence and Industry Policy Statement* addressed the means available for implementing defence industry policy under the following headings:

- Creating opportunities for Australian firms;
- Encouraging small and medium enterprises; and
- Supporting the development of skills in defence industry.

Of these, initiatives for creating opportunities for Australian firms are the most relevant for present purposes.

The 2007 *Defence and Industry Policy Statement* reaffirmed the conventional wisdom that “Defence’s procurement program is the only

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<sup>40</sup> Christopher Freeman and B-A Lundvall (eds.), *Small Countries facing the technological revolution*, London, Pinter Publishers, 1988, cited in Robert Wylie, ‘Supplying and Supporting Australia’s military capability,’ in *Growth 57: The Business of Defence*, Melbourne, Committee for Economic Development of Australia, 2006, pp. 52-53.

<sup>41</sup> Wylie, Markoswki and Hall, *op. cit.*, p. 262.

<sup>42</sup> Stan Metcalfe, ‘The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives’, in P. Stoneman (ed.), *Handbook of the Economics of Innovation and Technological Change*, Oxford, Blackwell Publishers Ltd, 1995, pp. 409-512.

<sup>43</sup> R. Nelson (ed.), *National Innovation Systems*, Oxford, Oxford University Press, 1993.

concrete tool available to shape Australia's defence industrial base."<sup>44</sup> As a means of implementing defence industry policy, Defence procurement is not only concrete but also substantial: in 2006-07, for example, the Defence Materiel Organisation is scheduled to spend \$A5 billion on the procurement of capital equipment and \$A3.7 billion on the sustainment of existing capability.<sup>45</sup> Looking ahead, the Government is presently scheduled to spend a total of \$A51.3 billion on about 100 unapproved capital equipment projects over the period 2006-2016.<sup>46</sup>

At issue is the means by which this current and future expenditure is harnessed to develop defence industry capability.

In order to create opportunities for Australian firms, the 2007 *Defence and Industry Policy Statement* requires bidders for large defence contracts to show how they have explored the potential for cost-effective Australian industry participation and to propose an Australian Industry Capability Plan. The latter is to identify any additional costs generated by the Plan and a mechanism for independent audit of compliance with that plan.

The limited information available suggests that the Australian Industry Capability Plan is a variation of the Australian Industry Involvement (All) Program created in 1986 to replace the Australian Industry Participation Program. The All program was described as the

key tool for maximising the involvement of Australian industry in Defence acquisition projects and for ensuring that in-country capacity exists to provide through-life support for ADF capabilities.<sup>47</sup>

In 2003 the Auditor General reviewed the All Program and concluded that

In the absence of quantitative and/or qualitative performance measures for the All Program as a whole, it was not practicable for Defence to demonstrate whether, over the many years of its existence, the All program has been making real progress, or is losing ground, in seeking to meet its objectives.<sup>48</sup>

The 2007 Statement does not explain how the Australian Industry Capability Plan will be an improvement over the All program in terms of meeting defence objectives. Nor does the Statement explain how, if at all, Defence

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<sup>44</sup> Nelson, *Defence and Industry Policy Statement 2007*, p. 12.

<sup>45</sup> Australian Government, *Defence Portfolio Budget Statement 2006-07*, Canberra, Commonwealth of Australia, 2006, p. 250.

<sup>46</sup> Mark Thomson, *Your Defence Dollar: The 2006-07 Defence Budget*, Canberra, Australian Strategic Policy Institute, 2006, p. 32, Table 8.

<sup>47</sup> Wayne Ryan *Australian Industry Involvement Manual*, Canberra, Department of Defence, January 2001, p. 1-1, para. 6.

<sup>48</sup> The Auditor General, *Australian Industry Involvement Program*, Audit Report No 46 2002-03, Canberra, Commonwealth of Australia, 2003 p. 14, para. 17.

will take into account competing bidders' Australian Industry Capability Plans in ranking tenders for supply and support of Defence capital equipment.

This analysis suggests that Defence has some distance to go in establishing practical links between refined priority defence industry capabilities and defence procurement of capital equipment. Equally important, there is no indication of how Defence proposes to explain to Ministers or to Parliament the performance it expects of industry involved in supply and support of capital equipment and how it will measure that performance.

## Conclusion

Analysed in terms of ends, ways and means, the 2007 *Defence and Industry Policy Statement* represents substantial progress in the quest for an effective defence policy for Australian industry. But it is clearly not the last word.

The new policy acknowledges wider non-defence objectives as a subsidiary end of defence industry policy. But it gives no indication of the ways by which these non-defence objectives will be managed and does not explain where the means required to implement them will come from. Vigorous competition for defence business among the Australian states has already politicised defence procurement. Future iterations of defence industry policy are therefore likely to reflect efforts by Defence officials and the Minister for Defence to ensure non-defence objectives do not displace defence industry priorities.

The architects of the new defence industry policy must be applauded for charting a link to defence strategic and operational planning. But the 2007 Statement fails to give substance to the notion of 'self reliance' in the way that the UK Defence Industrial Strategy gives substance to the notion of 'appropriate sovereignty'. We can therefore expect to see further development of this aspect of the Australian policy, hopefully when the refined industry priorities are promulgated with the public version of the new Defence Capability Plan in 2007.

Again, the 2007 *Defence and Industry Policy Statement* breaks new ground in making risk management a more explicit part of industry policy rather than embedding it in projects. But the architects of the policy seem to have spent too much time thinking about how Defence is to explain the benefit to be gained by incurring that risk. If the new policy is to be effective in Australia's adversarial political culture, the Defence portfolio must be able to articulate potential benefit as well as it explains risk.

Industry performance underpins the performance agreements between, for example, the DMO's Chief Executive and the Minister and the purchaser-

provider arrangements between the DMO and, respectively, the Capability planners and the Service Chiefs. In future iterations of the policy, we are therefore likely to see more explicit linkage to defence *internal* accountability arrangements.

Industry performance is nearly always critical to Defence's ability to achieve the performance targets for military capability outputs specified in the annual defence portfolio budget statements. Defence *external* accountability arrangements are therefore likely to feature more explicit discussion of industry's contribution to achievement of force structure and preparedness targets in the annual defence budget documentation and of industry performance – at least in aggregate terms - in the associated defence annual reports to Parliament.

The 2007 Statement acknowledges the obvious importance of defence procurement in shaping defence industry capabilities but seems to place the onus on tenderers to explain how refined defence industry priorities will be achieved via the proposed Australian Industry Capability Plans linked to each major project. For such Plans to make a difference in the real world, Defence must at least indicate in a future iteration of defence industry policy what weight it will give them in evaluating tenders.

The Australian Government's 2000 Defence White Paper explained the far reaching impact of information technology on the ADF. This explanation has since been refined and amplified in subsequent Defence planning documentation. By comparison, the treatment of defence technological innovation in the 2007 Statement is a pedestrian extension of previous initiatives. As these initiatives begin to yield diminishing marginal returns, Defence may need to refresh its vision of defence technological innovation, perhaps by integrating established arrangements and new initiatives like RPDE and the Defence experimentation process into a new conceptual model.

The 2007 *Defence and Industry Policy Statement* is the tenth iteration of defence industry policy since the 1980s. Dr Nelson and his review team are to be congratulated for making good progress. But we are not there yet.

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