

# Chapter 2

## Overview of Defence procurement

2.1 This chapter provides an introduction to Defence's procurement and the procurement environment. It explains the complexity and fluidity of the procurement environment whilst providing an overview of the scale and cost of Defence procurement. The chapter concludes with the committee's observations on governance and transparent feedback loops which it recognises as essential to the effective oversight of the entire capability process and its component stages.

### Capability and acquisition

2.2 In the context of defence, capability refers to the capability or ability to 'achieve an operational effect'. Maritime, land, air and information capabilities provide Australia with the military capability to 'meet our strategic interests through the ability to act independently, lead military coalitions and make tailored military contributions'.<sup>1</sup> The procurement of capital equipment for defence purposes entails the process from the 'conceptual genesis' of the project to its acceptance into service and ongoing maintenance.<sup>2</sup>

2.3 Major Defence capital projects that provide the Australian Defence Force (ADF) with new or upgraded military capabilities include armoured vehicles, ships, submarines, aircraft, weapons, and communication systems.<sup>3</sup>

2.4 The procurement of capability is complex for reasons including the fact that it is the 'combined effect of multiple inputs' as Defence highlighted:

Rather than being simply the sum of these inputs, capability is the synergy that arises from the combination and application of these inputs and this determines the level of capability in any particular context.<sup>4</sup>

2.5 Capability is defined as the effects of a system of interlocking and interdependent Fundamental Inputs to Capability (FIC) which include personnel, organisation, collective training, major systems, supplies, facilities and training, support, and command and management.<sup>5</sup> The committee recognises, therefore, that there are a number of key inputs to a capability project including resources, skills

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1 Department of Defence, *Defence Capability Development Handbook*, August 2011, p. 2.

2 Derek Woolner, *Submission 34*, p. 1. Disposal is outside of the inquiry terms of reference.

3 Australian National Audit Office, *Submission 22*, p. 1.

4 Department of Defence, *The Strategy Framework 2010*, p. 36, <http://www.defence.gov.au/publications/TheStrategyFramework2010.pdf> (accessed 6 September 2011).

5 Department of Defence, *The Strategy Framework 2010*, pp. 36–37.

including technical and engineering skills, intellectual property, infrastructure, risk and program management which determine the success or otherwise of a project.<sup>6</sup> Further, project performance is measured by elements including cost, schedule, risk, capability and sustainment.

## **Fluid and complex procurement environment**

2.6 Defence explained the complexities involved in defence procurement:

Defence must acquire leading edge capabilities and technologies to give our military and intelligence services an operational advantage. This invariably involves significant degrees of cost, capability and/or schedule risk not normally accepted by major companies, or found in most of the projects that they manage.<sup>7</sup>

2.7 Defence emphasised to the committee that leading-edge capabilities and comprehensive support services are 'essential to give Australia an advantage in military operations and intelligence activities'.<sup>8</sup> Defence projects are inherently complex for reasons, therefore, including the level of new or emerging technology employed and to their scale. Indeed, as Defence noted, complexity is a 'key factor in determining risk and the risk mitigation measures to be applied'.<sup>9</sup> Furthermore, the defence marketplace is undergoing change as Australia's major allies are increasingly developing 'single lines' of development for complex platforms through 'spiral' acquisition processes which require 'very early Australian engagement if our specific needs are to be taken into account'. Defence argued:

Highly complex and integrated weapons systems such as the F-35 fighter aircraft cannot be purchased and then developed to suit Australian needs within reasonable cost or risk parameters and there is no other suitable fifth generation fighter to choose from. While providing opportunities for Defence to be involved in the early stages of major new allied capabilities, this type of international acquisition process limits choice, and limits our ability to influence cost and the timing of equipment delivery.<sup>10</sup>

2.8 Air Marshal John Harvey, Chief of the Capability Development Group (CDG), highlighted the level of risk involved in Defence procurement projects:

Defence projects are complex because of their scale; the levels of advanced, often developmental, technology employed; the demanding environments in which they must operate; and the levels of assurance required. Procurement varies from developmental leading-edge systems with significant capability, cost and schedule risks through to less complex off-the-shelf buys. All these

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6 Miller Costello & Company, *Submission 30*, p. 2.

7 Department of Defence, *Submission 21*, p. 2.

8 Department of Defence, *Submission 21*, p. 3.

9 Department of Defence, *Submission 21*, p. 3.

10 Department of Defence, *Submission 21*, p. 5.

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projects involve some level of risk. Risk cannot be avoided but it can be measured, mitigated and managed.<sup>11</sup>

2.9 Indeed, Air Marshal Harvey continued:

In the technologically demanding and expensive defence procurement marketplace, we have to manage risk rather than avoid it. In simple terms, to avoid schedule risk by lengthening project delivery time frames would deny the capability to the war-fighter in the time frame that they need it to. To avoid cost risk by always opting for a fielded capability solution rather than investing in the development of a new technological solution could similarly deny the ADF a capability edge. In seeking to achieve the best capability outcomes for the war-fighter, the best commercial outcome for government and industry and the best value for money result for the taxpayer, we cannot avoid risk and, even with management strategies in place, we are unlikely to be able to retire all schedule risk from every project.<sup>12</sup>

2.10 These concerns were echoed by the Australian National Audit Office (ANAO) which noted that the size and complexity of Defence major capital acquisition projects can be at the 'far end of the spectrum experienced by both public and private organisations within the Commonwealth'.<sup>13</sup> The ANAO suggested that, against a background of significant administrative change, there is also greater risk to be mitigated and over long periods of time. Whilst there are means of mitigating some risk such as purchasing equipment off-the-shelf and by focusing on the capability definition and planning phase, there remains a need for ongoing close management over the life of the project.

2.11 Some submitters to the inquiry also emphasised the complexity of the defence procurement environment. Miller Costello & Company, for example, noted that whilst Defence procurement of specialist military equipment takes place in a market that has the same rules and behaviour as other markets, there are two features that distinguish it:

- Complex manufacturing process required of defence products has no peer: 'No civil industry faces the same challenges and risks in so many technology areas'.
- The company also noted that the government acts solely and unilaterally as both regulator and customer.<sup>14</sup> This second feature and its consequences were raised by other witnesses and is a dynamic that will be considered throughout the inquiry.

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11 Air Marshal J Harvey, Department of Defence, *Committee Hansard*, 7 October 2011, p. 1.

12 Air Marshal J Harvey, Department of Defence, *Committee Hansard*, 7 October 2011, pp. 2–3.

13 Australian National Audit Office, *Submission 22*, p. 8.

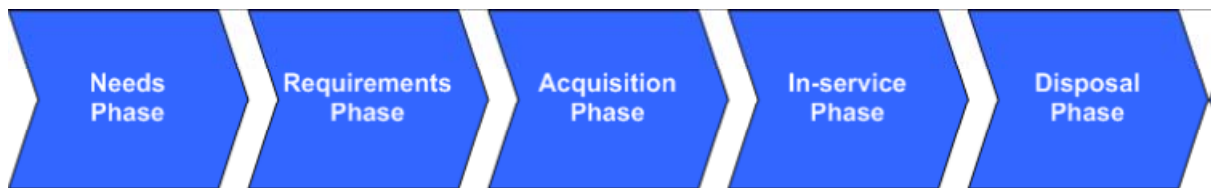
14 Miller Costello & Company, *Submission 30*, p. 1.

## Capability development process

2.12 Capability systems in the ADF have a life cycle that begins with the identification of the need to address a current or potential capability gap. This need is progressively translated into a functional capability<sup>15</sup> system that is operated, maintained and supported until it is ultimately withdrawn from service.<sup>16</sup>

2.13 The capability acquisition process is also followed for upgrades to major platforms which enter the Defence Capability Plan as separate projects, particularly if they contain 'capability enhancements'.<sup>17</sup>

*The capability life cycle*<sup>18</sup>



2.14 Both the Kinnaird and Mortimer reviews (which are discussed in detail in later chapters) considered Defence procurement through the capability life cycle from the initial stages of strategic assessment where a need is identified to address a current or potential capability gap.<sup>19</sup> Both reviews considered each phase of the capability life cycle and made a series of findings and recommendations directed at strengthening the respective phases as well as the overall life cycle.

2.15 The committee recognises that there are key phases in relation to the capability development life cycle that each major capital acquisition project goes through. These phases, which are interrelated and intersect, provide the framework of the committee's report and include:

- strategy, needs analysis and requirements phase;
- acquisition phase; and
- sustainment or through-life maintenance phase.<sup>20</sup>

15 Department of Defence, *Defence Capability Development Manual 2006*, p. 4.

16 David Mortimer, *Going to the next level: the report of the Defence Procurement and Sustainment Review*, 2008, p. XI.

17 Department of Defence, *Defence Capability Development Handbook*, August 2011, p. 13.

18 Department of Defence, *Submission 21*, p. 31.

19 David Mortimer, *Going to the next level: the report of the Defence Procurement and Sustainment Review*, 2008, p. XI. Malcolm Kinnaird, *Defence Procurement Review 2003*, p. 3. See also p. 14 of Kinnaird for the capability life cycle graph detailing the points of government agreement and approval.

20 The committee acknowledges a fourth 'disposal' phase whereby major systems and elements of capability systems are withdrawn from service. This phase is not considered by the committee as it is outside the inquiry terms of reference before it.

2.16 Defence noted that the major capability procurement process links 'strategic policy to individual equipment purchases, prioritises capabilities across Defence and ensures that capabilities are interoperable in a joint environment'.<sup>21</sup>

2.17 The 2009 Defence White Paper (DWP) provides a definition of interoperability:

Interoperability is principally concerned with the ability of personnel and systems of different nations and agencies to work effectively together, safely and securely. Where it makes sense to do so, and it is cost-effective and in keeping with the policy settings in this White Paper, capabilities and systems should be designed to be interoperable from conception, not as an afterthought in the capability development process.<sup>22</sup>

2.18 Air Marshal John Harvey, Chief of Defence's CDG also explained the concept of interoperability to the committee:

Interoperability occurs at a number of levels. In general terms, we have to make sure that any piece of equipment we acquire is interoperable with the system itself that it operates—for example, the radios et cetera in vehicles, to make sure they are compatible with that. We have to make sure that it operates with our own forces and that it also operates with forces of any allies that we are likely to work with as well. So interoperability occurs at a number of levels and can be achieved through common equipment, equivalent equipment or even equipment that just works to the same standards.<sup>23</sup>

2.19 Procurement of Defence major capital equipment is, therefore, complex and can be long term, large scale and must take account of interoperability. In order to provide leading edge capabilities, Defence must 'accept a high level of procurement risk'.<sup>24</sup> In this context, the following processes are fundamental:

- Defence White Papers—outline the strategic interests and priorities of government as well as the broad direction of Defence policy and tasks for the ADF.
- Force Structure Review (FSR)—underpins the White Paper and aims to strengthen the link between strategic guidance, force development and capability decisions. It determines the capability needs that become projects within the Defence Capability Plan (DCP).

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21 Department of Defence, *Submission 21*, p. 16.

22 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, p. 68.

23 Air Marshal J Harvey, Department of Defence, *Committee Hansard*, 7 October 2011, p. 52.

24 Department of Defence, *Submission 21*, p. 23.

- The DCP provides a costed and scheduled plan for major capabilities identified in the White Paper and any that emerge as necessary between White Papers.<sup>25</sup>
- Forward Work Program—sets out how CDG will bring specific capabilities forward for internal and government consideration.
- A series of internal quality assurance processes and committees, working groups and other bodies as well as gate reviews to examine each project's capability, cost, schedule and risks in detail to ensure that each project is positioned to deliver as required.
- Consideration of major projects by the National Security Committee of Cabinet (NSC) through the first and second pass stages and as necessary thereafter.
- Defence review of its own performance in its annual reporting cycle.<sup>26</sup>

2.20 The committee was not assured, however, that there are clear linkages between the NSC and Defence capability and that they are auditable, have transparent performance measures and are appropriately classified. Indeed, a major issue for the next committee report will be to attempt to audit the links between the NSC, White Paper, Force Structure Review, DCP and Forward Work Program.

2.21 Furthermore, the internal reviews, audits and reporting are a major focus of this inquiry. Evidence obtained by the committee suggests that this feedback loop is not working properly and the committee will endeavour to examine who is involved, how competent (qualified, experienced and independent) they are for the role and how transparent the reporting is. As noted by Air Commodore (Retired) E.J. Bushell, there is:

... a critical need for management feed-back loops to ensure visibility and control of program activity and status, and to facilitate governance oversight.<sup>27</sup>

2.22 Indeed, in relation to reporting, questions of independence arise when 'bad news' from technically competent people at the coal face is rolled up in sequential summaries to be a 'green light' by the time the report reaches the Chief of the Defence Force (CDF) or Minister. Likewise, the Defence review of its own performance in the annual report will be examined by the committee in the context of the linkages between the NSC guidance and capability sustained by Defence.

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25 The public DCP is updated six-monthly. Department of Defence, *Submission 21*, p. 16.

26 Department of Defence, *Submission 21*, p. 16.

27 Air Commodore (Retired) E.J. Bushell, *Submission 3*, Attachment 1, p. [30].

## Scale and cost of Defence procurement

2.23 In terms of scale, Defence noted that in 2010–11, it will spend over \$10 billion acquiring and sustaining military equipment and services. In this regard, it noted that the capital and sustainment budgets are of 'roughly similar proportions'.<sup>28</sup> However, industry witnesses estimated that the ratio for industry was one-third capital and two-thirds sustainment over the life of a capability.<sup>29</sup> Further, Defence held that:

There are over 230 approved major acquisition projects underway, over 100 minor projects and a wide range of other procurements associated with supporting services and infrastructure. Defence also maintains and sustains around 100 major equipment fleets. Defence is preparing approximately 150 not yet approved projects for consideration by government.<sup>30</sup>

2.24 Defence also stated that since the 2009 Defence White Paper (DWP) until the end of February 2011, the government had approved \$7.3 billion worth of major projects, ranging across both first and second and other pass approvals.<sup>31</sup> A question for the committee, however, is what would the amount have been had projects not been deferred.

2.25 The Chief Executive Officer (CEO) of the Defence acquisition agency, the DMO, Mr Warren King, provided an outline of DMO expenditure in relation to major capital projects which will amount to about \$11 billion for the year:

That is 42 per cent of the Defence budget and nearly 0.9 per cent of GDP. To put that perhaps in more tangible terms, that is \$45 million a day that we have to manage, and manage well. Fifty-four per cent of our budget is spent in Australia—so that is about \$5.4 billion of the expenditure we make—and, of that budget, we spend about \$2.8 billion with Australian SMEs.<sup>32</sup>

2.26 Mr King further explained that DMO runs between 230 and 240 capital projects. Of these projects, approximately 140 of them are worth more than \$20 million whilst approximately 100 projects have a value of less than \$20 million. Furthermore, DMO supports 100 projects in sustainment at \$5 billion a year. In order to do this, DMO has a staff of 7500 people located across 40 mostly regional sites around the country.<sup>33</sup> At the same time, Australia's defence industry employs approximately 29 000 people and supplies in excess of \$5 billion worth of material and services to Defence each year.<sup>34</sup>

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28 Department of Defence, *Submission 21*, p. 3.

29 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 14.

30 Department of Defence, *Submission 21*, p. 3.

31 Department of Defence, *Submission 21*, p. 3.

32 Warren King, Defence Materiel Organisation, *Committee Hansard*, 7 October 2011, p. 5.

33 Warren King, Defence Materiel Organisation, *Committee Hansard*, 7 October 2011, p. 5.

34 Department of Defence, *Submission 21*, p. 6.

## Committee view

2.27 The Defence capability development and acquisition process is extremely complex and requires an understanding of the entire whole-of-life process as well as the respective phases and component parts. The committee appreciates that strong and well articulated linkages between strategic guidance and capability development as well as considerations including a project's life cycle and interoperability are fundamentally important to the process. Furthermore, in order to allow for both the oversight of the entire process and its components, well defined management feedback loops which work effectively are essential. In this regard, the committee notes the observations of Air Commodore (Retired) E.J. Bushell who articulated the importance of management feedback loops not only in terms of enabling an understanding of the accurate status of a project but also in relation to the effective implementation of Defence reforms.

Feed-back loops, integrated with, but independent of, functional management, are designed to provide current and accurate project status visibility up through the executive chains of management and governance. Such loops, properly resourced in skills and competencies, offer a more cost effective and time efficient means of introducing reforms that become self-actualising and so will not fade over time or through interference or neglect.<sup>35</sup>

2.28 The next chapter will consider the Defence Reforms and their implementation.

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35 Air Commodore (Retired) E.J. Bushell, *Submission 3*, Attachment 1, p. [30].