Review of the Preliminary Report on Procurement procedures for Defence capital projects

ASC feedback to
Standing Committee on Foreign Affairs, Defence and Trade Inquiry into Defence Procurement

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Introduction

This submission has been developed by ASC Pty Ltd in response to an invitation from the Australian Senate's Standing Committee on Foreign Affairs, Defence and Trade (hereafter referred to as the Committee) to feedback on their Preliminary Report on Defence's major procurement and sustainment projects (hereafter referred to as the Report). This feedback considers questions in the Committee's preliminary Report about the professionalism of the Defence leadership and its commitment to genuine reform, openness to scrutiny, and accountability. ASC suggests that entrenched structural impediments drive counterproductive behaviours and also argues that benefit can still be gained from fully bedding down current reforms. However, in some cases a reallocation of roles, functions and responsibilities, and the matrix management model currently in place are, potentially, underlying causes of some of the issues identified in the preliminary Report. ASC has critically examined the Committee's preliminary Report and offers observations and also recommendations for further exploration.

Submission Overview

Among the projects in the Defence Capability Plan listed for procurement, and those currently in build and planning for sustainment, are a number of naval projects of national strategic significance. They stand out from other Defence programmes by being high value complex maritime capital assets with long life-spans (30+ years) requiring significant technological and industrial infrastructure to develop, build, support, maintain and upgrade. They aim to provide Defence with a capability advantage over potential adversaries. Key projects in this category include SEA 1000 Future Submarine, SEA 1180 Offshore Combatant Vessel, SEA 5000 Future Frigate, JP 2048 Phase 4 Amphibious Assault Ships, and SEA 4000 Air Warfare Destroyer. These projects bridge generations in terms of governmental direction, the workforce necessary to build and support them and the military personnel that operate the assets once delivered.

Over the last decade, and as the Commonwealth has worked its way through planning for these projects, a number of key reviews addressing a range of procurement related issues from Kinnaird to the current Coles Review have been undertaken. Reforms stemming from these reviews have been instituted but appear to have increased the complexity of Defence procurement. At the same time, a backdrop of global financial instability and Government belt-tightening has seen Defence approvals, and the associated funding, significantly reduced. Those companies in Defence Industry with approved and funded workscope are marching forward but for other players job shedding is becoming more common. This equates to Australian Defence Industry capability losses as skills are redeployed to other high demand sectors, including mining.

This inquiry comes at a critical time for industry and improving or streamlining Defence's procurement processes and structure should be a major focus. ASC is therefore in full agreement with the aspirations of the Committee and so will structure feedback around the following areas:

- Process complexity and efficiency
- Industry engagement
- Skills and accountability

Within the group of naval projects of strategic significance, the Future Submarine has requirements that demand special attention. The 2009 Defence White Paper calls for a capability better than the existing Collins class. However, with the exception of Japan and Canada, no country that Australia is likely to align with has comparable requirements for a conventional (non-nuclear) submarine. Therefore, there are limited partnering opportunities to help defray Future Submarine whole-of-life support costs that would be borne by the RAN as a parent Navy to a unique class of ship. It logically follows that, absent a strategic partner in conventional long range submarines, Australia's level of self-reliance in this area should be higher than for most other Defence capabilities. Any strategic partnership formed later on could then help to defray the cost of ownership. Defence self-reliance is the subject of considerable public debate. Therefore, ASC will argue that ambiguity over matters of Sovereign Independence limits procurement guidance clarity and cedes influence on the project development process to economic drivers. This is an issue that must be resolved.

We life in a region of burgeoning submarine capabilities and a time of reducing military capability in our major strategic partner as evidenced by the current defence funding sequestration debate in the US and GAO analysis of US Navy build plans. This results in increasing pressure from alliance partners to "pull our strategic weight". Consequently, the highly strategic nature of Australia's submarine industry must be recognised in the Defence procurement process as it has considerable implications for the procurement strategy in project SEA 1000 Future Submarine. This leads ASC to its final item:

- The strategic imperative and competition policy

The discussions that follow will occasionally make reference to the Committee's Preliminary Report on Procurement procedures for Defence Capital Projects by identifying and addressing points in specific paragraphs. Any other data sources used will be more fully referenced.

PROCESS COMPLEXITY AND EFFICIENCY

Discussion

At Para 8.1 the Committee identifies that the Defence capability procurement process is labyrinthine. This is no overstatement but ASC observes that in order achieve the checks and balances required for the prudent expenditure of public funds, many of the processes are necessary and may not easily be dispensed with. Nonetheless, there is scope for reduction and simplification, and if the circumvention of processes alluded to in many parts of the report occurs frequently, then simplification, not more layers of governance, is warranted. ASC, as an educated and experienced observer, encourages change to make processes more transparent, where the classification of information allows.

Current procurement policies and practises for major Defence projects have characteristics that drive considerable delays and undesirable outcomes. Such characteristics include; large batch procurement[1]; start-stop decision making; lengthy durations to plan and prepare for significant upgrades/replacements; and gradual degradation of a capability advantage over the lifespan of the platform, system or equipment.

[1] Large batch procurement is the process whereby a completed design, which meets an agreed set of requirements, is used for the build on an entire class of vessel. Small batch procurement is the process whereby a design only remains relevant for a batch of hulls within a class, enabling design improvement iteration between batches. Eg; a build of 12 could be broken into 3 batches of 4 vessels. Large batch necessitates dependence on major capability upgrades to maintain a capability edge resulting in increased sustainment costs and cycle times. Small batch acknowledges and plans for design improvement iteration.

Degradation of the capability advantage is further exacerbated by lengthy timeframes to plan and prepare for upgrade or replacement projects. These delays frequently lead to block obsolescence[2], thereby perpetuating the boom-bust cycle. At the same time significant cost and effort continue to be directed to maintaining systems that may have lost their capability edge. In many cases the foregoing two issues move a capability further up the steep slope on the right hand side of Rizzo's so-called "Bathtub Curve". The Air Force's F111 fighter bombers were one case in point. This capability was retained well beyond its ability to be cost effectively sustained; and in the maritime sphere, the Collins class is at risk of suffering the same fate if Government decisions continue to be delayed on Future Submarine.

Other Considerations

At Para 6.21 the Committee discusses the Mortimer recommendation for Defence to seek Government approval for significant changes from the originally approved scope. When considering a return to Government for guidance it must be recognised that any unscheduled project review will generate a hiatus that inevitably increases schedule during the acquisition phase. Whilst this might be seen as a negative for program progress, ASC believes the Committee is on the right track in this matter as the oversight drives behaviours to minimise scope creep.

Preferred Approaches

ASC contends that Defence capabilities considered to be of national strategic significance would benefit from an acquisition process that mitigates block obsolescence in a planned and systematic manner and continuously maintains the capability edge. Acquisition processes that maintain the capability advantage are well established in other countries. For example, in US submarine programs, rolling or small batch procurement, technical insertions and spiral development practises are well entrenched. This continuous build and development approach has the benefit of reducing risk and sustainment costs. This is because smaller batch builds enable an evolutionary approach; and this is irrespective of whether the initial solution is MOTS. This enables the controlled insertion of changes based on new user requirements in each subsequent batch to enhance and maintain a capability edge. This then removes the need to undertake major capability upgrades on an entire class and during sustainment periods. This can be used to maintain a capability edge as well as dealing with obsolescence issues and is suggested by ASC as an optimal approach for our most important national strategic capabilities.

With respect to returning to Government for project guidance, there will occasionally be strategic drivers for scope change. Referral back to Government should therefore be seen as a measure to reduce project complexity as well as to improve organisational accountability. Change is the greatest driver of cost and schedule increases in any project. If scope change is contained the main drivers of cost and schedule change become Industry's ability to deliver rather than the Project Office dealing with scope change. Limiting scope creep is not inconsistent with iterative development approaches or small batch procurement. Indeed it supports it by controlling unconstrained scope creep through a formal approval process and the inclusion of change incorporation windows in between batches.

Enforcing scope change discipline therefore offers the greatest potential improvement in cost and schedule control. Accountability for delivering a defined scope then lies more clearly in Industry hands and Government need not revisit a project other than as planned. This offers overall procurement process efficiency gains and drives complexity reduction.

[2] Block obsolescence occurs when the capabilities provided by a given class of vessel (usually procured as one large batch) no longer meet the requirements of the user.

ASC considers that considerable benefit may well be gained from the introduction of a "gated" process from project initiation, through planning and concept development to design and acquisition (for each batch) and, ultimately, disposal. Gated project development processes are commonly used in Industry and are characterised by having clear gate entry and exit criteria, gate keepers and empowered gate stage process owners. An integrated and coordinated end-to-end process, with accountabilities allocated according to organisational skill sets, will improve compliance, reduce decision making timeframes and properly apportion organisational (and thereby individual) accountability.

INDUSTRY ENGAGEMENT

Discussion

No amount of process will, in the absence of input from Industry, achieve the aims of Kinnaird and Mortimer *et al*. If more data, earlier in the decision cycle remains a requirement then early engagement of Industry to provide some of it is the best recourse. Unfortunately, such engagement comes with little assurance of subsequent work so mechanisms for funding the support may need to be examined.

One limitation of very early Industry engagement is the lack of definitive requirements against which feedback such as potential cost and schedule information must be generated. Consequently, such early engagement must be undertaken with a clear understanding of the limitations in data accuracy that low fidelity capability requirements at the front end of the process engender.

Clearly, in order for the procurement process to benefit from early Industry engagement, addressing the foregoing issues will be important. The prevailing paradigm of recent years has seen probity and competition policy work against early Industry engagement and resulted in Professional Service Providers and other less well informed commentators being called upon to fill the information void. This can easily result in poor data or low fidelity responses which do not add significant information or value to a developing project. Recent amendments to probity policy with respect to removing above-the-line and below-the-line separation of providers may ameliorate this issue.

Other Considerations

At Para 4.42 the Committee noted CDG guidance on early engagement with industry as a means of providing, *inter alia*, indications of whole-of-life costs, and commented on engagement through *fora* such as the Maritime Environmental Working Group. Whilst early engagement could seek such data, the immaturity of concepts of operations (from which to derive reliability requirements and related analyses required to assess likely costs) is such that the information will often be of limited value and this can translate to unrealistic project expectations.

The Committee also considers earlier engagement with Industry in the needs phase of a project at Para 4.68. ASC's experience is that this is currently very low level involvement except in limited scope Rapid Prototyping Development and Evaluation (RPDE) activities and notes Defence's intention to expand this.

The Current Trend is Good

ASC agrees that opportunities for early engagement with Industry for capability procurement projects are currently few, except in limited scope Rapid Prototyping and Development and Evaluation and informal

business development activities. Consequently, planned improved Industry engagement mechanisms, such as using RPDE more extensively through the project development process, are welcome.

Industry must also share some of the blame for sub-optimal engagement. Although previous efforts at engagement by ASC may not have been properly executed, ASC is now attempting engaging more deeply with the DMO and Capability Development on Future Submarine issues and this will continue.

Industry engagement, if used to more thoroughly to explore capability option feasibility in terms of Industry capacity and capability, could facilitate early identification of option non-starters and undertake cost-capability trades in order to reduce later project planning costs. This raises the potential for contracted industry engagement early to reduce downstream options analysis costs by pre-empting detailed cost and schedule analysis effort on less feasible options. This is not just about reducing options analysis. It is about refining requirements before option development and, because industry is involved, developing a more feasible, lower risk and potentially smaller option set. This results in a consultative, collaborative and transparent co-design effort which offers Government confidence and reduces project risk.

DSTO, as the chief arbiter of Technical Risk, could also benefit from closer engagement with Industry when undertaking feasibility analysis to support technical risk judgements. However, the greatest potential gain is for Industry to directly support the procurement process before final Government approval with feasibility, capacity and Industry capability analysis, as is the currently flagged intent.

Finally, ASC considers that early and relevant Industry engagement could add value to a properly integrated "gated" project development process and that contracted Industry support would gain the best level of commitment. Such a process offers opportunities to adjust project direction at each gate based on the outcomes of the previous stage. Although the current procurement process is meant to do this, the circumvention that the Committee's Report has identified suggests that ownership and accountability is dispersed and ambiguous. A simpler gate process with clearly defined gatekeepers and stage owners may therefore offer improved transparency and accountability.

SKILLS AND ACCOUNTABILITY

Discussion

In recent years changes driven by Kinnaird and others have resulted in increasing demands for detail to support the capability decision making process. This has, in part, fuelled the DMO drive to professionalise and at the same time seen a greater need for process support from the DMO within CDG. One issue that has consistently affected project development outcomes is the loss of technical expertise from the DMO and the Navy as identified by the Rizzo Review. Whilst process support from the DMO for operations specialists within CDG is appropriate and necessary, the resultant dilution of available operational expertise is an unintended negative consequence which may need to be redressed. Coupled with a wider loss of technical expertise (vital for technical feasibility analysis) the project development process has, arguably, been crippled. This is due to additional technical analysis process steps, often staffed by Professional Service Providers and deliberately separated from Industry, being required to provide the technical assurance to progress a project.

As a result of; the dispersal of operational expertise, the general loss of technical expertise and the frequent lack of appropriate specialist input to the project development process, Industry is often confronted with conflicting guidance on project requirements and progress. Any action to reduce this ambiguity would be very welcome.

Other Considerations

In recent years the DMO has provided more assistance to CDG in developing the CDD suite as described at Para 4.58. If accountabilities are to remain clear and uncluttered this support could be limited to Industry engagement for cost and schedule estimating purposes.

Preferred Approaches

In recent years more distance, formality and process has developed between two groups of practitioners, in Capability Development and the DMO, who really need to work hand-in-glove. Closing this perceived gap between the two organisations may improve their ability to more efficiently generate capital procurement outcomes. Centralisation of operations staff back to CDG seems appropriate. ASC believes that recentralisation of skills back to their home organisations will improve organisational ownership of their respective parts of the procurement process thereby improving accountability. Introduction of a simplified gated process, buttressed by recentralisation of core expertise back to home organisations, could clarify process and individual accountabilities – one person responsible for moving a project from one gate to the next and gatekeepers with the skills and experience to guide and maintain progress.

COMPETITION POLICY AND THE STRATEGIC IMPERATIVE FOR SEA 1000 (FUTURE SUBMARINE)

Discussion

The acquisition approach for capital projects such as the Future Submarine has an opportunity to implement a strategy for maintaining a relative capability advantage through its life-of-type, consistent with Asset Management principles. In other countries, such as Japan and the US, this is achieved by building submarines in batches combined with a continuous program of pre-planned upgrades through their lifecycle. This approach provides the structure to accommodate lessons learnt, obsolescence, and evolutionary enhancements and therefore significantly reduces the likelihood of block obsolescence and the efficiency impacts of a boom/bust cycle. If used in Australia it would produce a more efficient and sustainable technological and industrial support base, reduced procurement cycle times and improved value for money. However, the freedom to use a future submarine capability as dictated by national policy must also be considered.

Sovereign Independence in Defence capability can affect a State's freedom of geo-strategic action. If the Australian Defence supply chain is subject to the dictates of a country not aligned with our values, a warfighting capability and the necessary freedom required to deploy it, may not always be available. For example, Defence was unable to deploy some critical capabilities to the Vietnam War due to end-use constraints imposed by the Government of certain manufacturers of weapon systems[3]. Bringing this consideration into a contemporary context; Australia may well seek to develop highly capable, long range

[3] Peter Yule and Derek Woolner, *The Collins Class Story; Steel, Spies and Spin*, Cambridge University Press, 2008

conventional submarines. We should therefore retain sufficient freedom to deploy them in a range of operational scenarios, commensurate with our geo-political alignments. The level of Sovereign Independence required for a Future Submarine capability is therefore a critical procurement consideration. However, this is often left unclear or ambiguous, which inevitably leads Defence procurement processes to give other considerations greater prominence in acquisition planning.

Finally, on the subject of how competition is achieved for strategically critical capability procurement, ASC asks: Does a value-for-money test by competition in a monopsony relationship really reduce cost? ASC argues that the current approach actually adds cost and schedule risk.

Open competition in a monopsony market sets up behaviours previously described as a "conspiracy of optimism"[4]; which might more accurately be termed a company survival instinct. A further question then arises: In a monopsony situation how can a free market exist? The presence of a free market suggests the potential for alternative customers/opportunities, presenting alternate revenue sources to companies. This is not the case in the Australian maritime market place due to a single customer and the paucity of maritime opportunities. The result is that bid teams are more likely to undercut and make high risk proposals as a matter of survival with the hope that their best case outcomes will be realised. This environment and bidding process drives overly optimistic estimating which sees tender respondents present the very best case projections in order to win. This clearly adds cost and schedule risk.

The competition mantra is that the market should decide which companies stand and which fall in order to keep the market lean and keen and, if carried to its natural conclusion, is likely to see a reduction in available suppliers of Defence products in Australia. This reduction hallows less competition and a smaller indigenous skill base. This is less of an issue to large multi-nationals who generally enjoy a free market due to their access to, and dispersion across, a world market place. However, this market access is not available to most Australian SMEs; and the consequent loss of industrial diversity and capacity is not in Australia's best interests from a capability sustainment perspective. As an island nation with one of the longest shorelines in the world to protect and half a world away from our closest allies, it does not make sense to risk the redeployment, deskilling and fragmentation of our Defence Industry due to ideologically driven, universally applied, competition policy. Indeed, a controlled and deliberate reorganisation, still subject to a level of competition, would be a safer course of action to the uncontrolled fragmentation that may already be underway.

Alternate Approaches

ASC believes that Australia's strategic Defence capabilities would benefit from management plans that span two or three generations of each major asset class; the current, its replacement and the next. These asset management plans would need to be generated under the auspices of an overarching naval shipbuilding and repair industry policy. The class plans should provide guidance on; Sovereign Independence, intended life-span of the capabilities, technological and industrial infrastructure to develop, batch build strategy, capability maintenance and upgrades, intellectual property and international alliance interoperability requirements. Finally, they should define the national enterprise/s required to develop and maintain a defined capability edge.

[4] Katherine Ziesing, From the Source; Kim Gillis and Warren King, *Australian Defence Magazine*; 1 Aug 2008, http://www.australiandefence.com.au/3A06B300-F807-11DD-8DFE0050568C22C9

Multi-generational asset management plans would provide long term guidance from Defence on each strategic capability and its acquisition and sustainment strategies. This would help reduce decision making bottlenecks. It would also provide certainty to the technology and industrial base by providing information and guidance on build strategies, planned upgrades and any surge capacities required of Defence and Industry thereby lowering the risk profile of significant acquisitions. Recent Defence Capability Plans have not gone far enough in this regard.

For Australia's submarine capability; indigenous design and build, guided by the asset management plans, could also facilitate integration of key US technologies. These include Combat Systems and Weapon Systems supporting interoperability with our key ally – the US. MOTS European solutions often use other systems that are not interoperable with US technology and could hamper Australian efforts in this area. An important issue to be specified in these plans is the degree to which Sovereign Independence will drive capability selections.

The level of Sovereign Independence required by Government to meet its national security objectives is a critical strategic factor. For most strategic asset classes it will drive how Defence procures major equipment while seeking to gain and maintain a capability advantage over potential adversaries. For Australia's submarine capability it must be quantified in order for it to be able to shape defence procurement strategies and influence the requirements for domestic technologies and Industry. Determining the degree of Sovereign Independence required may then allow a rationalisation and refinement of the Priority Industry Capabilities and Strategic Industry Capabilities.

In circumstances where Australia's requirements for a strategic capability advantage drive Defence to being the sole parent operator of military equipment, such as submarines, a high level of Sovereign Independence is warranted. This would provide the clarity for Defence to shape procurement and sustainment strategies more effectively. It would underpin the need for Defence procurement to establish suppliers that can deliver long term commitment to resolving the unique engineering and whole-of-life support matters specific to the capability. It would also ensure Defence has Government direction and support to obtain the freedom to act on matters of the deployment of the assets, use of intellectual property and supplier selection based on Sovereign Independence criteria.

So finally, if the capability under consideration is genuinely of strategic significance, and the preservation of an indigenous sustainment industrial base remains a national imperative, then a different value-for-money demonstration is called for. Australia could commit to the maintenance of a centre of excellence in submarine capability (this has also been referred to as an "Enterprise" in some commentary) and compete work at the supply chain level. This would have the effect of preserving a core of expertise to guide and maintain a national strategic capability whilst still allowing competition to satisfy the value-for-money test. This already occurs in other places, including our key Alliance partner, the US. In the UK and Canada, similar considerations have resulted in very long term commitments to shipbuilding programs.

ASC, as a GBE, would be able to provide a significant component of the core of expertise required for a long term, commitment to an Australian submarine enterprise.