NTPFES SUBMISSION TO PUBLIC ACCOUNTS COMMITTEE RE ENQUIRY INTO MANAGEMENT OF ICT PROJECTS

This submission addresses: Item 3. Options for improving ICT procurement and management across Government.

Background

Project management is the discipline of planning, organising, motivating, and controlling resources to achieve specific goals. It is a discipline which is underpinned by a broad suite of tools, and a number of methodologies have emerged to provide guidance to project managers on which tools to use, how to use them and when to use them.

Projects involving multi-agency stakeholders face inherently complex social issues. Managing stakeholders may be a difficult task, as each stakeholder has its own agenda and level of commitment.

There are many types of projects which involve software. Software intensive projects are those projects where the majority of the risk stems from the software. This does not mean that they might not also include the integration of hardware or services, but software is the key component of the project. Software intensive projects are among the most complex and difficult projects to manage. Software cannot be seen or touched. Its development invariably involves complex technical and/or issues and therefore usually involves significant risk.

The difficulty of managing software intensive projects is widely acknowledged nationally across all tiers of Government and the commercial sector. While we have been constructing houses for thousands of years, software development does not have a long history – perhaps 50 years at most. It should not be surprising therefore that knowledge about managing software development is still very much in its infancy and consequently failed projects are comparatively frequent.

In response to the significant risks posed by software intensive projects, organisations such as the Commonwealth Government's Defence Materiel Organisation (DMO) have invested heavily in training their project managers and rolling out sophisticated project management methodologies. Yet the difficulties involved are such that they continue to struggle with these types of projects, and project short comings and failures continue to be catalogued.

In comparison with the DMO, the Northern Territory (NT) Government has a relatively low level of project management maturity. It does not have highly developed processes or methodologies, and cannot match Defence's commitment to resourcing its projects. It is therefore not surprising that the NT Government, like every other State and Territory has struggled with multi-agency software intensive projects – we are after all seeking to manage complex technical projects in a complex social environment.

This paper identifies some key changes which, if adopted, will lay the foundation for improvement which can be built upon.

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Managing Stakeholders

Department of Corporate and Information Services (DCIS) recently engaged Steven Walker from Frazer Walker consultants to undertake a strategic review of ICT Governance at the whole of government level. This review confirmed that the central governance structures are deficient and made a series of proposals to strengthen the overall framework of whole of government ICT leadership. In implementing this important initiative, the key issue will be to ensure that the framework receives ongoing support at agency (business) level, and is not seen as purely an ICT issue.

The success of the new arrangements will be critical to improving the management of multi-agency ICT projects. Importantly, it should provide the basis for implementing some key reforms which will improve the chances of success for future projects. Some of these initiatives are outlined below.

Recommendation 1. Support the attempt to implement a strengthened central ICT Governance Framework.

Competent Project Managers

Having built a new ICT Governance framework, the first issue that needs to be considered is how to ensure that the NT Government is represented by competent project managers. There are a variety of methods of procurement which might be used in software intensive projects. These methods result in varying levels of work being contracted out. In all circumstances, it is very important that the NT Government's interests are protected on a day to day basis by a highly competent project manager who is directly responsible for a successful outcome.

There is no easy solution to achieving this in a resource constrained environment. Possibly the easiest solution is to provide Territory wide guidance on minimum Project Management qualifications against different levels of project complexity and put in place a mandated due-diligence process into past competence. Over time, this should enable individuals to get the appropriate training and identify those who do a good job.

In selecting competent project managers, it is important to differentiate between good operational managers and project managers. Operational managers deal with maintaining the status quo through incremental change. Project Managers change the status quo. While the technical issues may be similar, the processes and procedures are very different.

Recommendation 2. Put in place a simple system to ensure that Project Managers are well trained and competent. This can be improved over time.

Standardising Methodology

Once competent project managers are identified, the next step is to provide clear guidance on the project management methodology to be employed. There are a number of Project Management methodologies available. Each has their own relative strengths and weaknesses. Standardising on one methodology (ie Projects in a Controlled Environment 2 (Prince 2)) or, more flexibly, mandating the minimum standard for tools to be used offers some significant advantages. In particular, over time everyone gains expertise in the tools to be used and a greater awareness of how things are going to be done. Moreover, templates can be devised and the body of knowledge can be more easily built upon over time.

Recommendation 3. Standardise on a single project management methodology so everyone can gain experience in how things are done and standard templates can be used to save time and capture lessons learnt.

Independent Reviews

As noted in the introduction, whole of government software intensive projects often need to deal with complex technical problems in a complex social environment. This raises an important question – how do we ensure at each major stage of project implementation, the project has adequate resources, appropriate structures and risks are under control? Initial cost estimates are notoriously difficult to do, and must be progressively refined as the project progresses. How do we ensure that the business case remains sound and the project has a reasonable chance of success?

In an ideal world this role falls squarely on the Project Manager oversighted by the Project Board. But as noted above, management of multi-agency software intensive projects is about managing complex technical issues in complex social environments. Project Managers can get too close to their projects and this clouds their judgement as they make an increasing number of compromises to maintain schedule, quality and cost while appeasing stakeholders. So while the early signs of a project disaster can be seen easily in hindsight, the day to day pressures on the Project Manager mean they may not pick these signs up early. All too often, projects get a momentum of their own, and there are too many vested interests among the stakeholders to admit difficulties and institute remedial action.

In theory projects have Project Boards to monitor their progress and provide direction. However, these Boards can only operate effectively if there is a stable membership of people with the correct skills and experience. The Boards not only need to consider the issues brought before them by the Project Manager but also knows where to request information or independent audits.

It is important to understand that at times the Board's governance role can be at odds with its stakeholder representation role. Stakeholders have objectives which reflect their agency's needs (such as limiting resource allocation) which may not align with project needs. This can put Board members in difficult situations and ideally structural solutions are required which do not rely purely on the Board itself recognising the problem or issue.

The Commonwealth Government has recognised these types of problems and instigated independent stage gate or gateway reviews for some major projects. At key milestones independent experts investigate the health of a project. The project is not allowed to progress through the gate until they have demonstrated that their business case remains sound, appropriate support tools and procedures are being employed, and they have the resources and expertise to have a reasonable chance for success.

Within the NT Government, the only independent review of projects is conducted by the Procurement Board when it examines the method of procurement. This review is very time constrained and limited.

The NT Government does not have the Commonwealth Government's resources. Nevertheless, it is easily within the NT Government's resources to identify a series of stage gates for critical multi-agency software intensive projects and convene a Board of Experts to review progress and advise the project team before authorising advancement.

The Review Board could be staffed by Agency Chief Information Officers and experienced project managers, who are not involved in the project. The task would not be overly onerous, if the initial review was limited to a day. If this review indicated potential problems, then necessary resources could be mobilised to remedy the situation and ensure the project was on track before proceeding. While this approach would not have the thoroughness of a full review, it does provide an economical start which can be built upon over time. It could be used to ensure that project methodologies are standardised, expertise shared, project management competent and thus provide government with a greater degree of assurance at low cost.

Recommendation 4. Institute independent stage gate reviews to ensure that the standard methodology is being used, the business case is sound and lessons are learnt and shared.

Contingency

In recent years it has been common practice for Projects to be approved without providing a financial contingency. Presumably this is a method of ensuring cost consciousness, by effectively passing the contingency costs onto the agencies concerned. This practice is bad for a number of reasons.

First, software intensive projects typically have contingency levels of 30-50%, reflecting the scale of the risks involved. Stripping out the contingency provides a false guide to the likely final costs of the project and the risks involved.

Second, each year agencies have their budgets reduced through the extraction of efficiency dividends. This raises the question of whether agencies can afford to provide the contingency for a major project, or indeed, their financial positions leads them to put overdue pressure on project managers not to allow cost increases.

Third, there are often circumstances where contingency should be spent to mitigate risk. If the Project Manager is not given this funding, then there is a risk that this sensible course of action will not be followed and the project risk profile unnecessarily increased.

Fourth, the need for contingency does not go away if it is not provided and so there is a temptation to 'pad cost estimates' in lieu. This approach raises obvious governance issues. Further, where it does occur, it means that there is a greater likelihood that the Project Manager will be able to spend the 'contingency' without third party scrutiny, thus effectively hiding problems.

Recommendation 5. Ensure that appropriate contingency is provided for all projects.

Consequences.

The DMO has a sophisticated methodology for both contractor and project office assessment. This includes six monthly and overall performance reviews. Such a process is not without its problems, but the principle that poor performance will have consequences is nevertheless sound. This approach provides incentives for contractors to go the extra mile to resolve issues that arise.

At the very least the NT Government should devise a system which evaluates and records prime contractor and project manager performance. These evaluations must then be factored into future involvement in projects. This approach gives everyone an incentive to improve their performance and penalises those who do badly.

Recommendation 6. Ensure that poor performance has consequences.

Conclusion

This paper argues that multi-agency software intensive projects are often technically and socially complex. The chances of success can be improved without the requirement to extend large amounts of resources by taking the following relatively simple steps:

- Support the current initiative to develop a strong central governance arrangement.
- Take steps to ensure that the Project Managers are well trained and competent.
- Provide Project Managers with a single, well defined methodology to work within.
- Undertake independent project reviews at prescribed stage gates to ensure project health.
- Do not provide artificial constraints on the Project Manager by stripping out contingency.
- Ensure there are consequences for poor performance.

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