

The Australian Institute for Commercialisation

Submission to Review of the National Innovation System and to the Intergovernmental Working Group

III. Innovation in government

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Declaration of Interests and affiliations

The Australian Institute for Commercialisation (AIC) is a national, not-for-profit organisation established in 2002 to assist in the commercialisation of Australian research and know-how. Its vision is to enhance Australia's future economic prosperity, environment and lifestyle by improving our national ability to take innovative ideas to market.

The AIC's sole shareholder is the Queensland Minister for Tourism, Regional Development, and Industry. Reporting to an independent board of directors, the AIC works nationally with Australian industry, research organisations and governments to create high value jobs, exports and wealth by taking innovative ideas to market.

The AIC is chartered to work within the innovation system, and as a predominantly publicly-funded body generally operates in areas of market failure. In 2008, the AIC will deliver services for the Australian, New South Wales, Queensland, South Australian, Victorian and Tasmanian governments. The AIC declares its interest to continue to see strong government support for strengthening the innovation system in order to build a more prosperous future for Australia.

GOVERNMENT INNOVATION

Government's role with respect to innovation is traditionally considered in the context of either economic development or of building research capability in public sector research organisations. Economic development objectives in particular possess two innovation-related dimensions: i) establishing economic development policy, in turn enacted through industry development support programs across the respective government jurisdictions and ii) the potential role of procurement policy to be a catalyst to foster innovation in the supply of products and services to government. There is a new, third emerging role, and that is the sharing of government-developed or government-owned IP with other government agencies, or even its commercialisation by industry, to help strengthen their innovative capacity. The first issue is addressed in other AIC submissions to the review, while the latter two issues are considered within this submission.

This submission therefore focuses on innovation within government, that is, how government agencies can themselves become more innovative in enhancing public value via the delivery of services in a more targeted, sustainable and cost effective manner through reduced duplication and improved interaction with the value chain.

Barriers to innovation within government

In the AIC's experience, innovation itself is poorly understood by most government personnel. Furthermore the government environment is rarely conducive to encouraging true operational innovation. The reasons for this are many, but the most commonly occurring barriers we have observed are:

- ➔ Attitudes of risk avoidance (as distinct from true risk management to mitigate risk) induce attitudes of intolerance toward failure.
- ➔ The hierarchical nature of government bureaucracy discourages creativity, irrespective of levels of seniority of employment and role.
- ➔ Issues relating to probity create artificial barriers to achieve true collaboration. In particular, this relates to the requirement to observe openness and transparency in all matters involving industry firms.
- ➔ Legal requirements (in terms of legal advice and resulting contractual obligations) are often not aligned to the true risk actually faced, and apply irrespective of relative financial risks faced by government. In some respects, this results from the above-mentioned attitudes to risk aversion common across government.

- ➔ The frequent rotation of government personnel, meaning that attempts to entrench innovation operationally are short-lived, and that attempts to raise the skills level of staff are lost.
- ➔ Little value being placed on the benefits that can be obtained by the better management and leveraging of intellectual assets created by government agencies. Indeed, intellectual property is itself poorly understood. IP is often thought of as comprising only formal registrable IP in the form of patents, and as a result, IP management is more often seen as a management burden. The only exception to this observation is (to various degrees) within the research intensive agencies such as health or the primary industries portfolios, as examples.

Despite these barriers however, there are a number of areas that have been identified where government, and as a result the community (as the recipient of enhanced public value through more efficient government services), can achieve significant benefits through innovation. Two of these areas are highlighted below – the sharing or commercialisation of government intellectual assets, and proof of concept R&D to inform procurement.

I. Identification and sharing or commercialisation of government intellectual assets.

The AIC is tasked with delivering the Queensland Government ICT Commercialisation Strategy. Since 2006, over 60 ICT projects from within government have been commercialised to industry, for industry to further develop and market, resulting in identified savings to government and licence fees of over \$6M. There are currently 180 projects open to industry for uptake. Participating departments have included Health, Emergency Services, Police, Communities, Shared Services, and others. This is one pillar of a governmental approach to innovation, because it helps strengthen industry partners by providing them with an existing customer, new IP, and access to new markets. It also improves innovation within government, on the assumption that industry is able to more effectively maintain and improve support systems than government, thus enabling government to better deliver its core services.

Commercialisation however, is only one method to reuse government-owned intellectual assets. The second is to enable the sharing of such assets between jurisdictions, and within other government agencies, on the basis that sharing can reduce 'reinventing the wheel', and

lead to innovation that follows closer collaboration, and with it, the sharing of ideas to create new intellectual assets that result in improved value in the delivery of government services.

There is no doubt that potential benefits from information sharing have already been identified across government. The idea is not new. Sharing intellectual assets and IP can reduce duplication and costs, reduce risk, enhance functionality, and improve service delivery by agencies. It is evident, however, that in practice it rarely happens. For example, each state continues to develop its own systems for driver's licences or e-Government systems, and every public hospital across Australia will have at least one unique IT system that it has developed in isolation. Sharing information is considered either too difficult or not a priority. Why?

A National Information Sharing Strategy (NISS) has been endorsed by the federal and state governments through the Online Communication Council and is driven by the Australian Government Information Management Office (AGIMO). The NISS has as its aim the effective sharing of information across agencies and jurisdictions. The primary focus of the NISS activity (as tabled at previous OCC meetings) is centred on spatial data and interoperability between disparate systems. While geographical data exchange is critical to many industries and as a consequence government service outcomes, the identification, discovery and sharing of additional intellectual assets (IP) related to service delivery programs takes the innovation in government opportunity further. Information is data put into context, and knowledge is information put into application. Innovation results from the application of knowledge, not simply data. Understanding what intellectual assets – applied knowledge - reside within government is the first step to enabling a more rapid exchange of critical content, compared with a focus on technical interoperability that may prevent effective information sharing on the basis that two systems are not or may not be the same.

IP in government includes existing copyright-specific intellectual assets created and owned by government relating to:

- a. Software applications and algorithms (such as predictive tools)
- b. Business processes and methodologies
- c. Policy documentation
- d. Training content
- e. Data (non-personal data with no privacy implications)

Through its commercialisation activity, the AIC has identified a number of barriers that need to be addressed before effective sharing, and therefore reduced inter-jurisdictional duplication, can occur.

These barriers are:

1. **Problems of discovery.** Unlike traditional IP auditing processes, a discovery process is required to uncover IP that can not be readily and easily identified. Importantly, this process needs to be undertaken by a trusted, neutral third party organisation in order to be effective.
2. **IP Repository.** Once IP has been identified and captured it needs to be recorded in a centrally accessible repository for ease of searching across all government participants.
3. **Ownership reviews.** Once IP is identified a review needs to be performed to ensure that the IP being made available for sharing is in fact owned by Government.
4. **Requirement for a common, easy to use and readily accepted intellectual property regime across all jurisdictions in government.** The situation at present is that to share IP, jurisdictions either need to enter into a project-specific licensing agreement representing significant investment in time and cost for the agencies involved), or worse the provision of IP with no license (significantly imparting new levels of risk and liability).
5. **Awareness and education.** One of the critical success factors for effective IP sharing is educating government personnel on how IP assets should be managed as an asset. More importantly however, education is also needed in order to shift perceptions from one where IP management is an operational burden to one that can deliver real, tangible operational benefits at the business unit level within government.

Because it has successfully worked with nearly ten government agencies to commercialise their IP, the AIC has developed proven frameworks and tools to overcome these barriers. These solutions can also improve the sharing of intellectual assets between governments and improve their innovation performance and efficiency gains. However, such solutions require whole-of-government leadership and proper resourcing and funding to be truly effective.

II. Proof of Concept R&D activity.

One of the features of the traditional procurement process across government is that it provides very little flexibility to address innovation, particularly in relation to projects with higher than normal technical risk.

While agencies will often enter into research projects with public sector research organisations, such activity is often totally distinct from leveraging collaborative research activity to address short term operational needs where technical risk is present.

As a result, projects involving future investment often stall because they can neither overcome these technical hurdles nor clarify the functional requirement for procurement in the market. At the same time, if such projects are considered in the context of the traditional procurement process, agencies tend not to adequately engage with industry to seek novel solutions (often to technical problems already solved). Figure 1 below illustrates the chasm that emerges in the traditional and generic project management approach to procurement common across governments.

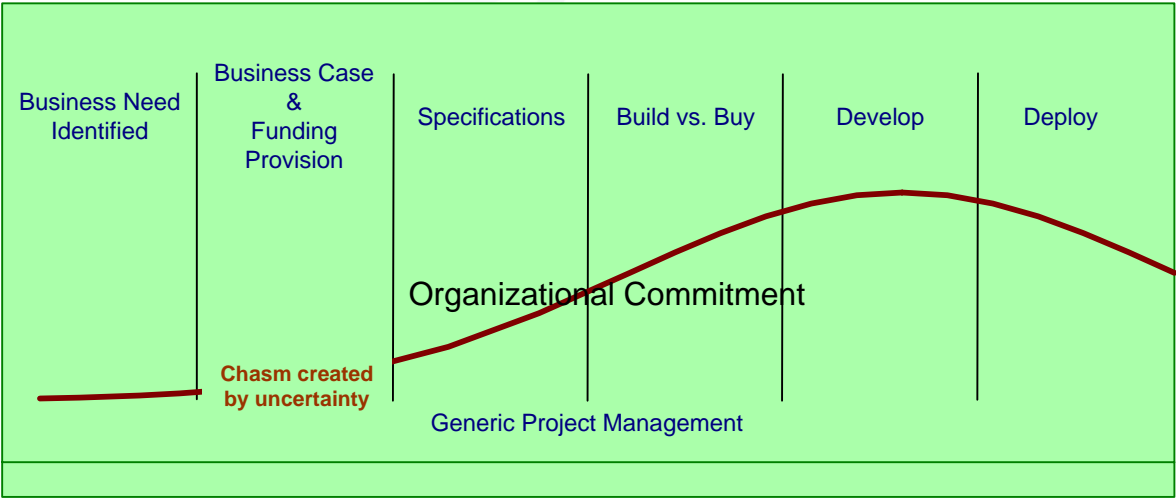


Figure 1. The traditional government approach to procurement, showing how high risks in the early project stages can prevent an innovative solution being developed.

To address this challenge, some agencies (such as Queensland Health) are now embracing an approach that fosters the adoption of the AIC's Collaborative Research & Development Framework – adopting principles of research collaboration to create innovative, proof-of-concept pilot projects. Importantly, such an approach is one that implements principles of flexibility and rapidity to find solutions which can directly inform (but is external and separate to) the procurement process. As can be seen from Figure 2 the adoption of a collaborative R&D framework approach, can deliver one of two outcomes for the agency:

- i. The pilot project outcome essentially fails but has been useful in addressing all or some of the technical problems identified as being barriers to progression – as a result speeding up the project by informing the procurement process (that is, being able to create functional specifications); or
- ii. The pilot project outcomes are a success in delivering real, quantifiable and measurable business benefits for the agency. In this scenario, if the new intellectual property created through the research activity is at least partly owned by government, then a justification exists to move straight into deployment. However, it should also be noted that there should not be any obligation to do so and that if it is deemed appropriate to still go to tender, the agency is free to do so.

The AIC's Collaborative R&D Framework provides the legal framework and business processes to satisfy priority requirements and reduce the risks through proof-of-concept activity external to the procurement process. This process requires more risk to be taken by industry and as a consequence requires less time in the purchasing process by government.

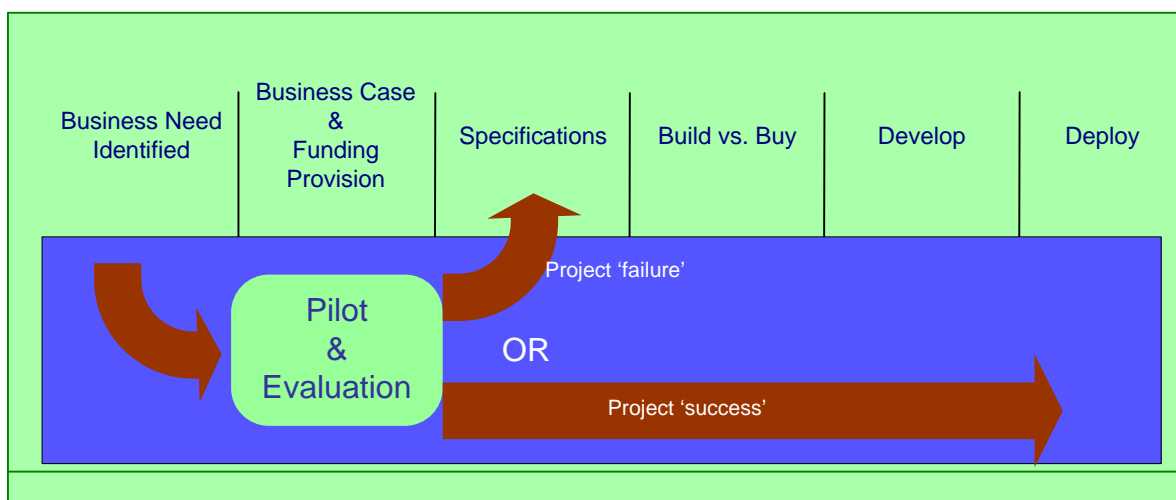


Figure 2: An innovative government approach to procurement, showing the possibility for early-stage collaborative R&D with industry to inform the specifications and thereby reduce the risk, while enabling innovation solutions to be considered.

It is worth noting that the collaborative R&D process is completed within a 12 month period and has the flexibility to address both short to medium term procurement needs of government.

A longer R&D process is applied to broader strategic blue-sky procurement outcomes that are usually associated with longer-term needs such as climate change technology. In this case an AIC R&D Technology Clinic process is used and engages government, industry and the research/university sectors to meet more challenging procurement needs.

Example: Benefits of pre-procurement Collaborative R&D Projects

In the case of Queensland Health's (QH) Regional Emergency Care Collaborative (RECC) R&D project, the need for a proof of concept preceding procurement was identified immediately. The project seeks to implement vital signs monitoring technology to support a QH Coordinated Care Centre trial which involves emergency response, clinical management, and patient transit decisions and underlying systems connectivity between service partners. The project involves Queensland Health, Queensland Department of Emergency Services, Royal Flying Doctor Service, Careflight, and other collaborators. The project sponsor recognised the need for further clarity around project parameters which involved collaboration with numerous government and non-government service partners in building a new service model.

Projects such as RECC lend themselves well to collaborative R&D exercises, with industry and research sectors taking a shared approach to cost, risk and IP. The RECC project demonstrates:

1. Multiple service partners with various operating models, requirements, and current project activity;
2. Potential to leverage off know how, expertise, and current business systems (IP) across service partners;
3. High technical risk of implementing enabled technology that will be adopted by all service partners to achieve coordinated end-to-end emergency care; and
4. Ability to introduce industry / research partners to provide technical expertise and capability, and to share risk and resourcing.

To this end, the RECC project is not seen as a technology project but rather a pilot to develop and support an operational service model supporting coordinated emergency response and patient care in rural and remote settings. The value of a workable model being trialled and tested in this way, means that service delivery outcomes can be validated to support further funding submissions, and implementation decisions for Queensland and potential nationally, as well as provide a commercialisation opportunity to industry partners

for broader implementation both nationally and globally. If the project is unsuccessful, the government and other service partners will be further informed about service model requirements and investment requirements moving forward.

The project is being managed via the AIC's Collaborative R&D framework which has been adopted by a number of government agencies for these projects. In doing so, this provides the management process and capability to enable innovative projects and mitigate risk in "proof of concept" trialling prior to significant commitments being made by Government. The RECC project is currently its initial phases but provides an example of the potential of the approach.

The innovations that will be established by this model are that RECC will:

- Establish best practice use of monitoring capability in hospitals and acquire evidence of direct value and alignment to justify extending the capability into all Queensland regional hospitals and its possible use in other transport and remote settings.
- Consolidate the developed model generated from the project (new IP) so that it could be replicated at a national level, potentially evacuating people from adverse events in Asia, and even used internationally.
- Demonstrate increased customer value by providing measurable and reportable improvements in patient outcomes

CONCLUSION

To conclude, the AIC considers there are three main areas that can encourage innovation from, within, and by government. These have been generally overlooked in the classical approaches to the policy work in economic development:

1. **IP Commercialisation** from government into local industry, to support a more innovative industry, particularly in relation to government ICT.
2. **IP Sharing across jurisdictions and agencies** to reduce duplication, provide cost and time efficiencies, and enhance the knowledge economy;
3. **Agency-industry-research collaborations for proof of concept evaluations** to inform investment decisions by government.

The AIC can play a significant role in these areas as a neutral, 'arms-length' trusted party to facilitate and enable these areas of innovation by government. However, it requires dedicated leadership, commitment and resourcing across government to achieve.