Intellect paper on
Supplying Software to Government

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1. How can government make better use of software suppliers?

a) Introduction

Speaking at the Intellect Government Group on 8 May 2008 Andrew Stott challenged industry to provide constructive feedback on how government can make better use of software suppliers. After the meeting Intellect established a small working group, which was tasked with producing an initial paper collating a range of views from across industry. The first question that the working group considered was what better use of software suppliers really means, and suppliers questioned whether the 'exam question' had been intended to refer to less expensive software, reusing software, stimulating innovation and/or improving SME access to public procurements.

This document provides an overview of what some Intellect members identified as some of the critical issues, and outlines some of the opportunities and challenges. The intention is not to provide a definitive answer to a very complex question, but rather to stimulate discussion and provide a range of views from across industry that can be taken into consideration as part of ongoing engagement.

What do we mean by software?
Given the nature of the industry, members of the working group felt that it was important to avoid a narrow interpretation of software and rather to consider it as encompassing all of the following models: commercial off-the-shelf (COTS) products, bespoke solutions, software-as-a-service (or as part of a service package) and outcome-based solutions that incorporate change management.

b) Current situation

The most recent Transformational Government Annual Review, which covers the period from January 2007 to January 2008, shows data relating to the IT expenditure in 2006/7 for those parts of the public sector represented by the CIO Council. The total comes to £13.234 billion. While the report shows that the government has made real progress towards delivering the strategy and advances in using technology to improve the delivery of public services to citizens, there are considerable challenges ahead.

As it currently stands, the public sector market appears to some members to be dominated by a number of large suppliers while others face substantial barriers to entry, and this creates the perception of an inelasticity of supply that they believe needs to be addressed. Delivering the objectives laid out in the Transformational Government Strategy and achieving value for money, it was suggested, will require new ways of engaging with industry and a different approach to software procurement: an approach that encourages rather than constrains the delivery of best value and innovative solutions.

The members of the working group tasked with producing a response to the 'exam question' identified a number of priority issues that they believe if addressed, would have a positive impact on the value that government gets from the software it procures and the suppliers that deliver it.

- Procuring authorities can seem to believe that public sector processes are substantially different to those employed elsewhere and require bespoke software solutions rather than generic or Commercial Off-The-Shelf (COTS) products. This apparent belief – combined with the view that generic software will not be flexible to changing requirements – can lead to the commissioning of expensive bespoke solutions that risk becoming part of the legacy estate in the future, since evolving them can put mission critical processes at risk. The reuse and collaborative procurement agendas are, however, going some way towards changing this.
- The process that procuring authorities undertake to determine their software requirements does not always involve the intended users, which can lead to the development of solutions that do not have user buy in. The current process tends to focus on what requirements are *needed*, whereby both functional and non-functional requirements are considered essential, rather than there being a more careful consideration of the distinction between the 'must haves' and 'nice to haves'. However, Invitations to Negotiate (ITN's) often include mandatory and desirable categories, and the competitive dialogue process also addresses such concerns when it is employed.

- A tendency for public sector organisations to want to address big issues often leads to a 'boiling the ocean' approach and the creation of large projects and programmes, where it is difficult to articulate the requirements clearly, and where there is little or no acceptance that they are likely to be subject to change as further iterations of the system are delivered. The widespread application of the Pre-Qualification Tool (PQT) should help to avoid these problems.
- Anecdotal evidence from members suggests that in some cases innovative solutions (including those from SME's) are adopted by bidders to win government contracts, but that the innovative solution is substituted part way through the contract. In many cases there are likely to be good operational reasons for this. However, increasing visibility of the whole supply chain would help to ensure that innovative solutions are delivered (and would be consistent with the objectives of the Glover review, etc). The appropriate use of subcontractors can be dealt with, at least partially, through the application of the Joint Statement of Intent (JSI).
- The UK appears to trail behind other European countries when it comes to the adoption of Open Source software.

c) What do we think the answer is?

Intellect and its members believe that a more holistic approach to Transformational Government is required: one that enables the government to take a strategic approach to procuring solutions. Earlier engagement with industry at the earliest possible stages can help to open up the market and provide a channel to generate more innovative software solutions and allow these to channel into government. The application of existing initiatives like the Pre-Qualification Tool (PQT) and Concept Viability are certainly helping to do this but will need to be more rigorously applied if they are to reap benefits across the wider public sector.

Different circumstances necessitate different approaches to procurement. In some cases bespoke solutions will be required; in others bulk purchasing is the best means of securing value for money. We believe that there should be a closer examination of government's drivers and how they operate. This will ensure that there is a clearer understanding across the public sector as to the impact these drivers have on the types of software solution that are procured (eg, COTS versus bespoke). Clarity around these drivers would help to ensure that the government has a clearer understanding of what it is trying to achieve and help it to articulate this vision, rather than presenting a 'fixed view of the world'. This degree of flexibility would create an environment where the size of prospective projects and programmes could be carefully considered, and where necessary challenged, thereby helping to avoid the 'boiling the ocean' approach – again more widespread initiatives like the Pre-Qualification Tool (PQT) and Concept Viability will help to achieve this.

Furthermore, allowing the whole supply community to have a long-term view of the software solutions that are needed to support the aim and objectives of the Transformational Government strategy across the public sector will enable the market to align itself accordingly. This should help to ensure that a broad range of suppliers are willing and able to tender, thereby guaranteeing a good degree of competition, which itself will stimulate innovation.

Ultimately many Intellect members believe that there needs to be a more co-ordinated strategy – one that takes into account the various government initiatives (including things like the Glover review of SME access to public sector markets) – to ensure that there is a concerted effort to integrate the Transformational Government Strategy with the whole software supply chain.

2. End-to-end engagement

a) The value of end-to-end engagement

How does end-to-end engagement with industry differ from existing practices?

The current engagement process means that industry receives little insight into the public sector's software requirements before official procurement notices are published. Furthermore, the majority of procurements are conducted by individual government departments, agencies and authorities, and there is a demonstrable lack of joined-up thinking.

A more end-to-end approach would involve a greater degree of openness and transparency from government which would encompass policy-making, consultation, procurement, and implementation and delivery right through to benefits realisation.

How will end-to-end engagement help government to meet the objectives of the Transformational Government agenda?
Enabling procuring authorities to work together within a new method of engagement would help to ensure that the opportunities presented by the Transformational Government agenda are fully recognised and that any challenges or barriers are identified early and within an environment that contains a breath of experience and expertise that can be brought to bear to tackle them.

Why will end-to-end engagement help the government to manage its risk better?
While the public sector can outsource a great deal to suppliers, ultimately it cannot outsource the risk it carries - regardless of any attempts to do so with the use of unlimited liability clauses. This is particularly true given the need for public accountability and continuous public service delivery. However, under the right conditions industry can help the public sector to manage risk.

A new engagement model for the whole supply chain would help to create an environment in which the public sector can develop a more mature understanding of risk in all its forms, including reputational risk. A common understanding of what is meant by risk can help to stimulate more creative solutions to the issues that it presents.

b) Phase I - Early engagement
What will a more strategic approach to procuring software involve at the early stages?
Early engagement is a critical area that Intellect has been focussing on, helping to develop initiatives such as the Pre-Qualification Tool (PQT) and Concept Viability. Ultimately, a strategic approach to procuring software should involve:

- a better way for the public sector to understand which products and services are available, which are appropriate for different circumstances, and how the various options impact risk factors and their management (using the right advice from truly impartial advisers)
- the participation of consultancy firms who act as departmental 'advisers' who need to stay abreast of market developments in order to be able to provide appropriate advice and who may otherwise remain unsighted on innovation and the art of the possible.
- a suite of tools, methods and processes to help people in different roles understand and articulate what it is they are looking for
- improved cross- and inter-departmental communication to identify opportunities to buy in bulk or as bespoke solutions
- a more mature approach to intellectual property concerns in contracts
- greater clarity for industry (including new entrants at tiers 1 *and* 2) around the vision that government is trying to achieve, including:
    - more openness and honesty about what it is buying and plans to buy in the longer-term
    - the purpose behind what it is buying and planning to buy
- incentives for suppliers to take risks, develop innovative solutions and demonstrate positive results in an environment that allows successful software solutions to be noticed and considered

c) Phase II – Pre-procurement
What should engagement involve pre-procurement?
An engagement model that includes the use of the PQT and Concept Viability service should ensure that before the public sector goes to procurement it is clear about what it is looking for, whether this should be procured as one large project or programme, and whether it would be sensible to split these into smaller, more manageable procurements. More generally, the greater the clarity suppliers have at this stage the better they will be able to offer innovative solutions. This vision should also be clearly communicated throughout the procurement process and implementation phases.

d) Phase III – Procurement

Government needs to be aware that it is very difficult for industry to collaborate during this phase and this serves to highlight the importance of early and pre-procurement engagement.

Members felt that the procurement phase would benefit from a methodology that enables customers to better understand what the 'must haves' for the project requirement are, along with the 'nice to haves' and what the relationship between these is (particularly in terms of the costs associated with development work). It is likely that in many cases the 'must haves' can be accommodated by COTS products, whereas the 'nice to haves' will require the development of bespoke solutions that involve additional costs. A lack of clarity from procuring authorities as to how the requirements fit these categories can mean that suppliers have no alternative but to take the bespoke route. However, applying Pareto's law can be useful since around 80% of functionality is delivered by 20% of the costs and more generic solutions can mean that the 'must haves' are easier to deliver fully. Where generic software is suitable then it should be carefully considered, and there should be clear mechanisms that allow such software to be incorporated into the overall solution. The use of agile methods should be considered - application of the appropriate techniques should make it easier for public sector organisations to manage the delivery of ICT projects and programmes in an environment that is subject to uncertainty and change.

The use of dynamic procurement models should help to ensure the options and their implications are clearly defined and understood, but more remains to be done. It is also important that there are appropriate contract vehicles available, particularly for COTS solutions where contract terms designed for service outsourcing, systems integration and bespoke software development are not suitable and are an inhibitor to the successful delivery of value for money solutions. Using the most appropriate contract vehicles will ensure that there is a partnership approach to project and programmes: one that enables collaboration between customers' and suppliers' teams who are able to work seamlessly together to achieve successful delivery in an environment that makes mutual skills transfer possible.

There are relatively few instances (particularly for smaller projects) where procuring authorities gain a competitive advantage by owning the intellectual property developed for a particular project. Intellectual property (IP) developed for a specific project is often, in practical terms, useless on its own except as a mechanism to prevent re-use by other customers of the supplier. Allowing suppliers to retain and exploit IP will stimulate innovation, increase suppliers' willingness to engage with the public sector and ultimately leads to the development of more software products and services which are more easily supported and have a greater chance of wider market acceptance. The use of Open Source by governments in Europe demonstrates that IP ownership is of little relevance to procuring authorities.

The people aspect of 'business transformation' also needs to be taken into account. Products with an active user community contributing suggestions to the development roadmap of the products are often more sustainable and successful in the long run, as well as proving easier to upgrade, avoiding hidden and unplanned costs for the customer on upgrade, and avoiding compatibility issues between modifications and base code.

e) Phase IV - Programme delivery

Ongoing reviews of contracts should be conducted to ensure that projects and programmes are on track to deliver on the objectives and are in accordance with the Transformational Government vision.

3. Conclusion and recommendations

Wider use of a model of industry engagement that incorporates early engagement would help to ensure that government develops a better and broader understanding of the solution-implications of its software requirements. In this way best value can be delivered and innovation can be targeted where it can really make a difference (rather than encouraging innovation for innovation's sake).

The members that participated in the working group that produced this paper identified a number of recommendations.

- Developing a more coordinated approach across the public sector that takes into account existing and planned government initiatives that are related (such as the Glover review of SME access to public sector markets) and which integrates the Transformational Government Strategy with the whole software supply chain.
- Commitment by both government and industry to work together to develop an end-to-end engagement process that begins to address some of the issues highlighted in this paper. The creation of the Strategic Supply Board and the associated engagement between the government's CIO Council and the Intellect Public Sector Council has marked a considerable step forward. Significant progress has already been made by these bodies and future engagement should be built on this success.
- Closer examination of government's drivers, how these operate and what impact they have on the types of software solution that are procured (ie, COTS and bespoke), including further work on how requirements are developed and categorised. However, this would be a considerable undertaking and there should a careful examination of the benefits should be conducted in advance.
- Embedding an approach to procurement which includes 'open days' and more frequent (and earlier) use of Concept Viability workshops.
- Supporting more open forums where government can learn about industry's capabilities, and where government and industry can collaborate to establish the requirements for software procurements eg, software innovation centres on a similar model to those at Warwick.
- Providing tax uplift for R&D thereby allowing suppliers to more freely develop creative solutions: this approach proves less costly than direct investment in R&D from the public purse.
- Opportunities for the whole supply chain to become involved in funded pilots and proofs of concept and/or competitions (sometimes referred to as bake-offs) to generate solutions and costed proposals over a limited time frame (eg a few days). Initiatives like this are already beginning to be adopted/used by some organisations (eg the Insolvency Service). This approach could be more widely applied across the public sector and there should be an opportunity to disseminate the learning.