Submission No 7

PROCUREMENT AND MANAGEMENT OF ICT SERVICES IN THE NSW PUBLIC SECTOR

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Inquiry into procurement and management of ICT services in the NSW public sector

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1 Executive summary

Over the last decade, the degree of ICT complexity, massive take up of the internet and an insatiable appetite by users for mobility and innovation, has outstripped the traditional structure of the CIO's branch and its ability to deal with change.

ICT as a service industry is a victim of its own success. The latest innovations in applications and cloud computing provide massive opportunity for operational improvement, however these innovations are not able to be prioritised while IT areas are also supporting legacy applications, systems and procurement models.

ICT projects, often attempt to introduce proven technologies from the market, but get bogged down dealing with end users and/or ICT Business As Usual (BAU) areas, that are unable or unwilling to take on the changes that the projects introduce.

The capacity gap between what ICT projects are responsible to deliver, and what the BAU teams are responsible to provide (for) the project, and on an ongoing basis, is the root cause to why projects struggle and the real challenge for business leaders and sponsors is identifying where accountability lies.

Systemic issues like these are fundamental reasons why project management is deficient and why data migration projects consistently under perform. Traditional ICT contract management was built to support internally managed, on-premise deployments of ICT systems and applications. ICT contract management has not yet evolved to support ICT services engagements with the plethora of emerging applications and services being offered today via "the cloud".

This submission looks at a number of factors and suggestions on how to improve ICT project delivery including:

- Process improvements and benefits realisation
- Cultural and behavioural challenges
- Performance measurement

There are at least four megatrends that are impacting (and will forever) change how ICT is deployed:

- Mobility
- Social networking
- Cloud computing
- Big data

The submission provides the Committee with some further insight into cloud computing from secure data centres, and the implications of delivering results in this environment.

2 Introduction

2.1 Background

The NSW Parliament Public Accounts Committee is conducting an inquiry into the procurement and management of ICT services in the NSW public sector.

The Committee will inquire into and report on issues arising from reports by the Auditor-General on the procurement and management of information and Communication Technology (lCT) by NSW Government Agencies. In doing so, the Committee will have regard to recent procurement reforms and the three major weaknesses identified by the Auditor-General as leading to failure in ICT
project delivery and ongoing project management:

1. deficient project management;
2. poorly guided and managed system migration and data conversions; and
3. poor contract management

The inquiry will focus on:

i) Measures to improve ICT project and contract management in the public sector, in particular in relation to contract negotiation and on-going contract management;
ii) The efficacy of central agency policies and strategies that guide lCT projects in the public sector;
iii) The adequacy of risk management and corruption prevention strategies relating to lCT procurement and contract management;
iv) Long-term planning to meet the lCT needs of the public sector and ensure the best value for money in the procurement of government ICT products and services; and
v) Any other related matters

This submission will refer to each of the three major weaknesses identified, with an emphasis on:

- Systemic issues in ICT management
- Process improvement and benefits realisation
- Cultural and behavioural drivers
- Performance measurement
- About cloud computing
- Delivering results

Where relevant, this submission will provide recommendations to support the focus of the inquiry.

3 Systemic issues in ICT management

3.1 Background

Many ICT personnel that joined the industry in the 1980's and 90's experienced the growth period of in-house, on-premises application development and infrastructure (systems) integration. Policy and security procedures were established, structured infrastructure and application teams etc were normalised into what we colloquially call the "IT branch" or "IT area", traditionally headed up by the IT manager or a Chief Information Officer (CIO) in larger organisations.

However, over the last decade, the degree of complexity, massive take up of the internet and an insatiable appetite by users for mobility and innovation, has outstripped the traditional structure of the CIO's branch and its ability to deal with change.

From a business perspective the last decade has seen a gradual decline in service levels delivered by ICT, increased costs for developments and ICT projects taking longer. An army of business users has emerged, asking why even the most minor request for changes to IT applications take so long, cost so much or simply remain unaddressed.

3.2 ICT is trapped by its legacy systems

ICT as a service industry is a victim of its own success. The latest innovations in applications and cloud computing provide massive opportunity for operational improvement, however these innovations are not able to be prioritised while IT areas are also supporting legacy applications, systems and procurement models.

Users and IT departments are trapped in a maintenance "status quo".

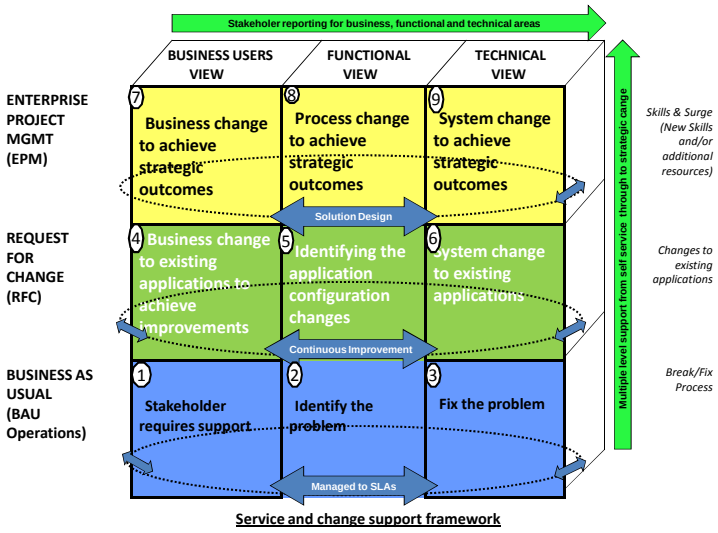
It has taken over 20 years to build the structured Business As Usual (BAU) environments that manage the ICT budgets and engage with industry (system integrators, contractors, outsourcing etc). There are numerous teams of specialists required "to keep the lights on" at most on-premises ICT environments. Systems architects, infrastructure and network technicians, communication specialists, application developers, firewall and security experts, desktop, web management and so on. Indeed the layers of specialisation and complexity is such that even senior systems integration experts struggle to integrate all the inter-relationships associated with running ICT BAU.

This complexity with BAU was recognised by the private sector early on, so with the introduction of ICT server (infrastructure) virtualisation and economies of scale of data centres, commercial organisations have been gradually "buying ICT services" rather than buying infrastructure (assets) and developing ICT solutions in-house. However, with relatively secure IT budgets and no incentive to create efficiencies, this transition to "buying services" and shifting a results or outcome based culture has been relatively problematic for the public sector compared to the private sector.

3.3 Stalled innovation – BAU versus projects

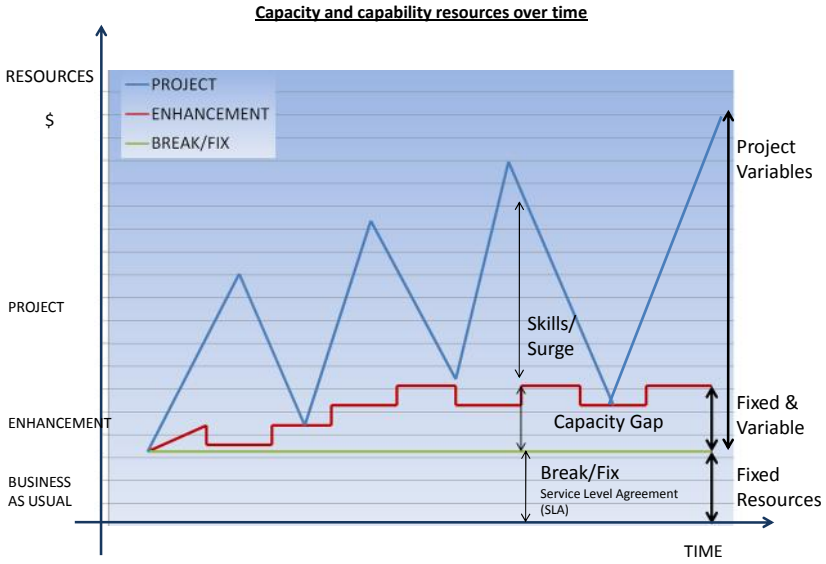
Vivek Kundra (former CIO of the White House) in his recent visit to Australia for the AIIA Industry Summit "Navigating the Cloud in Australia" Conference in February 2012, highlighted that over the last 10 years, while, the US citizen was getting increasing online services from the private sector, the citizen's experience dealing with the Government sector was quite a different. Innovation had stagnated and his observation was that the "win" by ICT industry was the sale to Government, and not necessarily a win for the stakeholders. Kundra also observed that the larger the ICT department, this meant more power and there was no incentive to rationalise.

Fundamentally, there is a cultural dynamic to maintain the status quo of the structured BAU environment owned and managed by the CIO. This BAU structure is unable to readily change to support ICT innovation.



ICT projects, often attempt to introduce proven technologies from the market, but get bogged down dealing with end users and/or ICT BAU areas, that are unable or unwilling to take on the changes that the projects introduce.

IT departments struggle to justify their value proposition and the user community has become increasingly frustrated "paying more for less". At an individual level, ICT personnel genuinely want to be more relevant, but are consumed with “keeping the lights on” and/or trying to keep users happy with the highest priority innovation/improvements while they already have a full dance card.



The capacity gap between what ICT projects are responsible to deliver, and what the BAU teams are responsible to provide (for) the project, is a root cause to why projects struggle and the real challenge is identifying where accountability lies.

Business leaders need to focus on "what" they want to achieve and measuring the benefits realised and not get caught up with the service delivery aspects of "how" the ICT solution will be delivered. In other words, business sponsors of projects recalibrate "what" outcomes and outputs are required, leaving ICT to focus on "how" this will be achieved. The challenge is establishing the incentives to ensure delivery of outcomes.

The key, is to baseline outputs so that measures and accountability can be introduced to ensure results over time and improve the value proposition.

Baselining the Service Level Agreements (SLA) offered by ICT (contracts) to business areas is fundamental to getting a grip on what it costs BAU areas to deliver those services.

The issue has been that ICT budgets have many integrated layers and costs such that business leaders struggle to understand what discrete costs relate to which ICT service. Since there is no incentive to do so, ICT areas in the public sector do not, as a rule, provide Total Cost of Ownership (TCO) for each discrete IT service. If however TCO was provided, the true cost of delivering an IT service or business function would be itemised. In this way, project variations that relate directly to new IT functions would be is immediately traceable and not lost in the total ICT budget.

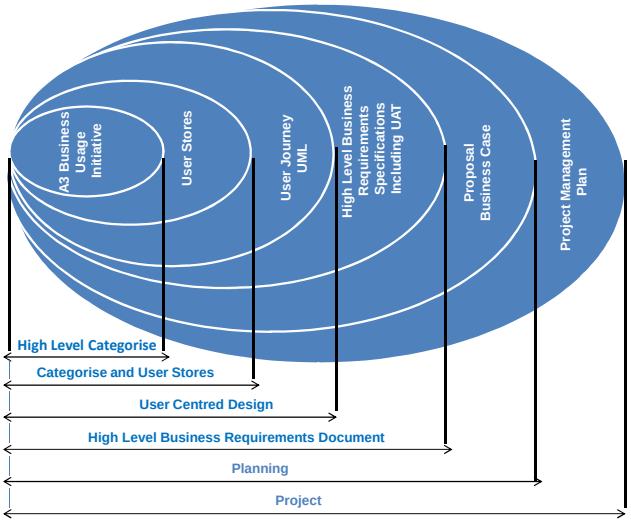
To emphasise this point, imagine the impact on the decision making process if a transport company was trying to estimate what it should charge customers if it used a cost base of say,

only $ 0.10 per litre of fuel in its calculations. The TCO of the business function (ie "to deliver" goods), would be grossly understated. Once the real costs of fuel were accounted for, obvious losses would result. In the same way, ICT areas consistently underestimate TCO to deliver an IT capability in projects. Then the real costs become realised and the result is time delay (using BAU resources to soak up the overrun) or higher project costs through contracted resources.

3.4 Change management

Game changing "virtualisation" technologies in secure data centres, plus economies of scale and more productive supply of infrastructure as a service, and improved service levels, provide a watershed opportunity for the government to "manage a service" and focus on the real business of government (ie providing business outcomes - not managing ICT).

Greater use of Unified Modelling Language (UML) methodology to bring visualisation (ie storyboarding), analysis of personas (ie the different users of the systems), can provide a "day in the life of" an end user – applied using the current system and then what things might look like using the new system.



So often users (and that's all of us) don't know what we don't know. This is especially so when it comes to new systems. Effective change management is about moving users from their current BAU state (with current systems) to new BAU state (with new system). The project needs to address the "transition to BAU" post new system deployment. In other words, the change management elements of the project need to continue after user acceptance testing.

> ***The real test of a successful project is more than time/cost/quality. The benefits to users, as a result of a project delivering on its outcomes, must be realised to claim project success.***

3.5 Application architecture and data management

Where is the single version of the truth? With the introduction of new systems, the

fundamental mistake that is made is creating new master records, instead of capturing the data once and using it many times across multiple systems. Unfortunately, users, stakeholders etc all become slaves to the systems and often have to enter the same data in multiple times because systems were developed in isolation.
See standard business reporting https://www.sbr.gov.au/content/public as an excellent example of multiple areas leveraging data for the benefit of the citizen and stakeholders dealing with Government.

The positive impact of concepts like http://data.nsw.gov.au/index.php?p=ap is another way to shift to innovation adoption which is the ultimate reward for a change management culture.

In the future, the approach would be to track the "journey of work" and "a day in the life of" various service practitioners (in health, in police force etc) to track these personas, the processes and system "touch-points". Also look how they engage with different systems (including the feral, unofficial systems on their PC's – bought with a credit card over the internet). Business leaders may be quite surprised just how work is needed to be done outside of the enterprise "official" applications.

The aim of this approach should be to streamline the touch-points, reduce complications and bottlenecks and increase usability. This UML approach also better defines "what" stakeholders want/need and better manages their expectations of ICT and likewise the services ICT provide to users.

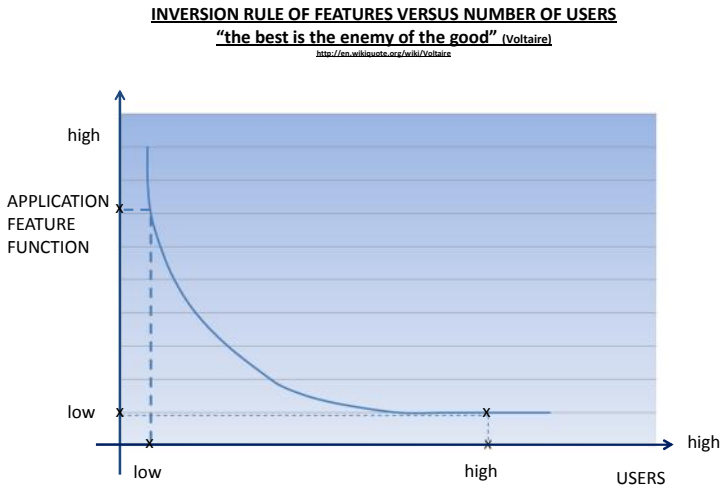
3.6 Symptoms of an ICT structure struggling with change

Here are several symptoms, typical of an ICT environment that is struggling to cope with constant change and user demands:

- High cost of ICT and insatiable budget demand
- Users lack of confidence in the value proposition of current ICT investments
- Restrictive security policies that are poorly applied for security purposes but are hampering innovation, work flexibility and productivity
- Continuing to deliver IT as DIY with "in-house" resources
- Users forced to engage only with their IT area - who are unable to meet the changing business users needs
- Duplication of data entry across multiple systems or the same data being asked for several times by different areas
- Reduced formal IT personnel headcount but increasing dependence on contractors, service providers, consultants, systems integrators

There is overwhelming evidence that traditional procurement processes favour the selection of complex applications with high feature/function. These applications traditionally score well in the tender process "to meet every need". These systems however invariably require deep ongoing support from ICT specialists (with associated whole of life costs). Unfortunately, the vast majority of users, who only need a few feature/functions, are left overwhelmed by these systems, that often lack useability benefits, or worse, their business needs have changed and the systems no longer support their work requirements.

Please see my inversion rule below, which shows this imbalance of application engagement by different users. As Voltare said “the best is the enemy of the good”.



3.7 Other influences

- What is the cloud computing strategy for all NSW Agencies?
- Review the data centre (cloud computing) strategy and migration
- Address and resolve security impediments to innovation
- Ensure the impact of Privacy Act and freedom of information is supporting data access and appropriate availability and release of data.
- Review the impact of the four future megatrends:
  - Mobility
  - Social networking
  - Cloud computing
  - Big data

4 Process improvement and benefits realisation

4.1 Change management in ICT BAU

Once BAU levels for both cost and service has been baselined, the change requirements in the organisation will need to be met (as nothing stays static). Change can come in the form of, a business change initiative, IT functional change request, approved spending initiatives, proposals or business cases leading the new projects. All activity that is outside of the BAU baseline needs to be costed and tracked like a project.

> *Change management (driven by organisation), process improvement (efficiency and effectiveness) and benefits realisation (value recognition measurement) are the key dynamics for projects that are "successful"*

Once the initiative is complete, re-baseline of the service level for the business function might be adjusted for a new performance measure and the updated costing is likely to impact on the BAU budget (estimate is part of the initiative).

Resource planning, initiative interdependency and cost impacts are able to be tracked as part of the non-BAU body of work brought about by change.

Recommendation

Ensure all non-BAU activity is tracked like a project so that the journey of BAU to project, and then to new BAU state can be managed and benefits realisation measured.

4.2 Project Managed Organisation (PMO) Accreditation

It's a great initiative to develop a competency and certification framework for Project Managers to drive greater accountability and governance of the change. After all, projects represent the most significant component of change expenditure and business leaders demand higher levels of governance and transparency. However, if the organisation leadership doesn't have an effective and consistent project and portfolio management framework in place, then the skills of the certified project manager can be unnecessarily wasted.

Consider introducing a project managed organisation (PMO) accreditation from Australian Institute of Project Management (AIPM):

- Project Managed Organisation (PMO) certification is an assessment-based accreditation program to recognise organisations which have embarked on a process to continually improve their project management capabilities on an organisation-wide basis
- A PMO is required to fulfil the recognition criteria, and has a process in place for continued improvement
- As a benchmark, the endorsement of the AIPM gives surety to internal and external stakeholders that NSW Agencies have in place appropriate structures, methodologies and training etc for achieving successful projects, consistently.
- Recognition across NSW Agencies that it is a project managed organisation and has achieved recognition from the peak body for project management

- Accreditation greatly assists in communicating to other departments and stakeholders what an Agency is doing, and its value to the organisation generally.
- Continuous improvement in PMO fosters the message to the Agency's stakeholders that project management is a specific skill requiring trained and competent personnel.

The recognition criteria are as follows:

- Organisational Leadership and Innovation
- Organisational Strategic Planning Link
- Organisational Business Results Focus
- Organisational Customer and Market Focus
- Organisational Support Processes
- Data, Information and Knowledge Availability
- Human Resource Management Alignment
- Consistency of Application of PM Functions

Recommendation

In conjunction with the PMO Accreditation from AIPM, introduce a Benefits Realisation Framework. This framework tracks the outcomes/benefits of projects from business case inception through to delivery and into BAU. This linkage ensures that the benefits of project outcomes are linked to strategic objectives set by the NSW Government.

5 Cultural and behaviour challenges

5.1 Cost transparency

Traditionally, ICT areas operate as an absorbed cost model where a wide range ICT resources (people, processes, technology) and capability is required to deliver a range of business user functions such as email, file servers, applications, internet etc.

Unless ICT areas have cost transparency and know the total cost of ownership (TCO) for each discrete IT function that is supplied to a business user, then when new IT functionalities for business are added (i.e. additional applications/systems, enhancements or request for change to existing systems), they end up getting absorbed within the existing ICT resource pool. In other words, ICT becomes a black box and it becomes increasingly difficult to know what the increased expenditure is paying for.

The problem with the absorbed cost model

- Significant on-going investment without economies of scale (to spread the investment), particularly on-premises infrastructure;
- Prioritisation of investment is difficult as “all business requirements” are important for business continuity, backups etc.;
- A capacity gap becomes evident because it is very difficult for a fixed staff level in ICT to meet a variable workload. Delivery delays (i.e. until resources are available) is the most obvious sign of a capacity gap;
- Managing the variable workload in the absorbed cost environment is often addressed by funding the capacity gap (i.e. through spending initiatives) which actually permits inefficiencies through oversupply of resources over time. This is often preferred politically rather than not have the skill/capacity in place to meet demand and;
- If the capacity gap eventually becomes funded as part of BAU the temp contractors become absorbed, which adds further to the total overall sunk costs (and explains why costs like these are hard to unravel).

Basically, additional spending initiatives are inevitably required to keep financing the absorbed cost model and then become part of BAU. Inefficiencies are not addressed and become the norm.

Recommendation

Know the per user cost for each and every ICT business function. Baseline ICT services to business areas and manage change through projects.

An immediate benefit is that the resource impact to supply additional business function and cost transparency is known. The resource impact of decommissioning also becomes clear and there is a meaningful prioritisation of ICT resources for business functions achieved. Consider also where project costing for non-BAU (including spending initiatives) could be better used instead of the absorbed cost model.

6 Performance measurement

6.1 Service levels for business functions

ICT areas should have a performance service level for each business function. Like contracting any service, the business users need choice and transparency about their ICT decisions. The deployment of ICT "apps" are not quite a the utility stage, however, just like the ability to change telco providers and still keep you mobile number – users need their engagement with ICT areas to provide them choice and the procurement environments are going to have to change to address this user need.

Recommendation

Use frameworks that will provide a baseline for service levels for BAU ICT business functions. The immediate benefit is identifying the impact of a change and expectation management for business users. Focus on performance measurement of the services, including independent reviews of both services supplied by departmental personnel as well as suppliers.

6.2 Buy services not DIY

When an ICT area has not been able to baseline its services and demonstrate continuous improvement and efficiency dividends, the culture tends to be self-serving.

The business users are forced to "eat in the same restaurant" (i.e. only use an agency's in-house IT) and have no real say in the service delivery.

As agencies shift to buying services, the focus moves away from DIY in-house ICT, to a more results focused environment that is outcomes orientated and seeks benefits measurement.

Recommendation

- Develop a catalogue of ICT services to business. Focus on usability concerns not just functionality, to improve productivity (i.e. wireless access in the building or user's bringing their own devices).
- Shift the focus to results and reward.
- Provide transparency of ICT activity to business users. Measure the results against the agreed service levels and show continuous improvement over time.
- Use independent auditors to track service levels of providers

7 About cloud computing

The Australian Government's strategic direction for cloud computing is outlined in the Cloud Computing Strategic Direction Paper: Opportunities and applicability for use by the Australian Government. (http://www.finance.gov.au/e-government/strategy-and-governance/cloud-computing.html)

Cloud computing is a new way of delivering computing resources, not a new technology.

The paper acknowledges that benefits, risks, and issues associated with cloud computing have become a topic of interest as Australian Government agencies seek innovative ways to deliver government services. This is due to an increasing demand from agencies (as ICT users) for highly available, more responsive and flexible ICT service delivery that is cost effective.

The paper strongly recommends that a risk-based approach to the use of cloud computing is taken and outlines areas and timeframes that may be suitable to transition to cloud.

> *The paper notes advances in cloud computing make it possible for agencies to share the same ICT infrastructure and to access software, services, and data storage through remote infrastructure. This makes it possible for ICT to become a new "utility" model.*
>
> *The Review of the Australian Government's use of ICT (the ICT Review), undertaken by Sir Peter Gershon estimated that costs of $1 billion could be avoided by developing a data centre strategy for the next 15 years.*

The Cloud Computing Policy and Cloud Computing Strategic Direction Paper were agreed by the Secretaries' ICT Governance Board (SIGB) on 24 March 2011.

The Australian Government Cloud Computing Policy states "that Australian Government agencies may choose cloud based services if they demonstrate value for money and adequate security".

Adequate security is demonstrated by meeting the requirements in the Australian Government Protective Security Policy Framework (PSPF).

To implement the Strategy, two data centre panels have been established:

- Data Centre Facilities Panel (http://www.finance.gov.au/procurement/ict-procurement/data-centre-facilities-panel-fact-sheet.html)
- Data Centre Migration Services Panel (http://www.finance.gov.au/procurement/ict-procurement/data-centre-migration-panel-fact-sheet.html)

A series of better practice guides covering, financial, legal, cloud governance, records management, privacy and security, culminating in "A Guide to Implementing Cloud Services". These guides are designed to assist Government Agencies in understanding the risks and benefits of cloud computing.
(http://www.finance.gov.au/e-government/strategy-and-governance/cloud-computing.html).

The benefits associated with cloud computing are relevant to all government jurisdictions and represents an opportunity for each to consider its own cloud computing strategy and the potential savings and ICT performance benefits.

Recommendation:

NSW is well advanced in its Cloud Computing strategy. Establishing a cloud computing governance framework, NSW Government will continue to facilitate suitable opportunities to benefit from cloud services, which the Agencies can incorporate into their ICT strategy. The framework will cover suitability of cloud computing services to meet business and operational needs, timing and triggers, financial impacts, organisational capability and governance.

Cloud computing achieves economies of scale that furthers the governance and continuous improvements in organisational efficiency. The economies of scale of delivery of ICT from secure NSW data centres means the Agencies are able to achieve gains in efficiencies such as:

- measurable cost savings
- reduced reliance on in-house contracted resources
- shorter timeframes to deploy ICT services

The economies of scale of delivery offered by cloud computing also means the NSW Government is able to achieve higher levels of ICT effectiveness such as:

- measureable performance level improvements in ICT services
- less ICT operational disruptions and/or project deployment delays
- improved service levels where business areas achieve earlier engagement and use of application functionality improvements and change requests

8 Delivering results

Vivek Kundra (former CIO of US White House) introduced the “cloud first” policy in the wake of the GFC to drive US$3.5B worth of cost savings and to introduce more effective ICT delivery and promote innovation using ICT.

The US introduced this policy because it recognised that ICT innovation was occurring in other areas of the economy, but not by government departments for the benefit of the citizen. Government departments were still “buying assets not services”, while the rest of the economy was taking advantage of data centre virtualisation, economies of scale, increased security and faster deployment of apps, by shifting ICT investment to the “cloud”. Up to now, the ICT industry’s focus has been on the sale to the agency as the win, not necessarily the improvement to or serving the stakeholder (Kundra).

Innovation is achieved when ICT areas recognise that they are better buying services and getting early results for business, rather than buying assets (infrastructure etc.) and trying to DIY in-house (or doing their own systems integration). Application development and configuration for Commercial Off The Shelf (COTS) is a good example where there are skills and resources in the market, and it is not necessary to retain these in-house.

ICT areas move from buying assets (buying, building/coding and deploying DIY in-house solutions) and instead, buying services (measurable service levels and tangible applications/outputs). The benefit is a results focus, reduced capacity gap and tangibly linking outputs to its costs (for discrete new business function).

Recommendation

Review procurement procedures and streamline and standardise the procurement of cloud and secure data centre catalogue of services with the Vendor Management Office (VMO). Set up a project and spending initiatives dashboard to drive greater transparency to the deployment of ICT services and achievement of business outcomes.

9 About the author

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Certified Practicing Project Director (CPPD) MAIPM (Australia)

A Project Manager with experience gained over 30 years, delivering a variety of complex, large-scale, multi-vendor systems integration solutions across Asia Pacific.

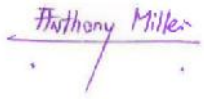
Specialities

- Enterprise Project Management (EPM)
- Information communication and technology (ICT) advisory services.
- Cloud computing advisory services.
- Systems Integration management services.
- Strategic planning, organisation and business process change

Anthony Miller is a director of WOT-Link.com which was established in 2007. WOT-Link.com provides advice in project and program management on web application optimisation and infrastructure systems integration in cloud computing. Formerly National GM for Optus Infrastructure Integration and Associate Director at PricewaterhouseCoopers, Anthony advises executive managers and governance boards in the private and public sector, on strategies to deliver business transformation and enterprise wide objectives. WOT-Link.com also advises government agency executives on project governance and communication strategies to encourage stakeholders to invest in resultant business changes.

In addition to his professional work, Anthony supports not-for-profit organisations and has been a councillor of the Australian Institute of Project Management (AIPM) since 2010, was the treasurer and councillor of RSPCA ACT between 2006 and 2008 and is a member of the fundraising committee since 2008, was an associate of CPA Australia between 1989 – 2005, the non executive director of Anglicare Canberra & Goulburn Board between 2006 – 2009 and a board member of the Royal Blind Society, Sydney between 2003 - 2004.

Signed:



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