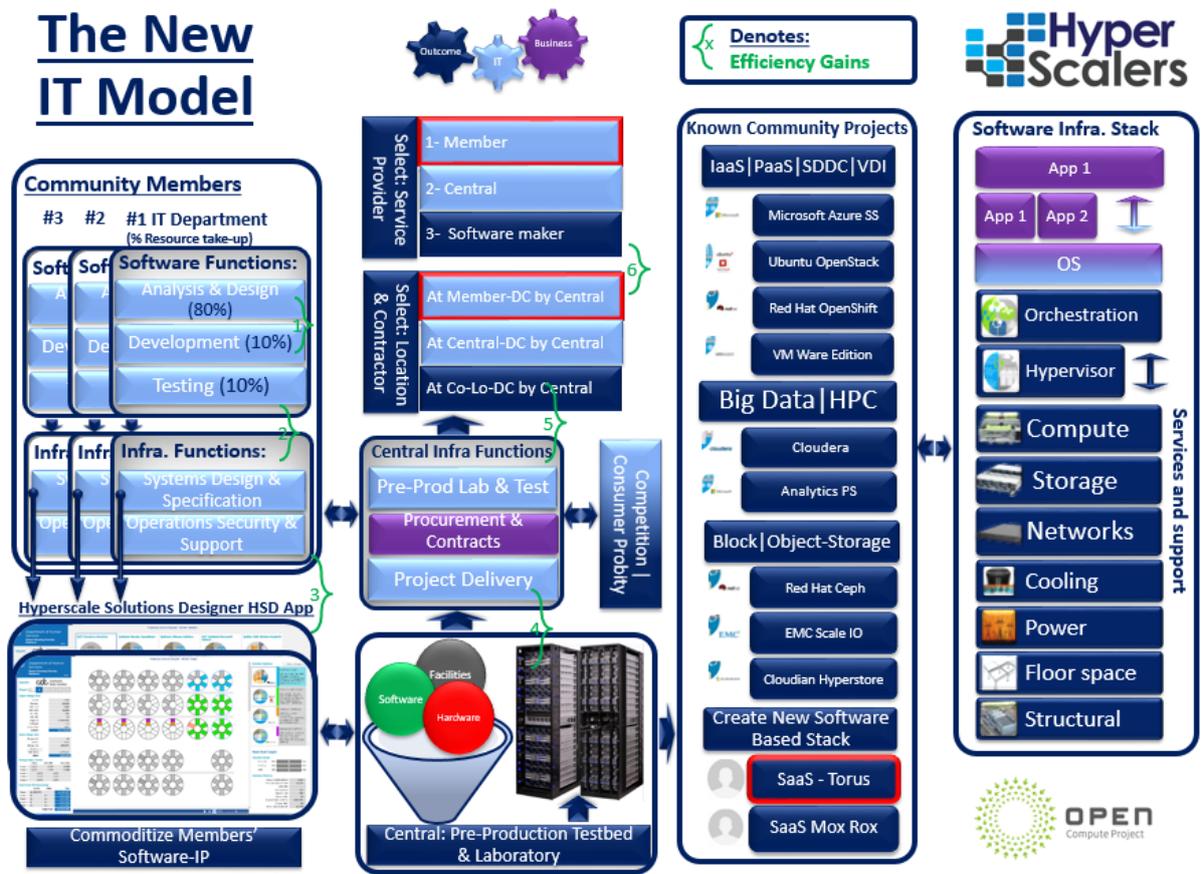


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In order to address the challenges faced in improving ICT procurement rules, capability and culture for Australian Government, we feel it is helpful to outline key inefficiencies and other factors as we understand them within the existing Australian Government ICT model.

These are:

- a) A lack of centrally co-ordinated automation across delivery of complex software centric IT services
- b) A lack of standardisation across IT Infrastructure implementations. Results of this include:
 - a. Custom engineered / non-interoperable architectures (when considered on a cross-agency basis),
 - b. Difficulty (or even inability) to realise the benefits of resource sharing, open data and analytics between agencies.
- c) 'Black Ops Projects' - meaning software oriented services stood up in the cloud without reference to the availability of existing government owned services. This can occur due to:
 - a. Misalignment between IT agency functions,
 - b. Lack of availability of evaluation/test laboratory resources.
- d) A lack of central procurement co-ordination, resulting in inability to leverage inherent economies of:
 - a. Purchasing scale,
 - b. Capital asset management at scale,
 - c. Operations management at scale.
- e) Competing Co-Lo and Cloud panels force agencies down opposing strategic paths within Government.
- f) Inherent proprietary hardware limitations with equipment sourced from OEM vendors leads to:
 - a. Expensive blowouts in acquisition costs,
 - b. Vendor Lock in / expensive operational costs,
 - c. Lock of (or reduced) open standards characteristics, restricting systems integration.
- g) Barriers to Cloud adoption. These include:
 - a. Loss of physical control,
 - b. Security and sovereignty policy,
 - c. Latency and bandwidth performance,
 - d. Increased TCO (compared to directly owned infrastructure/services).
- h) No path for Agencies to capture and commoditise IP developed in-house, either for internal re-use within Australian Government, or for commercial resale within local & international markets.

With regard to the future, we feel that a holistic view should be taken towards how a 'New ICT Model' is realised by Australian Government.

Essential elements include:

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- a) Productivity gains can be realised with respect to complex software oriented services by deploying standards-based Platform as a Service (PAAS) software development management environments.
- b) Additional complex software development productivity gains can be realised via SaaS platforms supporting 'no-code' software composition. For example, Mox Rox and Torus are able to support creation of in-house SaaS products where up to 90% of the work normally done by developers is automated. This enables business analysts to build innovative IT solutions on the fly as requirements are gathered from business.
- c) (These products are both available as pre-engineered, Hyperscale appliances).
- d) Hyperscale infrastructure management can leverage bulk purchasing opportunities whilst ensuring that optimal consumption, utilisation, and operational flexibility are supported. Key elements include:
 - a. Support for multiple virtualisation / workload types,
 - b. Support for workload migration from multiple source environment types,
 - c. Support for flexible, resilient & secure network partitioning,
 - d. Support for automated provisioning, configuration, monitoring and protection.
- e) Standardisation of ICT delivery and operations achieved via implementation of service operations business process maps supported by an associated Business/Operations Support System (B/OSS). This approach is proven globally within the large service provider domain and can support planning, procurement, ordering, design, implementation and operations activities integrated across large multi-unit organisation structures. Advantages include:
 - a. Infrastructure and service product definition (standard and customised),
 - b. Supplier/Vendor management,
 - c. Complex Solution Design / Costing / Comparison management,
 - d. Automated Order processing,
 - e. Automated infrastructure and service product fulfillment (delivery) management,
 - f. Integrated infrastructure and service configuration inventory management,
 - g. Service assurance
 - h. Customer care
 - i. Standardisation for processing and delivery of Agency based requirements.
- f) Common Laboratory facilities for community PoC validation and software Appliance pre-engineering
- g) Productivity and economy of scale gains made across the agency community via centralised procurement and delivery capabilities, enabled via B/OSS automation.
- h) A centrally managed B/OSS system can support flexibility with respect to the unique needs of Agencies for locating infrastructure appliances either on premises, within a centralised government facility or at co-located facilities. A centrally managed B/OSS system can also enable management of infrastructure appliances by any combination of centralised staff resources, agency based staff resources and/or by vendor based staff resources.
- i) Government can additionally provide a shared resource pool - i.e. a Government Cloud for all sharable-type workloads (Agencies' websites for example). As for all other infrastructure implementation modes, this should be managed within a common used B/OSS system, regardless of which components of work are performed by centralised or



agency based resources.

1. How can the Australian Government make better use of ICT procurement to increase innovation in government services?

What are the incremental and more transformational changes that could be made?

A landmark opportunity exists for Australia Government to step into the world of advanced Business / Operations Support System oriented ICT management. By definition this is a transformational change, and is the key step required to support the subsequent detail and rigour needed to achieve safe incremental evolution of existing services used by multiple agencies across a structured mix of new generation infrastructure and service product definition, consumption, ownership & delivery patterns.

2. Has there been a time that you tried to provide innovative solutions to the Australian Government and failed?

Can you provide examples about what happened, why, and what you think the impact was on government.

ArenaCore has (fortunately) only been involved in completion of successful programs of work for Australian Government. These experiences have made it clear why transformational change accomplished in an incremental manner is a key touch point for Government.

ArenaCore submitted a "Shared and Common Services Whitepaper" to the Department of Finance in February 2016. This paper contains detailed discussion regarding provision of shared services in a structured but flexible manner. Much of the content of this document could potentially be of interest to the ICT Procurement Taskforce also.

3. In what areas of the Australian Government's ICT are the biggest opportunities for innovative technologies?

The existing 'old IT model' within Australian Government suffers from inefficiencies attributable predominantly due to a lack of standards and automation.

This is understandable and a natural consequence of the history & evolution of the use of computing services by government agencies.

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Based on operational methods observed particularly across large scale service providers, standards based automation can only be driven via highly effective Business / Operations Support System (B/OSS) platforms.

Without this, it will not be possible for Australian Government to escape the 'old IT model'.

Evolution onto standardised service operations, supported by appropriate Business / Operations Support System is arguably the key strategic opportunity, needed to in turn support the exploitation of innovative new generation ICT technology platforms for Australian Government.

9. What capabilities does the Australian Government need to be able to take full advantage of digital technologies, now and in the future?

The key to taking full advantage of digital technologies, now and in the future, is described above in terms of a B/OSS platform capable of supporting fully integrated infrastructure and service ordering, implementation and operations process management platform, including:

- Support incorporation of compute, network and storage infrastructure product offerings from multiple vendors
- Support for TCO comparisons to be made against similar solution mixes from different manufacturers
- Support for complex configured infrastructure solutions to subsequently be designed, ordered and implemented to within any data centre location within the centralised or customer agency grid.
- Store and retain all infrastructure and service configuration data in a single system of configuration inventory record.
- Integrate configuration inventory information with downstream trouble ticketing/service management, monitoring and configuration platforms to enable seamless operational service process delivery.
- Provide a single access point for ordering, change and cancellation capability (i.e. service activation) for public, private or hybrid sourced compute, storage and network infrastructure resources.
- Provide end user billing environment integration for detailed cost recovery (including ERP integration) and management cost reporting.

12. How does culture influence the Australian Government's approach to ICT procurement?

What sort of culture and attitudinal change would better support innovative ICT services and get more SME and startups working with the Government?

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'At Hyperscalers we build Hyperscale public and private clouds for the next generation service providers.'



Culture is a critical key to success with respect to business process re-engineering efforts, particularly around implementation of B/OSS platforms due to the sweeping level of organisation impact that by definition is involved. Government would need to develop and enunciate a very clear vision for its transformation strategy around B/OSS, firstly (and obviously) for its own benefit, but importantly also so that smaller organisations contributing to the effort can have a well-defined contribution to make.

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