How Commonwealth Bank of Australia Gained Benefits Using a Standards-Based, Multi-Provider Cloud Model

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Executive Summary

The standards-based, multi-provider cloud IT sourcing model implemented by Commonwealth Bank of Australia (CBA) enables applications to be frequently and rapidly shifted between cloud providers. Providers have to comply with CBA's standards, reversing the typical cloud model where providers define interfaces and standards. The model moved CBA toward pay-as-you-go IT, cut some infrastructure provision and maintenance costs by 40%, and reduced time to market for new applications by several weeks. Implementing the model required internal capabilities to design complex IT solutions, manage and integrate external providers, and govern application development.

CBA’s Multi-Provider Model of Cloud Computing

The model has three main layers. The top layer (CBA's apps) consists of a set of applications that adopt the cloud standards. These applications use different standards, depending on their respective requirements. For example, an application needing an SQL server must comply with CBA's SQL server standard, and an application needing a web server has to comply with CBA's web server standards.

The arrows in the figure indicate how applications request and how clouds provide computing capacity based on technical, legal, cost and performance considerations. The central layer, the multi-provider cloud management system, matches applications on the upper layer to the cloud computing infrastructure on the lower layer, providing the ability to move apps and their workloads between different providers.

The full article is published in the December 2014 issue of MIS Quarterly Executive, available online at www.misqe.org.
lower layer. The model thus allows CBA to shift applications and their workloads on the go, depending on prices, performance, and service level agreements for security, compliance or availability.

One of the largest benefits of the model is fast and easy provision of computing environments and servers in the software development and deployment cycle. CBA can now provide environments in minutes, with the central management system drawing on the abilities of the different cloud providers. Environments that previously took weeks to design, purchase, set up and test are now set up almost instantaneously. This has resulted in an overall reduction in time to market for new applications of about 4-6 weeks.

**Challenges of Moving to a Multi-Provider Cloud Model**

**Provider Challenges.** CBA invested effort into convincing cloud providers to accept the concept of client-side standardization.

**Cultural Challenges.** The move to cloud computing required a shift in mindsets and hence active change management by IT leadership. Cloud computing changes the patterns of how people interact externally and internally.

**Technology Challenges.** Finding the right technology to implement the cloud management system layer of the model was a challenge. CBA customized ServiceMesh’s software, which provides the ability to use blueprints for software development environments and for the automatic deployment of environments. Even so, CBA needed strong internal IT skills to configure and modify the software and to incorporate custom developments.

**Payoffs Achieved**

1. CBA is now much closer to true pay-as-you-go IT services and full “contestability” (the ability to constantly buy IT at competitive market prices). This reduces upfront and running costs for applications by enabling market efficiencies.
2. The IT resources available to CBA through its cloud model are flexible and scalable, and are therefore a better fit with its dynamic workloads.
3. Reliability has increased because applications can move quickly to other cloud providers or run concurrently at several providers to avoid performance or availability problems with one provider. CBA’s cloud model is configured to use different providers contingent on particular application needs and current cloud provider performance.
4. Time to market for IT-enabled products and services has been reduced because the use of blueprints means that software development environments can be rapidly and automatically deployed in the cloud.

**Lessons Learned**

1. **Enforce Client-Defined Cloud Standards.** Client-defined standards allow applications and computing workloads to move between cloud providers and prevent technological lock-in.
2. **Negotiate Flexible, Short-Term Arrangements.** Flexible, short-term arrangements with a set of cloud providers prevent commercial dependencies. The contracts should be flexible in terms of having no fixed prices and no guaranteed volumes. They should be short-term so they do not restrict the customer’s ability to switch providers in the future.
3. **Retain Sufficient Internal IT Capabilities.** Organizations need to retain the IT capabilities necessary to design and create complex systems such as a distributed cloud management system and to integrate and manage multiple cloud and non-cloud vendors.
4. **Be Pragmatic About Legacy Applications.** Do not move “non-cloud-able” applications to the cloud until major life-cycle events (e.g., changes in hardware or software) provide opportunities to move them to the cloud one by one. (The full article describes a tool for assessing the cloud readiness of applications.)
5. **Engage in Standard-Setting Efforts.** Large companies like CBA have the resources and clout to develop and mandate the use of their own cloud standards. Smaller companies can use collective standard-setting efforts to achieve similar benefits.