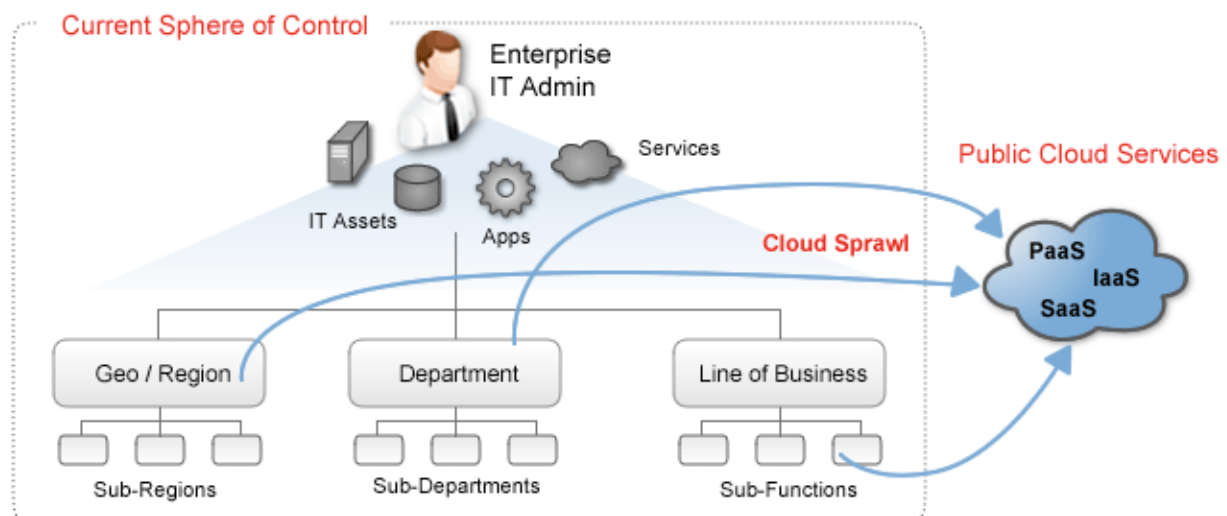


The New IT – Enterprise Cloud Services Brokerages

Cloud computing or 'the cloud' may mean different things to different people, but within the enterprise it can be described as the transformation of IT from a resource-centric model to a services-centric model where internal infrastructure and external services are sourced, bundled and delivered in a manner that reduces costs, speeds up innovation and grows the bottom line. These benefits are ultimately driving the growing interest and adoption of cloud computing within the enterprise.

The adoption of cloud computing in enterprises is being driven both at a strategic level as well as in an ad-hoc fashion. The strategic adoption is being driven top-down by IT under the direction of CIOs who recognize the business benefits of cloud computing. On the other hand, the ad-hoc adoption is being driven by individual employees, departments or functional organizations within the enterprise that are signing up for various cloud computing services on their own without IT involvement. The faster time-to-service provisioning, low cost and pay-as-you-go OPEX model - among other things - ensure that the ad-hoc adoption will continue despite tactical efforts to offer similar solutions in-house.

This ad-hoc adoption of clouds is without a doubt casting a shadow over traditional IT processes. In most enterprises, IT has traditionally centralized the procurement, management, administration and security for all applications and infrastructure on behalf of the entire organization. However, the proliferation of cloud computing services is resulting in decentralized visibility and control by IT departments. Consequently CIOs now have to contend with new issues that the distributed, service-centric nature of this computing model brings with it.



Despite the nirvana-like image it may conjure up in the minds of the uninitiated, computing in 'the cloud' is accomplished through many different types of services including infrastructure as a



service (IaaS), platform as a service (PaaS), and software as a service (SaaS). Each cloud service is potentially a separate entity with its own unique authentication and authorization, provisioning, administration, licensing and support characteristics. With many different clouds serving many different needs, building a cloud deployment strategy around a few offerings today raises the risk of managing services stovepipes tomorrow.

For CIOs, this raises significant concerns around:

- ***Security:** Enforcing corporate password policy and limiting the proliferation of passwords by employees or even ex-employees for the use of public cloud services paid for by the enterprise.*
- ***Compliance:** IT's visibility as to the location of corporate data and ability to control access to it.*
- ***Audit-ability:** Compliance enforcement traceability and optimizing license management.*
- ***Accountability:** Implementing enterprise-wide licensing and departmental chargeback capabilities across all external and internal services being consumed within the organization.*
- ***Supportability:** Enabling provisioning, administration and support for external services that are procured directly from external providers without IT involvement.*

As organizations evolve to an IT-as-a-service model encompassing different public clouds and internal virtualized services, they will need a common framework for delivering and managing these distributed services across distributed organizations. They will need to unify services management across public and private clouds, with key requirements including:

- *Security and access control policy enforcement for compliance.*
- *Life cycle management, including licensing, administration and support.*
- *Self-service fulfillment for their users.*
- *Enabling departmental charge-backs for external and internal services.*
- *Integration with internal IT assets and processes.*

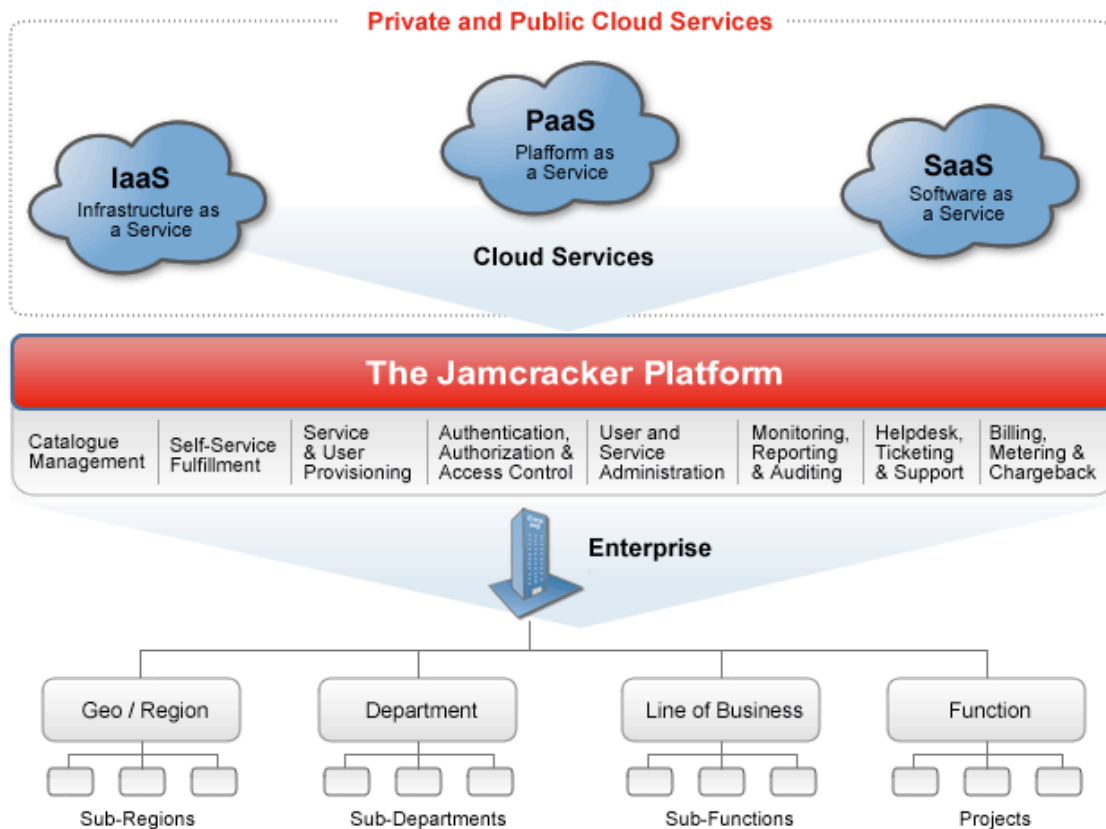
Cloud Services Brokerages - the New IT

To deal with the issues around delivering and consuming many different types of cloud services, Gartner and other enterprise IT experts have been driving the need for a new services delivery architecture, which they refer to as cloud services brokerages (CSBs). Many large enterprises will operate their own CSBs, where they will govern the delivery and usage of private and public cloud services - potentially augmenting their own CSB by connecting to a CSB service provider to enable employee access to various "long tail" cloud services for which the IT department does not have nor need to manage the vendor relationship.

The CSB model provides an architectural, business and IT operations model for enabling, delivering and managing different cloud services within a federated and consistent provisioning, billing, security, administration and support framework. Of course, bringing all of these components together and managing them is no easy task. A number of challenges exist in order to successfully implement such an infrastructure.

From an architectural standpoint, CSBs will require centralized catalogue management and services discovery, user and/or policy-driven service fulfillment and provisioning, centralized authentication and authorization - most likely managed via an enterprise directory, monitoring

and reporting capabilities, as well as integration with internal help-desk and accounting applications. An example of CSB architecture is shown in the following diagram.



With the CSB architectural approach, enterprise IT organizations can consolidate their cloud services management by enabling the:

- *Centralization of user authentication and authorization, including providing a single point of provisioning, sign-on, and administration for public and private clouds*
- *Enforcement of corporate security and compliance policies across all users, services and geographies.*
- *Audit of services usage policy compliance in a consistent format across all users and services*
- *Integration of cloud services delivery and consumption with existing IT processes, policies, and infrastructure.*
- *Quantification of usage data on services usage to optimize cloud service license management.*
- *Integration with accounting systems, enabling departmental use-based accounting.*
- *Centralization of support functions via a federated ticketing system to aggregate external services support with internal help-desk.*
- *Delegation of administration, in keeping with internal policies, to push down day-to-day administrative tasks to individual departments and users.*



Summary

Cloud computing is rapidly emerging as an enterprise technological and business imperative. But with many different clouds serving many different needs, building a management infrastructure around a few offerings today raises the risk of managing services stovepipes tomorrow. Enterprises are increasingly co-mingling on-premise IT applications, services and infrastructures with cloud-based alternatives, and the complexity associated with maintaining centralized control over provisioning, security, audit, compliance and licensing will grow exponentially.

Cloud services adoption within the enterprise, from a grass-roots level and as part of a planned initiative, will require IT to manage services and users across heterogeneous public and private cloud services. IT organizations will need to adjust their traditional services delivery, enablement, and management architecture approach to centralize procurement, delivery, billing, security, administration, and user support of internal and external cloud-based services.

The key for enterprise IT organizations will be to implement their cloud delivery and consumption architectural models in a manner that allows them to consolidate their IT delivery and management processes across private and public cloud services, enabling them to realize the benefits of cloud computing without incurring the risks. The solution will require an approach that will fundamentally reshape how IT is delivered today, and will progress IT to become less about infrastructure and more focused on being a services aggregator - mixing and matching the best services for meeting their organization's needs for today and tomorrow.

For enterprises, the CSB model is a means for IT organizations to unify cloud services delivery and management so they can speed up innovation, collaborate on a global scale, reduce operational costs and grow their bottom line.

About Jamcracker

Jamcracker has spent the past decade developing a multi-tiered and multi-tenant cloud aggregation, delivery and management platform. Jamcracker's Enterprise solution provides centralized catalogue management and services discovery, user and/or policy-driven service fulfillment and provisioning, centralized authentication and authorization – which can be managed via an enterprise's directory, monitoring and reporting capabilities, as well as integration with internal help-desk and accounting applications.

With the Jamcracker platform, IT organizations can unify public and private cloud services life-cycle operations by:

- *Delivering: Single point of provisioning, billing, usage, and user administration across all cloud services.*
- *Enforcing: Corporate policies and regulatory compliance across all users, services, verticals and geographies.*
- *Auditing: Visibility and accountability of usage in a consistent format for all users and services.*
- *Managing: Integrate with existing processes, policies, and infrastructure.*
- *Reporting: Quantitative and qualitative data on services usage.*