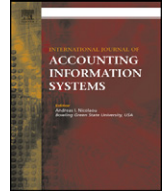




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On governance structures for the cloud computing services and assessing their effectiveness[☆]



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ABSTRACT

This research suggests information technology (IT) governance structures to manage the cloud computing services. The interest in acquiring IT resources as a utility from the cloud computing environment is gaining momentum. The cloud computing services present organizations with opportunities to manage their IT expenditure on an ongoing basis, and access to modern IT resources to innovate and manage their continuity. However, the cloud computing services are no silver bullet. Organizations would need to have appropriate governance structures and policies in place to manage the cloud computing services. The subsequent decisions from these governance structures will ensure the effective management of the cloud computing services. This management will facilitate a better fit of the cloud computing services into organizations' existing processes to achieve the business (process-level) and the financial (firm-level) objectives. Using a triangulation approach, we suggest four governance structures for managing the cloud computing services. These structures are a chief cloud officer, a cloud management committee, a cloud service facilitation centre, and a cloud relationship centre. We also propose that these governance structures would relate directly to organizations' cloud computing services-related business objectives, and indirectly to cloud computing services-related financial objectives. Perceptive field survey data from actual and prospective cloud computing service adopters suggest that the

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suggested governance structures would contribute directly to cloud computing-related business objectives and indirectly to cloud computing-related financial objectives.

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1. Introduction

This study suggests and validates possible information technology (IT) governance structures for cloud computing services. Cloud computing is an information technology service model where computing services (both hardware and software) are delivered on-demand to customers over a network in a self-service fashion, independent of device and location (Marston et al., 2011). The IT governance structures relate to the configuration of organizational resources to govern IT resources – in this case the cloud computing services. This research is timely because internal and external pressures (for example market share, processes efficiencies, cost reduction) are compelling organizations to find better and more economical ways to continue to embed modern IT resources in their information systems (IS). This effort is necessary to ensure that the IS continues to be the best abstraction of an organization's surrounding reality.

Cloud computing is an example of the IT provisioning model (Böhm et al., 2011). However, cloud computing represents a shift from the traditional product-based IT provisioning model (for example, outsourcing) to a service-based provisioning model (Armbrust et al., 2010). A way to understand this shift is to compare the outsourcing and the cloud computing value chains. Within the traditional IT outsourcing value chain, categories (for example, infrastructure, applications, and business processes), may be outsourced separately and managed by the outsourcing organization. In this situation, an organization could manage a large number of providers with complex outsourcing relationships. In contrast, the cloud computing model is a service-oriented (Jacob and Ulaga, 2008) model. The cloud computing services link the stronger service-oriented hardware outsourcing to the as-a-service concept for software. Within this environment, infrastructure-based services are now offered dynamically to the needs of customers. Furthermore, the cloud environment integrates both hardware and software as-a-service offerings. From a value chain perspective, this resonates to a marketplace, where various cloud computing services from different levels are integrated and offered to the customer as a utility. This setting requires a change in the way of managing the IT provisioning arrangements.

The utility-based concept is an affordable way to obtain modern IT resources and services. Utility-based computing resources relate to obtaining computing resources on an ongoing basis at a charge. Organizations have already taken, or are considering a path to acquiring cloud computing services in this manner. However, while the adoption of the cloud services would further externalize the IT service delivery landscape, its governance functions will remain central to organizations that acquire the cloud computing services (Blair, 2010; Plummer, 2012). The change in the IT provisioning model means organizations will need to update or evolve their IT governance functions to realize the business value associated with cloud computing services (Block, 2012). In fact, organizations would need to consider their governance issues relating to their path to the cloud computing services before making any decisions to engage with the cloud service providers, and reorganize their IT infrastructure and processes. For example, Marston et al. (2011) suggest that “CIOs and CTOs should proactively develop an overall “cloud strategy” in order to determine a time-based plan about which of their applications they can move to the cloud, and the timeframes associated with each of them” (page 185). Similarly, Fratto (2009) asserts “cloud computing is coming to your organization, like it or not. A governance plan gives IT the proactive control needed to proceed safely” (page 34). These considerations on governing the cloud computing services should complement organizations existing structures for governing the IT resources. The resulting IT governance environment would assist organizations in achieving their objectives for acquiring their IT resources from the cloud computing environment.

Thus, in this research we address a key question: What are the appropriate IT governance structures for managing the cloud computing services to achieve cloud computing services-related business objectives? Our review of the extant literature suggests that there are practice-based conceptual deliberations on the

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