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## Breaking Out of the Box: Is the Cloud Stuck in Silos?

 [Eric Johnson](#) posted in [Blog](#), [Featured](#) · May 22, 2012 5:34 pm



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Cloud computing holds great promise as one of the key methods available to IT professionals to enable cost reduction in operations for enterprises; large, small and medium sized business across nearly every market vertical. However, as it is currently being implemented, the cloud is in danger of establishing constructs that will cause it to fail to meet its potential.

This could subsequently cause it to fail to deliver on productivity increases and profit margin contributions to the levels that cloud computing should natively attain. For cloud service providers to attain service delivery levels for which enterprises will continue to subscribe in ever increasing amounts, and for service which yields increasingly profitable transactions, cloud service providers will need to make a fundamental change in their current strategies.

Legacy computing and networking has been based upon "silo" architectures. These silos were, and are, proprietary. Current cloud computing services often refer to extensive use of open source methodologies, open networking and open cloud stacks. The degree to which these are truly open is adequate, and is related to the use of methodologies but rarely discussed. However, this has shown that we are currently trading proprietary silos for "open" silos, with the degree of openness a debatable question.

What is not debatable is the fact that the silo approach has failed to fully deliver dynamic compute and network services, especially at a larger scale.

Many brute force methods and arbitrary architectural choices have been made to cover up the fact that these systems still use a silo approach, regardless of how they are referred to semantically. One case in point is a leading service provider that utilizes user-specified administratively pre-defined geographic location of their service instances to decrease normal operational latency. Another case in point is in the instance of fault conditions where the same cloud services provider uses "zones" that do not share the same infrastructure. These are brute force methods, more reminiscent of legacy architectures than the true vision of cloud computing.

If cloud computing were being implemented in a manner that was not dependent upon silos, there would be no need for zones or infrastructure isolation. A cloud of unified compute and network resources enables dynamic selection or re-selection of elements from the pool of both compute and network resources. Failures of this kind are tacit admissions that compute and network elements are in still constrained in silos.

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This should come as no surprise. The leading cloud computing technology vendors champion virtual network infrastructure, i.e. overlays, accomplished through encapsulation from the edge. Yet they all gloss over the fact that their dynamic infrastructures are virtual constructs, with little if any ability to make affirmative service delivery guarantees. These were the problems of legacy networks; abstracting the control plane alone will not solve these issues, neither will assume layer 2 fabrics with some layer 3 extension methodologies, and assuming the substrate is over provisioned or under subscribed.

The inability to map the virtual construct not just to the data plane, but to the physical network resources, and to actively and deterministically manage those resources at an atomic level on a global scale is evidenced in the failures cloud computing service providers and their customers are experiencing. When cloud computing technology vendors and cloud service providers accept the limitations of their current designs, and move to solve them, cloud computing will reliably deliver the high compute efficiencies, and the SLAs which service providers need, for which enterprises will pay along with profit margin increases we all need.

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As Chairman and CEO of ADARA Networks, Eric Johnson is responsible for guiding the direction of the company and overseeing technology advancements. Johnson is a subject matter expert, and speaker on advanced technology, networking, security, cloud computing and architecture, and he is an advisor to Congress and the Department of Defense.

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