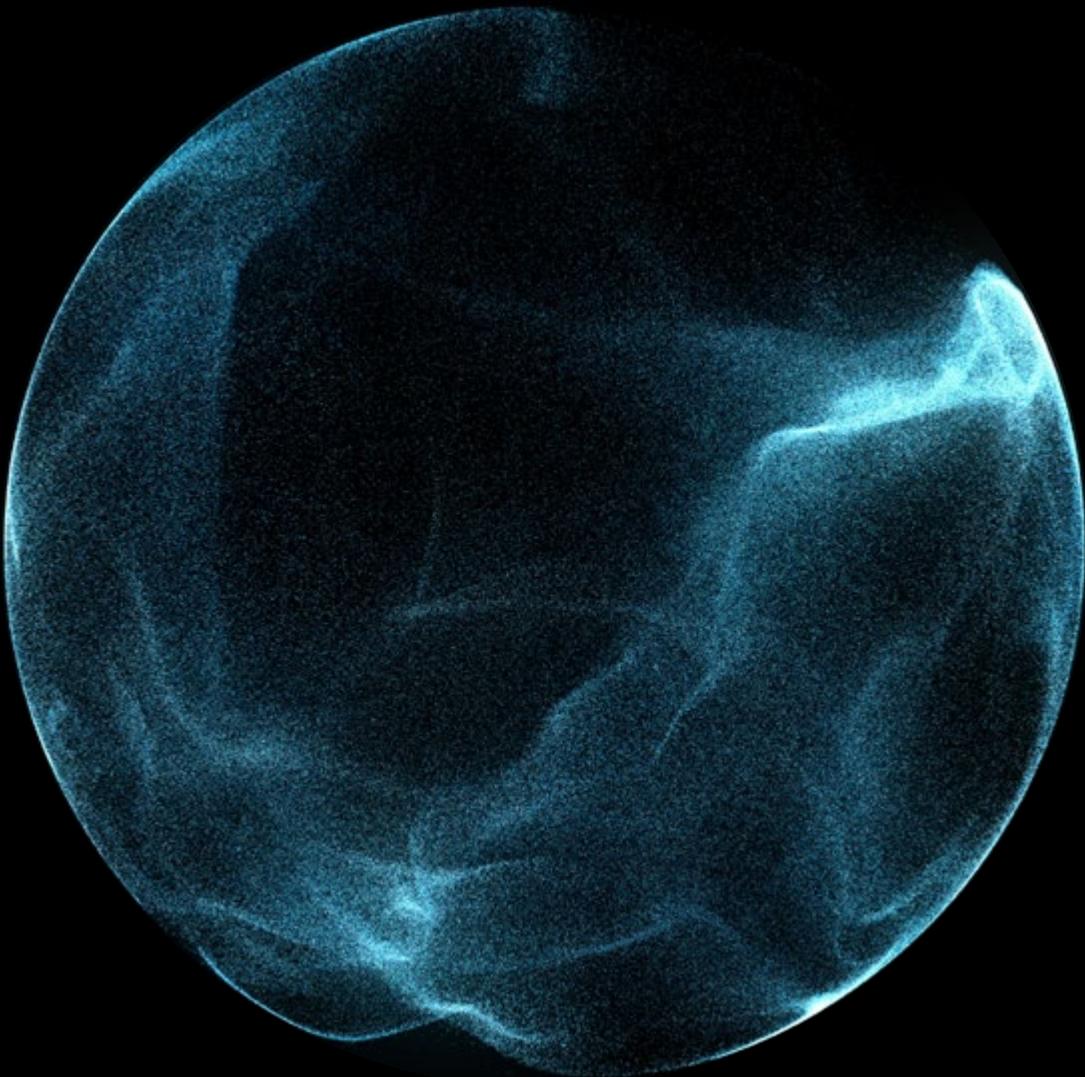


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Multi-cloud: A powerful
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Multi-cloud: A powerful tool or a fall back to stove-piped systems?

Answering the common questions that could determine the fate of multi-cloud in government

Is multi-cloud right for my organization? Is multi-cloud preferable to a single cloud service provider (CSP)? Is managing multi-cloud more complicated than we are ready to support? In many ways, these questions are just new forms of the perennial question around choosing a single large technology vendor versus selecting multiple best-of-breed sources. However, the rapid pace of cloud adoption means that it is an increasingly relevant question for most government agencies today. What is the answer? The song remains the same – *it depends on the need, balancing cost versus capability, integration, operations overhead, and a pragmatic approach to optimize your cloud solutions for both today and the future.*

It can be difficult to say precisely what the answers to those questions are, but it is possible to eliminate some of the potential answers. For many agencies, the answer is likely neither a single CSP nor an unlimited array of cloud point solutions. On one hand, the difficulties in managing a sprawl of point solutions makes it clearly a less desirable option. On the other, the simple fact is that many agencies already find themselves using multiple CSPs to meet the needs of various stakeholders or use cases, making the single CSP route not an option, which leads to a multi-cloud environment by default.

The key to staying ahead in this approach is to craft a multi-cloud strategy that allows organizations to use multiple CSPs, while doing so in an efficient, effective, and secure manner. A sound multi-cloud strategy sets the direction for governance and integration, while also keeping in mind the transformation of the workforce that must operate it. Each of these elements raise numerous questions for government IT leaders. To help cut through the noise, we have assembled a panel of cloud specialists to answer some of the most pressing questions about multi-cloud.



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STRATEGY AND GOVERNANCE

How does multi-cloud change cloud strategy?

By Doug Schneider

The cloud industry provides both common and differentiated solutions to customers. Common solutions are timely and maintained with economies of scale for greater cost efficiency. Differentiated solutions are specialized and require advanced configuration and integration know-how. To gain the best mix of capability and cost, a multi-cloud strategy can balance common and differentiated offerings across cloud providers.

The reality is that many organizations are not ready for multi-cloud, despite already operating in a multi-cloud environment in their agency. Many organizations have adopted/invested in IaaS/PaaS/SaaS without intentionally choosing a multi-cloud approach and now their strategy and governance must catch up with the current multi-cloud environment. Goals may not be achievable without a very deliberate, and well-executed, strategy, plan and investment. Organizations should now take a step back, define a strategy and plan, establish governance, consider the culture and people, and move forward deliberately.

An effective multi-cloud strategy includes sensing the cloud industry for applicable offerings that best fit with an agency's desired outcomes, which include the mission needs of various stakeholders, architectural design and preferences, and governance models to support the IT infrastructure. As new cloud capabilities are constantly emerging and evolving, agencies will need to continuously validate the total cost and value of current capabilities and evaluate new capabilities to optimize their own mix. This realization seems daunting at first since the speed of cloud technology advancements will require agencies to keep pace or stagnate.



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An evergreen approach is a culture shift from fixed systems of old where an IT investment lasted a decade. *Acquisition, authorization, migration, communications, change management* all the time sounds like a never-ending cycle to avoid. However, with the advent of cloud, the ability to move to a more modular and reusable set of components is real. This means agencies move from independent siloed systems to common platforms and pluggable parts to assemble end use solutions. In this approach, no one component is too big, swap outs require less effort with lower risk compared to system modernization. An agency technology strategy is no longer one and done for a decade. In a multi-cloud world, an evergreen strategy continuously evolves the mix of cloud technology as regular operations. To embrace this culture shift, a Continuous Cloud Architecture (CCA) becomes a key agency capability.

How do you effectively govern a multi-cloud environment?

Governance and continuous prioritization are key

Often, governance is catching up to the multi-cloud environment. When it comes to multi-cloud environments, there are two types of governance: the guardrails and policies that define what and how we will use the platforms, and the decision-making governance that defines which elements of the environment will be used for which data/applications/workflows.

• Guardrails

Guardrails enable management of the portfolio before ease of use, utility, and uncoordinated demand outrun agency cloud strategy and the ability to achieve ROI. Things that fall outside of guardrails inform security flags or risks.

• Prioritization and decisioning

A governance capability must establish a platform and decisioning framework and subsequently conduct continuous trade-off analyses to prioritize cloud usage aligned with strategy. For example, is one platform used for a certain type of application, or a certain function of our business? What solutions or data must coexist in the same platform to improve performance and protect privacy? What impact will this have on usage, costs, and previously defined guardrails? Continuous governance process (e.g., a Center of Excellence) should be connected to Continuous Cloud Architecture (CCA) discussed above.

Leverage automation

Automation supports governance, guardrails, and protects security of a multi-cloud environment. Without automation, manual processes limit the ability to apply cloud governance effectively and consistently cause cost and potentially security issues. This impacts an agency's ability to scale. Enabling the agility to deploy automation is thus one of the most important elements for IT investment for multi-cloud, including automation of cloud operations (CloudOps) across multi-cloud.

Establish and manage services delivery with multiple stakeholders

In a multi-cloud environment, agencies will have multiple entities (i.e., customers, vendors), multiple providers (IaaS, PaaS, SaaS, Middleware, cyber/security solutions, etc.), and multiple environments (e.g., sandbox, development, test, production). This multiplicity may exist for *each platform*. To achieve our goals, all these service delivery components need to be coordinated effectively – ideally centrally – to maximize our ability to govern the multi-cloud environment. This coordination needs to operate in the least complicated manner possible, so that it does not collapse on itself, or on us.



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WORKFORCE TRANSFORMATION

How do we adapt our people and culture to multi-cloud?

By **Jennifer Ertler and J.R. Ruiz**

Successful multi-cloud transformations require a cohesive strategy that not only considers an organization's technology and processes, but also its people. CIOs should understand how to develop a cloud-enabled workforce at the onset of transformation by acquiring the necessary skills and capabilities to execute a multi-cloud strategy. In addition to workforce considerations, organizations must rethink their operating model and corresponding processes to follow the DevSecOps model, which enables them to move faster and meet evolving needs. Organizations structured to integrate across IT, security, and business units eliminate bottlenecks and siloed operations, and cultivate collaborative, cross-functional teams that can work in an agile manner. However, transforming the workforce in this way requires a culture shift that promotes the DevSecOps benefits, such as knowledge sharing and continuous learning.

To meet these challenges organizations should consider the following:

• Shift culture

Many agencies entered the multi-cloud space out of necessity, to support urgent critical business timelines, with business need driving initial steps. To gain real benefits, there would be a shift in culture. This means having the clear intention to move beyond lift and shift, and then having the resources, governance, training, and tools at all levels of the organization to do so. Organizations should also remove the red tape, prioritize mission solutions in the cloud, and reduce the traditional anxiety around "we must own and operate our infrastructure and applications". This is even more complex in a multi-cloud environment, where multiple ATO and "seams" between platforms create risks.



- **Reskill teams**

Specialized skills are needed across individual cloud-based solutions. Are agencies able to attract, develop and grow talent internally - across multiple capabilities and cloud platforms - to create the depth and breadth of skillsets needed? Is it necessary, or more efficient, to outsource the specialized technical resources, and instead focus internal resources on people and program management? The dynamic nature of cloud almost demands the use of Agile techniques. Organizations need to ask themselves, "Do we have agile program management frameworks, current skillsets, or the training necessary to develop resources to be leaders in this domain?", "Are we ready – culturally and financially – to make this investment?"

- **Consider an enterprise cloud PMO**

The multi-cloud environment poses a high-potential and high-risk opportunity. A dedicated Enterprise Cloud PMO is responsible for developing the governance, policy and roadmap to execute the strategy, metrics, and financial planning. It must be enabled to drive decision-making (including COE), use Agile/SAFe approaches to Continuous Architecture and Decisioning, and ultimately manage financials.

- **Celebrate continuous decisioning**

Leaders must have the skills to think agile, tools to make rapid decisions, and appetite to pioneer. Organizations should democratize decision-making, defining what and where decisions can be made throughout the organization, including at lower parts of the organization than are made today.

Conclusion

These questions on multi-cloud are weighty, but they do not have to be burdensome. Starting with a sound strategy that builds on the foundation for an effective governance model and bringing your workforce along in the journey, are key to building a robust environment. Understanding considerations and lessons learned from other agencies that "have been there and done that" can further help with effective cloud service implementation and maturing technology business management capabilities. Resilient organizations join the experiment, learn from the experience, and either scale, identify an alternate path, or continuously adapt and evolve, through a process of continuous improvement.

At Deloitte, we see our role as a trusted advisor to our government and public sector clients to help them maximize their cloud investments and advance mission-critical operations. With over 4,500 employees with a security clearance and more than 70 former senior government executives, our team of Deloitte professionals has a deep understanding of how to navigate the complexities of regulatory environments and help see the full cloud picture.

Want to learn more? Let's continue the conversation.



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