Multi-Cloud for Agencies: Putting Cloud Smart into Practice in 2020
Cloud First was a vision and a means to drive momentum to introduce Cloud and accelerate adoption in 2011. It was ambitious, and an important catalyst for IT modernization – but it wasn’t always practical in action. The benefit of such experience with Cloud First is that the industry can now make better decisions about what Cloud models work, what workload best aligns with which Cloud option and how legacy IT can be best incorporated. This is the genesis of the latest (2018) edition from the Office of Management & Budget (OMB) appropriately named: Cloud Smart. It’s an evolution of the Cloud First movement which is focused on mission outcomes rather than just the benefits of the cloud. More than anything, Cloud Smart is a more holistic approach to IT modernization that addresses a hybrid, multi-cloud environment that can further mitigate workforce gaps, improve procurement and secure data.

GARTNER ESTIMATES THAT BY 2022, 28% OF SPENDING IN KEY IT SEGMENTS WILL SHIFT TO THE CLOUD.

Cloud Shift Proportion by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>System infrastructure</td>
<td>11%</td>
<td>13%</td>
<td>16%</td>
<td>19%</td>
<td>22%</td>
</tr>
<tr>
<td>Infrastructure software</td>
<td>13%</td>
<td>15%</td>
<td>17%</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>Application software</td>
<td>34%</td>
<td>36%</td>
<td>38%</td>
<td>39%</td>
<td>40%</td>
</tr>
<tr>
<td>Business process outsourcing</td>
<td>27%</td>
<td>28%</td>
<td>29%</td>
<td>29%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>19%</strong></td>
<td><strong>21%</strong></td>
<td><strong>24%</strong></td>
<td><strong>26%</strong></td>
<td><strong>28%</strong></td>
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</tbody>
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Source: Gartner (August 2018)

As organizations have evolved and learned the potential and the limits of a cloud model and the subsequent impact of a Cloud First strategy, one lesson stands out: the way to ensure a successful cloud deployment is through a measured, strategic approach that is flexible and can evolve over time. This next chapter in the evolution of cloud is multi-cloud infrastructure and enterprise cloud orchestration that provides the agility, scalability and governance to grow the cloud environment in a measured and structured manner.
The Peaks & Valleys of Cloud Evolution: An Industry View

Native-Built Applications
On the path to the Cloud over the last decade, there have been many highs and lows across the public and private sector. The greatest pockets of success existed primarily around the adoption of PaaS platforms, office suites, help desk and trouble ticketing systems. These were natural “wins” because these processes already align with how organizations consume cloud services. However, as agencies dove deeper into the core mission objectives, cloud adoption became more of a challenge. This has been particularly true for cases where agencies have gone through a complete “lift and shift,” or full migration. On some occasions, where software was written particularly well, migration was seamless. However, when applications were more rigid in nature, the opposite was also true. In those cases, to maintain reliability, cloud architects have had to go through extreme measures to replicate data between regions. The scenario typically created surprise demands for resources and unexpectedly large bills due to the cross region transfer of information.

Use Case: A Federal Agency Finds “Mainframe Issues” in a Cloud Environment
One large government agency experienced unexpected cloud costs first-hand when they developed a particular application on the public cloud and did so natively. They invested significant budget and resources developing a robust application but did so without a full understanding of how cloud is resourced and the foresight of utilization costs, which resulted in higher than expected bills. Even more troubling is the fact that the application can’t be picked up and moved. This is the very same problem many IT leaders experienced with mainframe that everyone was trying to avoid with cloud. Unfortunately, this scenario is all too familiar for many agencies. The Cloud Smart movement emphasizes learning from these moments and understanding the workload and what platform is going to run that workload the best.

THE CLOUD SMART MOVEMENT EMPHASIZES LEARNING FROM THESE MOMENTS AND WHAT PLATFORM IS GOING TO WORK THE BEST.
Administrative Hurdles to Cloud Adoption

The industry has maintained a perception that the Cloud was ready to run, plug and play, with “no assembly required.” The administrative reality was very different. Finding and scheduling the resources needed to set up the live environment and setting up Infrastructure Event Management (IEM) policies to onboard users has created a tremendous burden on agency staff. The industry is aiming to solve this with the support of system integrators and specialized resources that understand public sector data center strategy and can deliver effective tools to support policy adherence and governance.

Multi-Cloud Epitomizes Cloud Smart

The industry is settling into a world where hybrid and hybrid multi-cloud is the new norm. It’s no longer all on or all off-prem, but an appropriate mix of both. There is a time and a place for public cloud and private cloud – and certain workloads naturally make sense for each. The methodologies to integrate those two environments together is where the next big wave of technologies is taking root. The hallmark of this shift toward multi-cloud is the rise of containerized deployment modalities using microservices and then global orchestration at scale. This quickly levels the playing field. The hybrid multi-container cloud allows organizations to easily move their workloads and adjust where they run and move their data where it is best optimized, based on price, performance, availability and reliability. The growing emphasis in the coming years will be on proper orchestration on a greater scale. With this approach, organizations don’t have to worry about virtual machines and what type of hypervisors are running because the containers will run anywhere. While there is an investment associated with writing applications that can be containerized and easily deployed, the dividends are many and bring a certain level of “future-proofing” to the data center that was not present before. This is the epitome of Cloud Smart.

A DevOps View of Multi-Cloud

For the DevOps team, a multi-cloud approach brings a new level of agility, which creates tremendous short-term gain and long-term value in maintaining and modernizing operations. The industry has led the charge in bringing DevOps to the forefront and helping federal agencies learn from and apply these methodologies to support modernization. Multi-cloud takes a page out of the DevOps playbook and allows organizations to accelerate application development and get to new workloads faster, without ignoring the legacy mission support applications that are so critical. This is the answer to the lessons learned outlined in the earlier sections of this paper – an effective transition to the Cloud has to consider how to manage and move legacy systems to the Cloud cost-effectively or continue to help them operate more efficiently but still change the underlying business model by which they are managed and deployed. In essence, agencies have to bring relevancy to these systems. Fortunately, there are new and emerging technologies coming into the industry that orchestrate and support the management of a multi-cloud environment so that organizations can look at their operation holistically from a single interface and make smart decisions about the entire enterprise and the best way to manage workloads and make all new application development cloud-ready.

The Next Step for Agencies on the Path to Multi-Cloud

What’s really needed is a new level of management and orchestration between disparate environments across all different vendors/partners. The agency’s goal should be dexterity and professional support and the industry providers will build around the customer need, not just what a manufacturer can provide. This is where creative planning and implementation of infrastructure is born. This is the path to a future-proof data center.
The Potential Impact of Multi-Cloud on Agencies

Cloud Evolution’s Impact on the Workforce
Changing to a multi-cloud platform does not just impact technology and modernization of data centers, it requires reimagining the support systems and people that make technology effective. Before multi-cloud, an organization may have had specialized resources like system admins, network admins, storage admins and security professionals. The advent of multi-cloud requires that the admin team understand all aspects of those things. Networking expertise may still be important but perhaps less so than before, because the cloud interaction comes through a storage area network. The way the IT organization interacts with technology will be forever changed and the technology will change faster than the workforce can, which underscores the notion of the agile modality across the environment. Whether the topic is technology, people, processes or management, the strategy is the same: be agile. This may mean government agencies have to consider moving the management of the infrastructure to industry and focusing their internal resources on strategic objectives.

Governance is a Top Priority
Within any government organization, a keen focus on management, governance and fiscal responsibility to be good stewards of taxpayer dollars is essential. It boils down to the question: “Is this investment positive for the citizens we serve?” The legislative and regulatory framework is designed to protect agencies from quick decisions that could negatively impact citizens. As the industry evolves, agencies need partners and tools that align with their regulatory environment.
The Importance & Impact on Procurement & Finance

Many agencies struggle to understand how these Cost of Goods (CoG) models can be procured under existing regulations. But agencies are understanding the financial impact of the as-a-Service model and the cost savings possible with a multi-cloud approach. For example, DISA has completely transformed how it acquires its infrastructure, which has allowed the organization to really alter their entire investment strategy around IT and the way they bring value into the data center. Because they have a particularly diverse mission set that they have to support, it requires that they think about economies of scale when they acquire and deploy technology. It also makes it imperative to streamline how they get new technology into the data center faster, so they can deliver value and drive mission success. That means every decision has a real economic impact that adds up year after year. This is where cloud models can have a profound impact on either side of the budget. The switch from CapEx to OpEx seems pretty straightforward. But unfortunately, in the move to the Cloud, anticipating future needs and usage can be complicated. This typically results in unpredictable bills. The as-a-Service model for multi-cloud deployment offers an alternative investment strategy that favors both speed to performance and predictability in budgets. Now, multi-cloud deployments along with enterprise cloud management platforms have been implemented successfully for many years and can even be managed under the FAR model. So as procurement methods become more critical and investment strategies drive mission results, the industry is now providing multi-cloud options with true visibility and management into every aspect of the process from procurement to governance.

The Wisdom of Cloud Smart is Yet to Be Fully Realized

The path to the cloud has changed dramatically with the 2018 Cloud Smart initiative and the industry has quickly responded by pushing the boundaries of what “smart” really means. It’s not just technology, it’s the right procurement model, the right strategy across the ecosystem and defining the optimal management and deployment of that technology to support changing workloads. The variables are ever-changing and the most successful organizations will be the ones that see how much Cloud Smart can affect and be affected by other aspects of the operation beyond IT. While the demands are great, the advent of flexible multi-cloud environments and new single interface management platforms is making this “agile” environment realistic and practical. While there has been so much progress on the topic since 2018, now we’re seeing that the Cloud Smart movement has really just begun.
About ViON Corporation

ViON Corporation is a cloud service provider with over 38 years’ experience designing and delivering enterprise data center solutions for government agencies and commercial businesses. The company provides a large portfolio of IT as-a-Service, including infrastructure, multi-cloud and Artificial Intelligence solutions. Focused on supporting the customer’s IT modernization requirements, ViON’s Enterprise Cloud is changing cloud management for the market, providing a streamlined platform to audit and control technology in an evolving multi-cloud world. The ViON Marketplace™ allows customers to research, compare, procure and manage a full range Everything as-a-Service solutions from leading manufacturers via a single portal. ViON delivers an outstanding customer experience at every step with professional and managed services, backed by highly-trained, cleared resources. A veteran-owned company based in Herndon, Virginia, the company has field offices throughout the U.S. (www.vion.com)