MAKING THE INTELLIGENT DECISION

vRealize Network Insight

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Introduction

Like the topic of information technology as a whole, both virtualization and cloud computing are complex subjects. Hundreds of suppliers are offering products and services with the goal of helping their customers be more efficient, reduce their costs and simply make their lives better.

Since there are so many suppliers and products, it is hard for executives and decision-makers to evaluate products and services. So, the Kusnetzky Group developed a simple profile questionnaire that would allow them to quickly help us understand their thoughts and preferences. The author hopes the information offered in this book will simplify the process and make product decisions easier.

This book presents an interview with California Department of Water Resources. This Interview was conducted in April 2016.
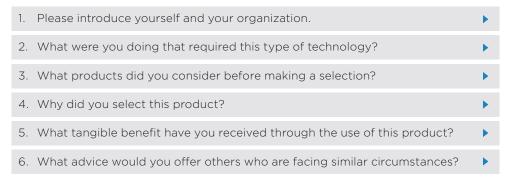
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Questions

Technology executives and decision-makers are typically very busy. Their decisions need to be both quick and effective. This means that they need to gather information rapidly from many sources, integrate it, make a reasonable evaluation of the available options, decide on the appropriate course of action, and then implement plans to adopt a product or service. As part of a prudent decision-making process, executives often find it helpful to learn what others who faced similar circumstances are doing.

Kusnetzky Group analysts developed a short series of questions designed to help subscribers quickly learn about the challenges others faced, what technology they considered, what products they selected and what benefits their organization received through the use of those products.

Here are the questions used in the "Making the Intelligent Decision" series:

1. Please introduce yourself and your organization.	▶
2. What were you doing that required this type of technology?	▶
3. What products did you consider before making a selection?	▶
4. Why did you select this product?	▶
5. What tangible benefit have you received through the use of this product?	▶
6. What advice would you offer others who are facing similar circumstances?	▶

The executive's responses are presented in their own words, using established industry jargon.

Interview: California Department of Water Resources

1 Please introduce yourself and your organization.

I am Tony Morshed, the Chief Technology Officer for the California Department of Water Resources (CDWR).

The California Natural Resources Agency manages the state's natural resources, and we (the CDWR) are one of the largest departments within that agency (about 3500 employees). Our mandate is to supply and manage water delivery for all of California – all while collaborating with multiple federal, state and local government organizations, environmental experts and, of course, our consumers.

On a more personal note, recently my team was credited with championing a new style of IT within the agency to promote the use of technologies that foster efficiency and innovation.

2 What were you doing that needed this type of technology?

The CDWR's mandate, the management of water supply and delivery across the entire state of California, requires the administration and control of vast

amounts of data – which means information technology plays a critical role in day-to-day operations.

From modeling environmental effects, overseeing infrastructure (dams, sewers, pipeline, etc.) to monitoring commercial and residential consumption, we require an IT infrastructure that enables collaboration and access between all of our key constituents: government agencies, businesses and citizens. Early data center upgrades, which included virtualization and the deployment of a multi-tenant/ hybrid cloud solution, provided us many benefits – but the ability to use automation to increase standardization and reduce operations overhead remained limited.

This lack of automation impacted functions critical to our mission – such as agility to deliver secure solutions to the business quickly with minimal customization – as well as added to our overall cost of owning and operating the IT function.

CDWR wanted to move to shared-services and service provider model to become an effective Business Enabling IT organization. In essence, we wanted to change the traditional IT operational model and move to a "Horizontal" Transformation Organization. With the goal of being an IT infrastructure provider that acted as an enabler (rather than a constraint), we at CDWR planned, designed and deployed a flexible data center architecture to optimize our network for applications and cloud access, reduce IT complexity, increase scalability and agility while improving our overall security posture.

3 What products did you consider?

Our Software Defined Data Center (SDDC) deployment effectively happened in 3 stages:

- The first was virtualization

- The second was the unfurling of a multi-tenant/hybrid cloud solution

- The third – the version we are calling 3.0 – is the software-defined architecture we are switching on in May.

Our next-generation infrastructure now incorporates software and hardware elements such as VMware NSX and ESX, for virtualization our networks and servers for agility and maximizing multi-tenant capacity usage, Palo Alto PA-5060 series next-generation firewalls to secure our infrastructure, Brocade's VCS fabric for improved network utilization, increased application availability, system scalability and to simplify our data center architecture, as well as F5 switches. Lastly and crucially, we also wanted to start our data center modernization project on the right footing when it came to risk free deployment and operations. We looked at a variety of products and selected Arkin's Security and Operations platform with the idea that we wanted visibility across all layers from the start.

(Editor's note: VMware recently acquired Arkin. The Arkin Security and Operations platform has been renamed "vRealize Network Insight." As this is the new name for this technology, it will be used throughout this eBook).

4 Why did you select this product?

CDWR IT Infrastructure and Operations has leveraged several industry standard technologies and tooling to maintain and operate their data center. Many of these tools were built for individual silos of compute, network, security etc.

During the design phase of the Cloud 3.0 project it became clear that along with the infrastructure elements, visibility and operations would be paramount. Not only would these elements need to be integrated in from the beginning of the process, but as the infrastructure was virtualized across compute, network and security, there would need to be a move away from point tools that could only provide insights into a particular area (compute, network, security, etc.). Instead, a converged platform that connected these elements together while providing visibility and analytics across multi-vendor, virtual, physical elements would become necessary. While evaluating their existing tools, the CDWR was quick to identify that this gap was prevalent among existing technologies in the marketplace.

A big part of our goal was to knock down silos and increase agency agility with a modern architecture that could support up to 5,500 virtual servers, 11 petabytes of data storage, 2,600 applications and 1,254-networked sites.

To achieve this, we needed to go with the best of breed across various technology needs. Having used VMware for our server virtualization, the decision to go with VMware NSX was straightforward; it gave us the ability to software define our networks thus increasing our agility many orders of magnitude. There are many similar examples across our vendor choices, but a clear differentiator in how we integrated each solution is linked to our choice of Arkin as the security and operations platform.

Like many organizations, we came to the table with a mixed datacenter that includes multiple vendors, and multiple tool suites. But we did not want to fall into the trap of restructuring an entire architecture only to then have to figure out how everything would work together, or how we could see across all of the layers and applications.

By baking VMware's (Editor's note: previously Arkin's) vRealize Network Insight into the project from the beginning, we have been able to effectively troubleshoot along the way, which has been an invaluable timesaver to our network and other operations personnel.

Additionally, because vRealize Network Insight is tightly integrated with VMware, Cisco, Palo Alto Networks, Brocade and F5 technologies, they assisted us in our move to a software-defined data center (SDDC).

Today, all of my agency's organizations in our data center are being given the support needed to transform the business and serve citizens, all to meet the agency's mission of protecting California's natural, historical and cultural resources.

5 What tangible benefit have you received through the use of this technology?

Our goal at CDWR was to achieve and maintain the highest level of overall data center economics and performance, and architecture we put in place went a long way in helping achieve these goals.

When it comes to efficiency, we are highly automated, and our application delivery process has never been more agile.

From a security perspective I am proud to say that we are vastly more secure today than in the past. And doing this did not mean our OPEX and TCO went sailing through the roof – instead we have significantly reduced both of these metrics by adopting this horizontal transformation.

6 What advice would you offer others?

At CDWR we designed a highly automated and secure data center that can now be managed holistically, and is scalable. Considering the logistical, inter-departmental and budgetary challenges we faced, this is no insignificant feat, and my team's work is leading the charge on software-defined security for all departments.

It was the collaborative effort of a lot of parties and a lot of vendors. But what we incorporated – and the key element that makes this deployment so efficient – was foresight.

By baking visibility in from the start we mitigated the usual testing and troubleshooting stage of any deployment, and came to the table with a system ready and able to perform and grow.

My advice to others going down this data center modernization route is to not forget that along with the platforms and technologies for networking, security, storage and compute, addressing operational paradigms and approaches from the get-go is critical. Everything should start – and end – with visibility.

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