Don't Get Lost in the Clouds. Charting a Course to Realize More from Your Cloud Data Protection Strategy

The cloud is transforming IT strategies like never before. With a new focus on IT-as-a-service delivery models, enterprises both large and small are adopting the cloud to solve the increasing pressure to manage massive volumes of data with less cost and complexity. From cost management and constructing the most efficient implementation architecture to assuring recovery times and minimizing data complexity, it’s easy to get lost in your cloud strategy.
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CHARTING A COURSE TO REALIZE MORE FROM YOUR CLOUD DATA PROTECTION STRATEGY

The cloud is transforming IT strategies like never before. With a new focus on IT-as-a-service delivery models, enterprises both large and small are adopting the cloud to solve the increasing pressure to manage massive volumes of data with less cost and complexity. Large enterprises are consolidating their IT infrastructures to private clouds and beginning to use public clouds for use cases including test/dev and archiving. Smaller enterprises are turning to the cloud too for their data backup and disaster recovery processes. Yet, both are facing a litany of new challenges. From cost management and constructing the most efficient implementation architecture to assuring recovery times and minimizing data complexity, it’s easy to get lost in your cloud strategy.

This whitepaper will outline the key advantages the cloud can bring to your enterprise infrastructure and the barriers you need to consider to ensure that you are truly realizing the value you demand from a cloud-based model.

WHY TURN TO THE CLOUD?

The cloud is quickly becoming a transformative delivery model for IT services. From compute and networking to storage and software, the cloud enables organizations to streamline the availability of technology services and deliver them faster and cheaper than ever before. The characteristics of cloud computing are inherently high-value, working to present a new range of benefits to enterprise IT. These characteristics include:

PAY FOR USE – In the cloud, users pay based on the amount of services they consume. Similar to a utility such as electricity or water, the cloud provider owns and operates the plumbing and users pay only for what “comes out of the tap.” This transforms the cost structure of IT enterprises making it easier to predict and adopt without the heavy up-front costs typically associated with traditional on premise IT infrastructure.

SELF-SERVICE – With the cloud, users are provided the flexibility and freedom to select and consume the services they need without IT intervention. There is no need to understand “how” it is being delivered. The application interface becomes a layer of abstraction that absolves users from unnecessary operational complexity.

SHARED – At its core, the cloud is built on the concept of delivering services that are built on a pool of shared resources. This enables greater efficiency, flexibility and agility as services or applications “float” on top of the pool, only using the resources required for their workloads or operations.

"Because of the compelling price-to-value proposition of cloud storage and DR, organizations are increasingly looking to cloud solutions for data resilience."

IDC Technology Spotlight: Leveraging the Public Cloud for Faster Disaster Recovery at Lower Cost, May 2015
AUTOMATED – To deliver this shared approach to infrastructure and self-service operations, the cloud infrastructure’s underlying technology must be highly automated for enhanced efficiency. This helps to minimize complexity and ensure reliability, availability, and efficiency.

AGILE AND ELASTIC – According to IDG, 63% of customers claimed the cloud is improving IT agility. Why? By abstracting the applications from the infrastructure, “floating” it on top of a pool of shared resources, the service delivery becomes much more agile and elastic. Applications can be easily moved across pools of resources to achieve different service delivery and response times. Likewise, services can scale up or down rapidly based on user needs and business demands.

STANDARDS-BASED – So that they can be universally consumed, cloud services are built on well-defined industry standards including TCP/IP, HTTPS, and REST APIs. This makes implementation easier and migrations from one cloud service to another potentially seamless.

THE RISE OF THE HYBRID CLOUD

The nuances of today’s delivery models for cloud services are still under much debate. There are numerous definitions and perhaps even more ways to embark on a cloud deployment. In fact, Forrester defines cloud delivery models in 15 separate categories covering every area from Disaster Recovery as a Service to Infrastructure as a Service, each at different stages of growth and adoption.

Yet irrespective of the exact delivery model you deploy, it is very likely that it will take some form of a hybrid approach. Some applications and workloads may reside in on-premises infrastructure or in a private cloud, while other applications may either migrate to or be created in hosted or public cloud infrastructure.

In early waves of cloud adoption, some enterprises, in their enthusiasm for the cloud, embarked on mass cloud migrations supporting “cloud first” or “cloud everywhere” strategies. Yet in all their eagerness to adopt cloud approaches, the real value of the cloud was often lost. It created more complexity and in many cases created another separate and siloed stack of infrastructure distinctly disjointed from on-premises physical and private cloud deployments. The result? Again, more cost and complexity.

Today, wise enterprises have learned from early cloud experiences and are taking a more sane approach, understanding the barriers and risks while pacing their cloud adoption strategically. Thus, the hybrid cloud, in its various forms and architectures, has become the most prevalent model in today’s enterprises, and is expected to continue on as the delivery model of choice for years to come.

Among the advantages of a hybrid cloud delivery model are that it can balance price, flexibility, and elasticity. Applications and workloads that

1 IDG Enterprise Cloud Computing Research 2014
2 TechRadar™: Cloud Computing, Q4 ’14, Forrester Research
need to achieve greater agility and scalability can be extended on-demand from a private to a public cloud. In addition, hybrid clouds are well suited to disaster recovery needs, where active workloads can be run when needed in the cloud.

On the other hand, a hybrid cloud model also points to some important implications. Careful consideration must be given specifically to strategies for security, cost, complexity, trust as well as cloud readiness. These implications can be compounded by the intermittently conflicting benefits and challenges presented by hybrid cloud environments.

THE CLOUD PARADOX

Typically, enterprise IT is able to realize significantly more value for their IT investments when using a cloud service. Yet, as with any transformation, change brings new barriers and obstacles that must be addressed to realize enhanced potential. Some of the implications brought on by cloud computing create distinct cloud paradoxes that must be overcome to enable successful cloud adoption.

The first is related to the increasing expectations of today’s end users. For end users, the cloud is everywhere. It saves our personal photos, it delivers music to our iPhone, it can even support the way we do our taxes. And, with the proliferation of these cloud-based applications has come a new level of end user expectation, particularly when it comes to service levels and user experience. If a cloud service comes only with a complicated management interface or is unreliable it thus becomes a significant barrier to adoption. Here “the Cloud” and the “Consumerization of IT” are mutually reinforcing. When addressed together they can make effective cloud services both easy and reliable to use.

The next paradox is related to the increased level of choice offered by the cloud. With its agility and flexibility, the cloud enables choice in IT services like never before. End users and business departments can easily choose where they get their technology services, and from whom. If these needs are not properly addressed by internal IT departments, those more traditional IT teams will find themselves fighting to remain relevant. Consumers and business departments are demanding faster response times, better customer experience, and lower cost. If internal IT departments cannot deliver, users will often go completely outside the approved corporate infrastructure to consume services, such as file sharing and syncing solutions, creating redundant and even risky “Shadow IT” environments. With applications and data going “off the reservation,” internal IT is faced with new challenges of security risks and compliance breaches.

Finally, the cloud has brought about a change in “the customer.” In traditional IT environments, “the customer” was the IT admin or technology manager that handled the application or service. In a cloud-
centric world, this perspective is irrelevant. The real customer that matters is the end customer of the service – the end user or the business user of the application. They have the power to choose their service providers and only the most efficient, cost effective and reliable suppliers of the technology and infrastructure matter.

Line of business owners are no longer willing to pay a premium to have their applications managed and hosted internally. This too drives increasing instances of “Shadow IT,” in fact, according to Forrester 90% of IT organizations in 2015 admit to having “Shadow IT” in their organizations. This further demands that IT departments implement new IT-as-a-Service business models to accommodate increasing operational pressures to achieve more with greater efficiency.

OVERCOMING BARRIERS TO CLOUD ADOPTION

As organizations work to rationalize the cloud paradoxes that face their IT infrastructure, there are five key areas that must be considered. Cloud implementation best practices that address these top challenges will result in maximizing the value of cloud-based strategies and deliver the true value promised by the cloud.

ONE: SECURITY. Enterprises are conflicted when it comes to cloud security. IDG Enterprise reports that 74% of customers are very/somewhat confident in the “security of information assets in the cloud.” However, the same study reports that 59% of customers who pulled data and workloads back out of the cloud did so because of their concerns about security. The fact that we continue to see new headlines every day about security breaches and data hackings makes organizations even more on edge. From Target and Sony to Anthem Health Insurance, data breaches are wreaking havoc on businesses in every industry.

To overcome the security conundrum, it’s best to look holistically at data management strategies – especially when performed in the cloud. Security isn’t simply about encryption, as important as it is. Smart, policy-based approaches are also central to a secure and holistic data management strategy. For example, in the case of Target, hackers used log-in credentials through an HVAC system that was used in several Target locations. Encryption, no matter how bulletproof, simply wouldn’t have prevented that situation. Only locked-down policies at a very granular level would have prevented the breach, regardless of where the data lived, on premise, in a remote office or in the cloud. When selecting a cloud-enabled solution for your workloads, ensure that granular policy control is comprehensively offered in addition to encryption. This can enable the secure cloud features needed to prohibit costly data breaches.

TWO: APPLICATION READINESS. According to 451 Research, 39% of applications will run on cloud infrastructure by 2017. Yet, for this to become a reality, applications need to be ready for the cloud. They need to

“90% of IT organizations in 2015 admit to having ‘Shadow IT’ in their organizations.”

Forrester Global Infrastructure Survey, 2014
be designed to optimize bandwidth and deliver optimized performance so that workloads can be efficiently offloaded to the cloud when needed.

The same holds true for the solutions that will be delivering the data protection and disaster recovery for applications being run in the cloud. Only those data protection solutions that offer the application-aware backup, recovery and archive that is optimized to manage on premise, private, public and hybrid cloud in a single, common interface can truly power cloud implementations with application readiness.

THREE: EXPECTED AND UNEXPECTED COSTS. In 2015, enterprises will spend as much as $90 billion on cloud services. However, that large number doesn’t mean that organizations have unlimited funds to spend on cloud services. On the extreme contrary, they are looking to the cloud to save on costs, but this reality has yet to materialize. In fact, according to IDG Enterprise only 23% of customers claim that cost reduction is a benefit of using the cloud. But realizing cost savings with cloud deployments can take time. The cloud eliminates the high capital expense (CAPEX)-centric models of traditional IT. Rather than requiring heavy upfront investments, the cloud enables organizations to shift their IT infrastructure to an operational expense (OPEX), with monthly or annual subscriptions based on usage. This predictable OPEX model ultimately reveals cost savings when properly optimized.

It’s this optimization that is the key to cost savings. Using new cloud provisioning tools and cloud-enabled applications for processes such as disaster recovery and data protection, IT organizations have the ability to gain control of their cloud infrastructure in a single, web-based console. Here they can provision large numbers of cloud instances, attach expiration dates to those VMs, automatically power VMs down after expiration and manage processes across multiple cloud platforms. This ensures, not only that the cloud infrastructure is optimized to deliver the greatest efficiency, it also prevents users from “leaving the water running” on their public cloud, saving thousands of dollars on monthly bills based on cloud usage.

FOUR: CLOUD RELIABILITY AND TRUST. The cloud market is rapidly maturing. Major vendors, including Amazon, Google and Microsoft, have committed large investments to ensure that the reliability of the cloud is iron clad. Yet, there is still some apprehension about the reliability of cloud infrastructure based on continued news of cloud outages and failures.

The best remedy to assure cloud reliability is to support cloud strategies with trusted partners; partners that have a solid track record of success. For example, Cloud data protection vendors that have proven results for assuring cloud uptime and reliability will help to assure cloud reliability, and portability when necessary. An example is the failure of cloud storage provider Nirvanix. They only gave customers 48 hours to move their data from their service or risk losing it. Commvault® stepped in rapidly with a
tiger team approach to get every bit of data Commvault customers had stored in Nirvanix and migrated it seamlessly to a more stable, reliable cloud partner. Trusted, experienced partners will deliver cloud reliability without compromise.

**FIVE: COMPLEXITY.** Just as any new infrastructure, the cloud isn’t simplifying IT, it’s making it more complex. With many different cloud delivery models and multiple providers, the cloud is adding new layers of infrastructure that must be managed and optimized.

The best way to overcome the complexity challenge is to take a unified approach to data management in the cloud. A single, platform-agnostic solution can not only streamline a move to the cloud, but also enable simplification once workloads have been deployed in the cloud. Select a solution that integrates with 20 or more cloud storage platforms, has deep integration with cloud computing infrastructure from Amazon and Microsoft Azure and takes an agnostic approach to on-premises infrastructure built on VMware or Microsoft Hyper-V. This will minimize the complexity and give you the freedom to choose the best infrastructure, at any time, that meets your security, application, cost and reliability demands.

**GET MORE FROM YOUR CLOUD STRATEGY**

As more and more mainstream applications are pushed into the cloud, the cloud’s value must be realized. To ultimately recognize the true economics of cloud strategies, enterprise IT needs to get smart about managing its cloud resources. To achieve this, there are two critical requirements. The first is to achieve greater control. Enterprises require the same types of controls over cloud infrastructure and deployment that they have for their on-premises deployments. Greater control will minimize complexity and streamline management activities.

Naturally extending from the need for control is the second requirement where the cloud infrastructure becomes a natural extension of the data center. This ultimately is the desired end state for enterprises. Regardless of the actual cloud deployment model used – whether hosted, public, private or hybrid – the cloud should simply be an integral component in the complete data infrastructure. Achieving this requires a common set of solutions, strategies and processes to manage a hybrid infrastructure’s control, management, security, data protection, recovery and access in a truly seamless way, from end to end.

It’s important to point out that achieving this desired end state doesn’t happen overnight. It’s not simply a result of deploying the right software or tools. It requires a transformative shift across people, process and technology. IT teams need to have new skills and cloud expertise to deliver IT that is self-service and built on dynamic, agile and shared infrastructure.

“In 2015, enterprises will spend as much as $90 billion on cloud services.”

451 Research - Managed Infrastructure Market Overview 2014
In turn, processes will need to be massively overhauled to consider the unique differences of the cloud when compared to on-premises infrastructure. In the new utility model of IT infrastructure you can't have environments which “leave the water running all weekend.” Only by adapting processes in management, costing, reporting and staffing, can these challenges be avoided.

Finally, adapting technology and adopting new solutions that have been designed for tomorrow’s infrastructure will be required. Cloud backup and cloud disaster recovery solutions are two easy entry points to realize cloud value. Test and development use cases are also viable cloud entry points which can deliver swift benefits.

To drive a more rapid value from your cloud strategy, look to technology solutions that have native, built-in cloud capabilities to power quick deployment and ongoing cloud flexibility. It's also valuable to select solutions that support multiple cloud storage and compute platforms including Microsoft Azure, AWS, OpenStack VMware clouds and more. This will help you achieve greater flexibility because you won’t be forced into a single technology or approach which increases cost, risk and complexity. Instead, solutions that are truly technology agnostic, will give you the flexibility and choice so you can change strategies or platforms as needed. As a result, you can focus on meeting your business requirements rather than being concerned with the technology. Even more, as business requirements change, you’ll be better able to adapt with them, always delivering optimal application performance each step of the way.

The cloud transformation doesn’t have to be riddled with challenges. By overcoming cloud delivery barriers and deploying a holistic solution for your cloud strategies and processes, you can truly realize the value you demand from a cloud-based infrastructure.

RESOURCES

ii  commvault.com/resource-library/555d8b0d00e072a74700007f/idc-report-leveraging-the-public-cloud-for-faster-disaster-recovery-at-lower-cost.pdf

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