Don’t Settle for Two-Tiered IT:
Introduce Cloud-Like Benefits into your Company
Data Center with Consumption-Based Services
INTRODUCTION

As businesses transform to meet the challenges and opportunities of the digital era, IT leaders are charged with implementing a flexible infrastructure environment that can support a new and ever-changing generation of technology solutions.

For some workloads, the public cloud represents an ideal infrastructure option: scalable capacity, available as needed, with consumption-based pricing. Yet many applications, including the complex and sensitive workloads that are critical to core business operations, are not suitable for public cloud deployments. Factors such as security, compliance, app performance, migration challenges, and even cost may mean that certain workloads should be optimally kept in the on-premises data center.

Unfortunately, the dichotomy between public cloud and on-premises data center can lead to a two-tier structure, in which:

- New “cloud-native” applications are built and provisioned in the public cloud, where they can leverage the latest technologies and flexible deployment options, including containers and microservices.
- Existing applications remain on-premises in traditional architectures and configurations, where they are burdened by costly, inflexible infrastructure and high labor costs.

But for businesses to be successful in the digital era, the two-tiered approach is not sufficient. All workloads and applications are important to the business, and some of the most critical, performance sensitive applications are and should remain on premises. To essentially relegate premises-based workloads to second-class citizenship is a risky and costly approach that conflicts with business goals for agility and cost-containment. Furthermore, the two-tiered approach is insufficient to handle new ways of delivering IT resources, including hybrid workloads and edge compute.

Instead, successful IT leaders are rejecting the bimodal approach in favor of a more flexible infrastructure approach in which all workloads can run at optimal performance and efficiency, regardless of location or model.

In this report, we look at a “new compute experience,” one that enables IT organizations to deploy and manage their on-premises IT resources as easily and efficiently as a public cloud. This new approach to hybrid IT calls for IT leaders to leverage powerful, next-generation infrastructure to optimize application delivery, while easing the management burden by engaging with an expert data center services partner.

THE HYBRID IT ENVIRONMENT: HIGH EXPECTATIONS, HIGH STAKES

To support their companies’ increasing strategic dependence on technology, IT organizations are looking for flexible infrastructure options. According to a 2017 Frost & Sullivan survey of IT decision-makers, 55% of businesses are adopting a hybrid cloud environment, one that integrates a variety of infrastructure options—data center and hosted cloud; physical and virtual servers. Fifty-eight percent of businesses say the move to a hybrid cloud will support their company’s digital transformation initiatives, and over half (51%) say the hybrid strategy will “enable IT to become a service broker to the business.”

As a service broker, the IT organization works with line of business colleagues to identify the optimal environment for each new and existing workload, based on workload requirements and business priorities. Each deployment model must deliver on business needs, such as agility, scalability, security, cost-effectiveness, ease of maintenance, and support for next-generation technology.
Workload Placement: Choosing the Optimal Deployment Model

For many businesses, determining optimal workload placement is a challenge. In the recent Frost & Sullivan survey, nearly a third of respondents cited “assessing the optimal deployment model for workloads” as a top challenge they face in implementing their hybrid cloud. Forty-three percent of IT organizations say they rely on a “cloud first” policy, in which new applications are steered toward the public cloud, while legacy applications remain on premises.

It’s not surprising that businesses find the public cloud an appealing first-choice. As shown in Figure 1, IT organizations turn to the cloud to address a number of IT priorities, including cost reduction, decreased maintenance and administrative burdens, and improved flexibility and efficiency. They also consider the public cloud as a way to deal with capital budget constraints, enabling them to use more flexible operating budgets for IT resources.

Figure 1: Top Tactical Drivers to Public Cloud

<table>
<thead>
<tr>
<th>Driver</th>
<th>% of Respondents Citing Driver as “Important” or “Very Important”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce costs</td>
<td>76%</td>
</tr>
<tr>
<td>Manage data growth</td>
<td>71%</td>
</tr>
<tr>
<td>Reduce maintenance burden</td>
<td>64%</td>
</tr>
<tr>
<td>Improve IT flexibility/agility</td>
<td>61%</td>
</tr>
<tr>
<td>Improve BC/DR</td>
<td>61%</td>
</tr>
<tr>
<td>Manage environmental costs and impact</td>
<td>61%</td>
</tr>
<tr>
<td>Shift cost from capital to operating budget</td>
<td>60%</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan 2017 Cloud User Survey

However, businesses have always recognized that not all workloads are appropriate for a public cloud model. IT organizations cite a long list of reasons they have chosen not to place a workload in the public cloud. As shown in Figure 2, concerns about security, compliance, application performance and availability, migration, and costs are paramount. Also factoring are concerns about their ability to optimally manage a cloud environment, due to lack of in-house cloud expertise.
**Figure 2: Top Reasons for not Placing a Workload in the Public Cloud**

<table>
<thead>
<tr>
<th>Reason</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized access to my data or applications</td>
<td>65%</td>
</tr>
<tr>
<td>Poor or inconsistent application performance</td>
<td>61%</td>
</tr>
<tr>
<td>Unreliability of cloud networks</td>
<td>59%</td>
</tr>
<tr>
<td>Challenges migrating workloads or data</td>
<td>57%</td>
</tr>
<tr>
<td>Inability to meet compliance requirements</td>
<td>55%</td>
</tr>
<tr>
<td>Lack of in-house cloud expertise</td>
<td>55%</td>
</tr>
<tr>
<td>Sunk investment in IT components</td>
<td>54%</td>
</tr>
<tr>
<td>Insufficient Return on Investment</td>
<td>53%</td>
</tr>
<tr>
<td>Incomplete visibility across cloud and data center</td>
<td>53%</td>
</tr>
<tr>
<td>Loss of control over my applications</td>
<td>52%</td>
</tr>
<tr>
<td>Lack of resiliency of cloud centers</td>
<td>52%</td>
</tr>
</tbody>
</table>

% Of Respondents Citing Restraint as “Important” or “Very Important”  

Source: Frost & Sullivan 2017 Cloud User Survey

As a result, businesses are choosing to maintain critical and complex applications on premises. Top premises-based workloads cited by respondents to the Frost and Sullivan survey include:

- Storage and databases
- Complex business-critical functions, such as ERP, CRM, and HR
- Applications utilizing proprietary processes or data
- Performance- and latency-sensitive applications
- Applications subject to regulatory compliance
BRINGING THE CLOUD TO YOUR DATA CENTER

Even when an on-premises deployment is deemed optimal, the needs that drive public cloud adoption—such as managing growth, reducing the labor burden, increasing flexibility and scalability, and shifting costs from capital to operating budget—remain.

In order to fulfill their commitment to provide optimal service delivery for all workloads—not just those that are suitable for public cloud deployment—businesses must find a way to introduce the benefits of the public cloud into their data center environments. And that requires modernizing both data center infrastructure and management processes.

Depending on the current circumstances and objectives, data center modernization efforts may encompass some or all of the following:

• **Next-generation infrastructure** engineered to maximize application performance, speed to deploy, and cost-efficiency. Such systems may include high-performance servers equipped with the latest firmware; flash storage systems; and secure network solutions. For performance-sensitive applications, converged or hyperconverged systems are engineered to optimize throughput for particular applications. Software-defined storage and networking solutions maximize resource utilization while minimizing labor. For greatest flexibility, a composable solution provides a pool of IT resources to be allocated as needed.

• **An intelligent platform** that will support modern, highly dynamic application development and deployment. Businesses may choose to re-engineer their legacy apps right down to the code. Or they may decide to enhance the functionality of the legacy apps by introducing analytics and management tools via a universal API. An intelligent platform enables applications to be delivered more quickly to market, supporting business responsiveness.

• **Automation and standardization** to ensure speed and consistency of performance. Automation tools can also simplify deployment via standardized templates, enable auto-scaling of applications, and manage backup and replication—thus reducing costs and minimizing the labor burden.

• **A cloud configuration** to support flexible and cost-efficient utilization and deployment of infrastructure. Among businesses surveyed by Frost & Sullivan, 65% say they have deployed a private cloud in their on-premises data center, and 59% have deployed software-defined solutions. Cost efficiency is a driving force in each deployment choice.

The New Compute Experience Requires More than Infrastructure

While a modern infrastructure provides a strong foundation to support businesses’ escalating technology needs, the infrastructure itself cannot provide all the benefits associated with the public cloud. IT leaders continue to face declining budgets, reduced staff, and escalating expectations. Asked to rank the challenges they face in managing their data centers, the IT leaders surveyed by Frost & Sullivan place tactical day-to-day management issues at the top of the list. Many of the challenges are interrelated; for example, critical applications must be always-available to users; therefore planned and unplanned downtime must be minimized. However, maintaining infrastructure for peak operations is costly, both in terms of internal staffing and maintenance contracts. Furthermore, capital constraints may cause a business to attempt to extend the useful life of its existing infrastructure, thus requiring greater investment in maintenance and/or jeopardizing uptime.
Faced with the ongoing burden of infrastructure and application maintenance, IT leaders have few resources to focus on strategic initiatives, starting with digital transformation. Many businesses surveyed by Frost & Sullivan are struggling to design and implement a comprehensive and effective hybrid IT strategy that meets their company needs. Their challenges extend beyond infrastructure issues to governance and organizational issues that impact the effectiveness of their digital transformation, as shown in Figure 4. As siloed roles and departments give way to collaborative work processes in the IT as a Service model, IT leaders are struggling to determine what the optimal IT organization should look like, as well as how to implement the changes without disrupting the business.

At the same time, IT leaders are extremely aware of the high stakes associated with digital transformation, and the personal and business risks they will suffer if the implementation is suboptimal or does not deliver on company expectations. As shown in Figure 5, IT organizations face continued challenges even after they have begun or completed implementing their hybrid IT strategies. This may be the result of high expectations from business colleagues who are increasingly dependent on technology to do their jobs, and loss of confidence from business
leaders who fail to see immediate, positive results. Topping the list of challenges is budget — specifically, acquiring sufficient budget for the hybrid implementation. Generally the primary stumbling block is the capital budget, as businesses require more layers of approval and more justification to invest precious capital. IT organizations need to be prepared to produce a comprehensive business case to show that IT investments will produce sufficient business value.

Figure 5: Top Challenges in Gaining Business Support for Hybrid IT Strategy

<table>
<thead>
<tr>
<th>Challenge</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquiring budget to implement strategy</td>
<td>34%</td>
</tr>
<tr>
<td>Managing costs to run cloud workloads</td>
<td>32%</td>
</tr>
<tr>
<td>Gaining support from business leaders</td>
<td>31%</td>
</tr>
<tr>
<td>Meeting Line of Business expectations</td>
<td>28%</td>
</tr>
<tr>
<td>Controlling unauthorized cloud purchases by employees</td>
<td>28%</td>
</tr>
</tbody>
</table>

% Of Respondents Citing Driver as “Important” or “Very Important”

Source: Frost & Sullivan 2017 Cloud User Survey

The lesson learned by many IT leaders is that transforming IT to support escalating business technology needs will require more than swapping out of one technology system for another. To provide greatest value to their companies, IT organizations must change the way they operate; reducing the resources focused on non-strategic tasks, and divert their resources to more strategic goals.

To optimize the data center, and transform the way IT supports the business, many businesses turn to an expert partner for assistance.

DELCERRRING CONSUMPTION-BASED IT SERVICES IN THE COMPANY DATA CENTER

Visionary IT leaders will replicate a cloud experience within the corporate data center, by implementing a consumption-based IT model. Working with a data center services partner who takes responsibility for deploying and managing enterprise data center infrastructure, businesses can achieve an efficient, cost-effective model for IT resource utilization, one in which infrastructure is available and deployed as needed (consumption-based). Such a model increases efficiency and reduces costs, without compromising scalability, availability, or security.

In a consumption-based IT model, the expert data center services provider will manage your own infrastructure—whether on-premises, in a colocation center, or even in an intelligent edge—to deliver the optimal outcomes you require, with maximum efficiency and cost-effectiveness. To deliver a consumption-based model, the data center provider offers a range of services, including:

- Infrastructure needs assessment – The provider works with you to understand how your existing infrastructure aligns with likely needs, and optimizes capacity utilization.
• **Scaling and capacity management** – The right partner ensures you always have sufficient capacity to scale as needed—without paying for idle resources. In the consumption-based model, the spare capacity is neither deployed nor charged until it is required, thus aligning usage with costs. Automation tools can help ensure that applications always perform optimally and consistently, without requiring inefficient overdeployment of infrastructure.

• **Remote monitoring and maintenance of infrastructure** – By offloading routine monitoring and maintenance tasks to the partner, IT organizations can redeploy staff to focus on innovative solutions to business problems. The right partner supports all brands and models of infrastructure, old and new. This ensures optimal use of what you already own (maximizing the value of sunk investments). It also supports the service broker model, by enabling IT to select and deploy the right infrastructure for each application.

• **Workload-based infrastructure recommendations** – An expert partner will understand your business, and recommend the right mix of resources to meet your workload needs and business priorities. The partner will manage the infrastructure to deliver the necessary levels of application performance, availability, cost, and security for each workload. The partner should also help configure resources to support use cases for DevOps, backup and recovery, analytics, storage and database management, and more.

• **Budget flexibility** – The data center services partner will offer flexible cost models that align with your company’s budgeting and accounting priorities. Charges may be pay-per-use, or variable, based on resources utilized. For most businesses, the services model offers the opportunity to shift data center costs from the capital budget to the operating budget.

**Strategic Consulting Partner**

In addition to providing tactical support, the right partner will augment your own staff with services to help you transform IT and your business. Advisory and management services may address the key challenges businesses face in transforming to a hybrid environment, including:

• **IT as a Service:** Recommendations for organizational and procedural changes necessary to implement a “service broker” model

• **Workload assessment and migration:** Proven processes and technology to help identify and provision the optimal deployment model for each workload

• **Application optimization:** Development and operational support for modernizing legacy applications to meet today’s and tomorrow’s needs

• **Hybrid IT integration:** Building and managing an integrated environment, extending from your data center to multiple clouds.
THE LAST WORD

To survive and grow in the hypercompetitive digital era, businesses are leveraging technology to add speed, efficiency, and innovation to their software-based products and processes. But too often, the advantages are limited to new, cloud-native applications. Existing premises-based workloads, no matter how critical, are left to run on yesterday’s cumbersome technologies.

Such a two-tiered approach to application deployment introduces business risk and can thwart your digital transformation initiatives. Every digital asset is important to your company’s operation, and business leaders will not easily accept limited functionality, slow updates, and high costs for critical on-premises applications.

Rather than accept the status quo, many businesses are seeking a “new compute experience”—a hybrid IT environment in which all infrastructure is flexible, automated, and easy to manage. The new compute experience means that on-premises data centers deliver the same advantages as public cloud, including scalability, efficiency, and cost-effectiveness.

However, most IT organizations face resource and knowledge constraints that limit their ability to simultaneously manage both tactical and strategic initiatives; to optimally maintain workloads running on premises infrastructure, while directing the company’s digital transformation. For these businesses, the smart solution is to engage an expert data center services provider that can act as both a tactical resource and a strategic adviser. Such a partner can transform the data center to a consumption-based IT model, efficiently and cost-effectively delivering IT resources needed by the business.

The digital business environment means there is risk in providing “good enough” technology solutions. With the right data center services partner, IT leaders can deliver on business needs for a new and improved compute experience.

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