BEYOND INFRASTRUCTURE: OPTIMIZING YOUR HYBRID CLOUD FOR BUSINESS SUCCESS

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INTRODUCTION

It seems that hybrid clouds are everywhere. In a recent Frost & Sullivan survey, 62% of US enterprises say they have deployed or are deploying a hybrid cloud environment; 89% of those say they expect to increase their hybrid workloads in the next two years.\(^1\) In response to the growing demand, providers of IT products, services, and platforms have also stepped up their “hybrid” solutions.

Yet, it’s not clear that the enterprises and providers are talking about the same thing when they use the word “hybrid.” In most cases, enterprises are looking for a seamless pool of resources that can be centrally managed and orchestrated. For their part, providers tend to define the term much more narrowly. Some providers define hybrid as a network link or gateway between the premises and public cloud. Some use the word to describe their own mix of hosted cloud services (for example, multi- and single-tenant). Others offer “hybrid” platforms that connect workloads only among the provider’s own systems and services.

The inconsistency can be a problem for enterprise IT leaders looking to prepare their businesses for a digital future. Without a clear understanding of what a hybrid cloud can or should deliver, IT leaders risk investing in sub-optimal solutions.

In this paper, Frost & Sullivan defines “hybrid cloud” from the perspective of the enterprise. We show how the right hybrid cloud provides a critical foundation for achieving business goals—such as agility, innovation, and market responsiveness—while protecting valuable data assets. We consider the role of a third-party expert in deploying or optimizing a hybrid cloud, and provide tips for selecting the right partner.

DEFINING A HYBRID CLOUD

Unlike most industry-led technology innovations, credit for driving the hybrid cloud market can be claimed by enterprises themselves. In the early days of the public cloud, businesses limited their use of the new model, mostly trying it out for a few new applications. Up until about 2013, according to Frost & Sullivan research, IT decision-makers found the cloud model to be of limited usefulness, since it didn’t address the large embedded investment in the premises data center; and actually added cost and effort associated with managing the additional environment. Only after IT service providers and vendors started offering solutions to integrate the premises data center with the public cloud did enterprises start embracing the cloud model.

Frost & Sullivan defines a hybrid cloud as any combination of cloud, hosting, and private data center resources that are managed and controlled as a single pool of resources. In a hybrid cloud, workloads generally can operate

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seamlessly across environments; for example, applications may burst across environments, or workload components may be hosted in different environments.

The definition, which is more inclusive than that of many vendors, is derived from Frost & Sullivan surveys, which indicate that businesses expect a lot from their hybrid clouds. IT decision-makers say it is important for their hybrid cloud configuration to include a range of infrastructure options; and 68% of survey respondents say it should include all options.

Furthermore, they expect their hybrid cloud solution to be easy to manage, delivering consistent and granular visibility, and reporting across all environments. The top three criteria for selecting a hybrid cloud platform include visibility into usage (cited as important by 81% of decision-makers); single “pane of glass” management console for all components (cited by 76%); and the ability to manage infrastructure across all components on a per-project or per-department basis (cited by 72%).

Also important to enterprises is seamlessness. Seventy-two percent of IT decision-makers cite “automated failover for disaster recovery” as an important criterion in selecting a platform; and 62% cite “ease of migration across environments.” Fifty-eight percent say they expect “common identity and access management” across all environments.

WHY HYBRID? MODERNIZING IT FOR THE DIGITAL ERA

Interest in the hybrid cloud parallels the “digital transformation” that businesses are undergoing. New innovative technologies, new service-based revenue models, and new data sources informing real-time decision-making are raising the stakes for success in a hyper-competitive global economy. As businesses in every sector embrace their new role as “technology companies,” the IT organization must be prepared to support new and urgent demands for agility, market responsiveness, business intelligence, and more.

But how? Traditional IT infrastructure and processes are not sufficient to handle the new needs; they are too cumbersome, manual, and inflexible. While the public cloud option offers fast deployment, easy scalability, and budget-friendliness, the model is not appropriate for many business workloads due to potential issues with application security and performance in the shared infrastructure model, as well as challenges migrating legacy data or applications.

For most businesses, the answer to IT modernization is the hybrid cloud. A well-designed hybrid cloud optimizes investment in the premises data center, while leveraging public cloud and other hosted and services models (e.g., co-location, managed hosting, managed services).
The right hybrid cloud enables businesses to:

- Add **cloud-like flexibility, visibility, management simplicity, and cost-efficiency** to the premises data center. It also enables you to leverage your existing data center infrastructure, and upgrade on your own schedule.

- Take advantage of **third-party cloud services**, such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and commercial Software as a Service (SaaS), as appropriate; rather than defaulting to a labor-intensive “do-it-ourselves” approach.

- Choose among **infrastructure options**, based on workload characteristics and needs (for example, scalability, security, cost, speed to deploy).

- Leverage **modern development and integration** options, such as Dev/Ops, third-party Application Programming Interfaces (APIs), microservices, and serverless app deployment.

**How Hybrid Supports Business Goals**

For many IT leaders, the greatest value of a hybrid environment is that it enables them to support strategic business goals. For example:

- **Business agility**: A hybrid cloud allows the business to align infrastructure investments with the pace of business—quickly deploying, scaling, and decommissioning compute resources, as needed, in the public cloud and on premises.

- **Market/competitive responsiveness**: A hybrid environment supports agile software development processes (such as Dev/Ops and continuous test and delivery), making it easier to introduce infrastructure automation processes that will speed provisioning times.

- **Expanding into new markets and geographies**: A hybrid cloud respects data sovereignty and compliance requirements; for example, a company can maintain customer data in premises-based data centers where sovereignty is an issue; but leverage cloud centers for other data.

- **Data analytics/business intelligence**: Next-generation analytics functionality is increasingly built into applications and management platforms, providing business users with access to data and insights to manage the business. A hybrid cloud environment enables IT to configure workloads to maximize data accessibility from multiple sources.

- **Customer/employee/partner satisfaction**: The “consumerization of IT” means that IT organizations must answer to more influencers, both internally and externally. By adopting a hybrid cloud, the IT organization can become a “service broker” to the business, responding quickly to needs of Line of Business employees and partners for compute resources. When IT has the tools to focus on application attributes such as availability and performance, end-customers also can benefit.

- **Mergers and acquisitions**: For some businesses, the impetus to adopt a hybrid cloud comes when they acquire a company, and are faced with the difficult challenge of rationalizing and integrating disparate infrastructure and workloads. A hybrid cloud platform can minimize challenges associated with managing multiple environments, streamlining IT integration efforts.
Hybrid Use Cases

A hybrid cloud offers not only choice (which environment is optimal for each workload?); but flexibility (why not use multiple environments per workload?). Common examples include:

- **Split workload**: Many applications leverage data and software (e.g., widgets and microservices) from multiple sources. In a hybrid environment, the total workload can be managed centrally, even as components are split among environments. For example, in an e-commerce application, the Internet-facing, front-end website may be hosted in the public cloud, where it is easily accessible and scalable to handle unpredictable traffic; yet, the proprietary customer account data linked to the site may be securely hosted in a premises-based database.

- **Bursty or seasonal traffic**: In the past, operations teams needed to purchase and deploy sufficient infrastructure to handle peak traffic—a costly and inefficient way to ensure that applications continue to perform. With a hybrid cloud, the premises-based infrastructure can be configured to handle standard traffic volumes, and then scale into the cloud during high usage periods.

- **Cloud backup and recovery**: Rather than invest capital in a backup data center, many businesses are utilizing the cloud for backup and recovery of premises-based data and critical applications. The cloud-based solution can be configured for automatic failover in case of an outage in the premises center.

- **Analytics workloads**: Optimal use of sophisticated analytics software, including artificial intelligence and machine learning, requires access to large volumes of data, often from multiple sources, and increasingly representing high-capacity unstructured data (e.g., images and streaming media). In a hybrid environment, such analytics workloads can be run using a combination of premises-based proprietary data and cloud-based corporate and commercial data.

CHALLENGES DEPLOYING AND MANAGING HYBRID CLOUDS

Despite the growing interest and adoption, implementing an effective hybrid cloud is not easy. As many enterprises are discovering, “hybrid cloud” is neither a product to be purchased nor a service to be subscribed to. Instead, a hybrid cloud comprises a combination of on-premises and cloud infrastructure, overlaid with an orchestration platform, all of which need to be custom-configured and integrated to meet specific enterprise needs.

The complexity of designing, implementing, and managing a hybrid cloud that delivers on expectations creates challenges for enterprises, many of which find that their hybrid cloud solution does not ultimately meet their needs or expectations. Top challenges cited by those who have deployed some sort of hybrid cloud include:

**Integrating and managing components**

IT organizations struggle to make the various infrastructure components and models work together in a hybrid configuration.

- 53% of IT decision-makers say they have incomplete visibility across components
- 50% of respondents struggle to integrate premises and public cloud environments
- 50% also say they have trouble managing a multi-cloud environment
Assessing and deploying workloads

Businesses also struggle to deploy workloads in a hybrid environment.

- 51% of decision-makers say they need assistance to determine the optimal deployment environment for new or legacy workloads
- 58% say they face challenges migrating data and workloads from premises to public cloud
- 53% of respondents say they struggle to understand and manage costs to run a hybrid workload

Managing and protecting workloads

IT decision-makers are uncertain about their ability to adequately protect workloads in a hybrid environment.

- 60% of decision-makers say they struggle to ensure that backup and recovery processes adequately cover hybrid workloads
- 55% say they are concerned about their ability to meet compliance requirements
- 51% say they faced challenges ensuring that security profiles were maintained across premises and public cloud workloads

Staffing and organizational challenges

As noted, “hybrid cloud” is more than just a technology for most businesses; it is part of a broader transformation initiative to help IT support changing business needs. But enacting such a transformation without impacting vital business functions is extremely difficult for resource-constrained IT organizations. Among their greatest challenges in implementing a hybrid cloud, IT decision-makers cite a number of issues that relate to staffing, organizational structure, and business processes.

- 60% cite challenges reorganizing the IT department
- 59% say they are concerned about changing operational processes
- 55% of respondents say they have inadequate cloud expertise in their organizations
- 53% are concerned about job losses and changing roles of IT employees

WHY BUSINESSES TURN TO AN EXPERT PARTNER FOR HELP WITH HYBRID

Given the challenges IT leaders face in deploying a hybrid cloud, it stands to reason that many look to augment their staff and skills with a third-party specialist. According to the Frost & Sullivan survey, 93% of businesses engage a third-party expert for assistance with at least some aspects of their hybrid cloud deployment. In some cases, the engagement may be task-based; for example, assistance in configuring hybrid workloads, or migrating a specific data store. Other businesses seek a broader engagement—encompassing workload assessment, data center modernization, cloud service brokering, hybrid implementation, and ongoing optimization and management. By engaging a partner to help implement the hybrid cloud, businesses can realize benefits faster, more fully, and even less expensively than if they tried to do it all in-house.
Can your business cost-justify working with an expert partner as you implement or optimize your hybrid cloud strategy? A business case analysis should include the following considerations:

▪ **Expertise:** As noted, more than half of IT decision-makers say they have inadequate cloud expertise on staff. If you are among them, how do you plan to gain the needed expertise to implement and manage your hybrid cloud, if not with a partner? Are you able to expand your team with new hires (not easy in a market where many IT jobs go unfilled)? Or do you expect to redepoly and train existing staff (a challenge when your overworked staff can’t stop doing day-to-day tasks)? As you consider a “do it yourself” versus partner approach to hybrid cloud, be sure to calculate what it will take (in time and topline costs) to recruit, train, and maintain the needed skills on staff.

▪ **Value of time:** In a fast-paced digital economy, speed is a differentiator. The faster you transform your IT resources, the greater the opportunity to be first-to-market with innovative technology-based products and processes. Engaging an expert partner will almost certainly speed up your hybrid cloud implementation, allowing you to realize the benefits more quickly than with a DIY approach. But how much is speed worth to your company? In building your business case, you should consider both the benefits of faster time-to-market and the risks or opportunity costs incurred due to inflexible resources and slow deployments. Line of business colleagues can help you estimate the “upside” value (e.g., how much does cost-per-sale improve when marketing programs can be continually tweaked based on integrated analytics?); as well as the costs associated with slow response times (e.g., how many customers abandon their carts and go to a competitor?).

**CHECKLIST: WHAT TO LOOK FOR IN A PARTNER FOR YOUR HYBRID IMPLEMENTATION**

To capitalize on interest in hybrid, many providers are offering services to help with hybrid cloud deployments. But the partners, and the services they offer, vary greatly—from retired IT technicians who hang out a shingle, to massive consultancies that may deliver a 100-slide presentation to senior executives before walking away. How can you choose the partner that’s right for your business?

Here is a checklist of what to look for:

▪ **Ability to deliver a range of infrastructure solutions:** Be wary of firms that have a vested interest in steering you toward a particular infrastructure solution. For example, some cloud service providers assume their technology is optimal for all use cases, and they may treat your data center as a short-term holding pen for applications that haven’t yet been migrated. Conversely, some IT providers will try to
convince you that upgrading to their private cloud systems (with a network link to the cloud) is the only answer. You need a partner that is truly objective: one that is intimately familiar with leading IT and cloud vendors’ products and services; and that can recommend the right combination of hardware, software, and services for your needs.

- **Managed and professional service options:** A hybrid cloud requires more than an infrastructure schematic. You will likely require assistance across a range of tasks and functions, including workload assessment, migration, security and compliance. You may welcome assistance in defining “optimal performance” for workloads, or in developing reports relevant for LoB executives (for example, project-related cost or usage reports). Make sure your partner offers a range of services that can help you integrate the hybrid model into the fabric of your company.

- **Experience serving companies like yours:** Your hybrid transformation will impact everyone, from the CIO down to programmers and IT technicians. Make sure your choice of partner can understand the needs of all the constituents. The partner should be able to speak about strategy to your executives; but it also should know the way around a data center. And whether your company is a huge enterprise or a growing mid-market business, the partner should understand and be able to respond to your challenges.

- **Track record of success:** With new entrants flooding the market every day, it’s important to work with a partner that has been in the business for many years. Ask for references from new and long-term customers; you may gain insight into how the partner has evolved to respond to new technology needs.

- **Partnerships with the companies you do business with:** No application or technology is an island. To ensure optimal performance of your applications and infrastructure, your partner should have partnerships of its own, with leading technology providers. Such partnerships will minimize the need for custom integration work (lowering costs and speeding time to market), and enable you to take better advantage of best-of-breed technologies available in the market.
THE LAST WORD

IT leaders recognize that a “hybrid cloud” will deliver the infrastructure flexibility and cost-effective performance they need to support digital business. But going from vision to reality can be a challenge. You can’t buy a hybrid cloud, despite the hundreds of products and services that use the word. Instead, a hybrid cloud must be configured, integrating your own legacy and new data center infrastructure, and a variety of public cloud services. A hybrid cloud will act as a centrally managed pool of resources, running each workload optimally, based on needs for security, compliance, performance, flexibility, and cost.

Implementing and managing an optimal hybrid cloud requires expertise beyond that available in most IT organizations. That’s why nearly all businesses rely on third-party partners as they begin their hybrid cloud journey. The right partner can hasten and simplify the hybrid cloud implementation, enabling the enterprise to more quickly gain the competitive benefits associated with an agile, innovative business.

As you transform your infrastructure, an optimized hybrid cloud will be critical for your business’s future success. Be sure you have the right partner by your side.

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