![IDC - Analyze the Future]

White Paper

The Power of Hybrid Cloud

Organizations can optimize public and private cloud benefits, and achieve fast time to value, through turnkey hybrid cloud solutions

Sponsored by: Dell EMC

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EXECUTIVE SUMMARY

One of today's most important business trends is the digital transformation (DX) of the enterprise. IDC defines digital transformation as a set of practices and disciplines used to leverage new business, technology and operating models to disrupt businesses, customers, and markets in pursuit of business performance and growth. The application of 3rd platform-related technologies including cloud computing is foundational to achieving these outcomes. Enterprises today are pursuing digital transformation to improve customer experience, reduce costs, better weather business disruption, and create competitive advantages.

Digital transformation is about more than just technology adoption. Rather, it is the comprehensive scrutiny and reinvention of business models, processes, approaches to service, employee enablement, and even product offerings. All to create and take wholesale advantage of a fully digital and technology-enabled business lifecycle.

Digital transformation first requires that enterprises rethink their viewpoint on IT, moving away from traditional methods and instead seeking to deliver IT "as-a-Service." Enterprises are seeking to transform their IT departments into more agile, efficient, and service-oriented organizations. Cloud computing is a key step in this process.

This automation-enabled approach can help drive digital transformation and improve responsiveness to changing business needs such as:

- Proliferation of IoT devices as key business enablers
- The explosive growth of data collected, stored, and available for use
- Advanced analytics opening new and previously unimagined opportunities
- A whole new world of security needs as data flows freely between the edge, the core, and the cloud

By enabling self-service for internal customers and providing increased financial transparency, IT-as-a-Service is an important new tool in aligning IT with line of business (LOB) objectives and creating increased business value. Indeed, IT transformation has been tied to improvement in important aspects of performance including revenue, business agility, and the strategic application of technology. IT transformation ranked highest among enterprises' digital transformation priorities in IDC's 2016 study, "Partner of the Future: How to Embrace Opportunities in the Digital Economy."

Enterprises undergoing IT transformation are busy rethinking their business operations, how they use information, and what technology to deploy to keep it all working.

Cloud Infrastructure-as-a-Service is a key enabler of this transformation due to its potential for improving responsiveness, time-to-value, and efficiency of budgetary spend. Top performing companies, in particular, are heavily focused on responsiveness and time to value, listing flexibility and scalability as key infrastructure decision criteria 57% and 50% of the time respectively.

Enterprises seeking to deploy applications to the cloud face a critical decision at the outset on what kind of Infrastructure-as-a-Service architecture to choose. Their options include public cloud, do-it-yourself (DIY) private cloud, and vendor-provided hybrid cloud. Enterprises should consider these architectures' strengths and weaknesses when choosing a cloud architecture (Table 1).

TABLE 1

Cloud Architecture Consideration Criteria

Criterion	Public cloud IaaS	DIY private cloud	Turnkey hybrid cloud
Relative importance of cost advantages beyond year 2	Low	High	High
Relative importance of security and control over data	Low	High	High
Importance of a broad set of services (e.g. analytics or DBaaS)	High	Low	High
Divestiture of data center operations as an objective	Yes	No	No
Usage volume over next five years	Variable or unknown	Predictable	Predictable

Source: IDC, March 2017

Hybrid cloud has the opportunity to provide the best of both public and private cloud while eliminating or mitigating their disadvantages. A hybrid cloud architecture can offer a high level of security, control, performance, and compliance while maintaining flexibility. Enterprises deploying new workloads to the cloud most commonly list ease of use and management and performance among their top decision criteria. The use of a turnkey provider can overcome challenges with internal expertise and the lack of availability of the management tools internal teams know and prefer. It can provide fast time to value since turnkey solutions are delivered ready to run. As the turnkey provider manages the system over the course of its lifetime, the enterprise need not worry about maintenance and may enjoy reduced risk of downtime or data loss. Patching, versioning, and scaling all are greatly streamlined in the turnkey model.

IDC's *CloudView Survey* finds that 79.7% of large organizations (with 1,000 or more employees) report that they already have a hybrid cloud strategy in place. 51.4% report using both public cloud and private cloud infrastructure, and an additional 29.2% expect to do so in the next year.

To help make sense of this new landscape, IDC conducted a study of enterprise cloud adoption, covering both private and public cloud IaaS, and focusing on costs, benefits, and challenges for each deployment model. Data for the study came from a global survey of more than 1000 executives at medium to large enterprises running applications on public or private cloud (and sometimes both) who have detailed knowledge of the cloud implementations within their organizations. The results capture the current state of enterprise cloud and provided the raw material required for IDC's analysis.

This analysis takes three main forms:

- **General analysis.** IDC considered a long list of questions around technology choices, usage, and attitudes for these enterprises and examined the results for insights into enterprises' attitudes toward and expectations of their cloud platform solutions. General analysis includes important value drivers such as performance, security, and time to value.
- **Total cost of ownership analysis.** IDC specifically examined the cost structures around public and private cloud adoption and the cost value of the benefits they yield to build a total cost of ownership (TCO) model for enterprise cloud deployment.
- **Analysis of high versus low performers.** IDC grouped businesses according to a series of criteria such as revenue growth, customer satisfaction, and profitability into categories of overall success, from high performers at one end of the spectrum to low performers at the other—and with the bulk of businesses falling somewhere in the middle. We then examined the behaviors of companies in the various performance bands to discover which practices correlate to business success.

The results of this analysis provide the core of the viewpoint articulated in this white paper.

CLOUD ADOPTION ENABLES IT TRANSFORMATION

IT departments today are transforming themselves to provide a more service-oriented approach so they ultimately can do a better job of meeting the business's needs. CIOs seeking to provide true IT-as-a-Service are aggressively driving initiatives like:

- Automation of functions to provide self-service capability to business users
- Cultivation of a service mindset and the operation of IT as a customer-focused business unit
- Acceleration of application development and rollout
- Reduction of infrastructure and operating costs to free up budget for funding of digital transformation initiatives

Cloud infrastructure is a key enabler of these efforts. Cloud infrastructure yields improvements in the enterprise's ability to deploy and scale up applications, which in turn adds flexibility, responsiveness, and improved delivery times throughout the organization. Reasons commonly given by enterprises for deploying applications to the cloud extend beyond expected cost savings to include ease of use and management (23% of enterprises surveyed), speed of provisioning (18%), better global reach (27%), and scalability (18%). Deployments can take as little as hours or days as opposed to weeks or months as is typical for traditional IT. Scaling can occur dynamically on demand, literally in a matter of minutes, while scaling traditional storage or compute resources often is greatly slowed by the need for procurement, ticketing, provisioning, and so on. For any enterprise seeking to get the best it possibly can from digital initiatives, embracing cloud infrastructure can be a critical first step.

Cloud infrastructure is also a necessary step in enterprise digital transformation. By enabling businesses to support innovative new business models, provide superior methods of service delivery, and develop disruptive new offerings, digital transformation is serving a critical role in enterprise's ongoing efforts to delight customers, increase business efficiency, and maintain a competitive edge. 3rd platform-related technologies including cloud computing are key drivers for these outcomes.

IaaS (be it public, private or hybrid) and the applications it runs can bring cost savings, allow better use of manpower and other resources, improve security, and step up performance for business applications. Additionally, deploying services to the cloud holds strategic importance. As digital transformation is critical to business success across all industries, geographies, and company sizes, high performing corporations are seeking to develop their digital muscles earlier rather than later. Cloud deployment gives a company the opportunity to build its digital transformation skill set, and to begin learning the pitfalls and best practices in digitally enabled business. Implementing cloud solutions helps attract and retain employees with the knowledge and attitude to carry the company into the digital future, and it puts in place a critical computing platform upon which future digital initiatives will stand.

Unfortunately, moving applications to public cloud infrastructure can also come with challenges such as unforeseen or unpredictable costs or concerns around control, performance, and security. These challenges can diminish the enterprise's ability to realize the full potential of cloud architecture.

Many enterprises are responding to this dilemma by adopting a hybrid cloud model. By mixing public and private cloud IaaS in a single environment, hybrid cloud can in many ways provide the best of both infrastructure environments and minimize the disadvantages corporations face.

STARTING WITH EXISTING APPLICATIONS

Despite the power of public cloud IaaS architecture to enable new business applications, enterprises making their move to the cloud do so overwhelmingly in search of increased cost and resource efficiency for the applications and workload services they already provide (Figure 1). A full 84% of enterprises deploying on public cloud IaaS start with traditional applications and use cases (as opposed to 16% who began with a new application). These use cases span common enterprise applications such as business applications like ERP, CRM, and Human Capital Management or commercial collaboration solutions like email and document sharing.

FIGURE 1

Initial Trigger to Use Public Cloud
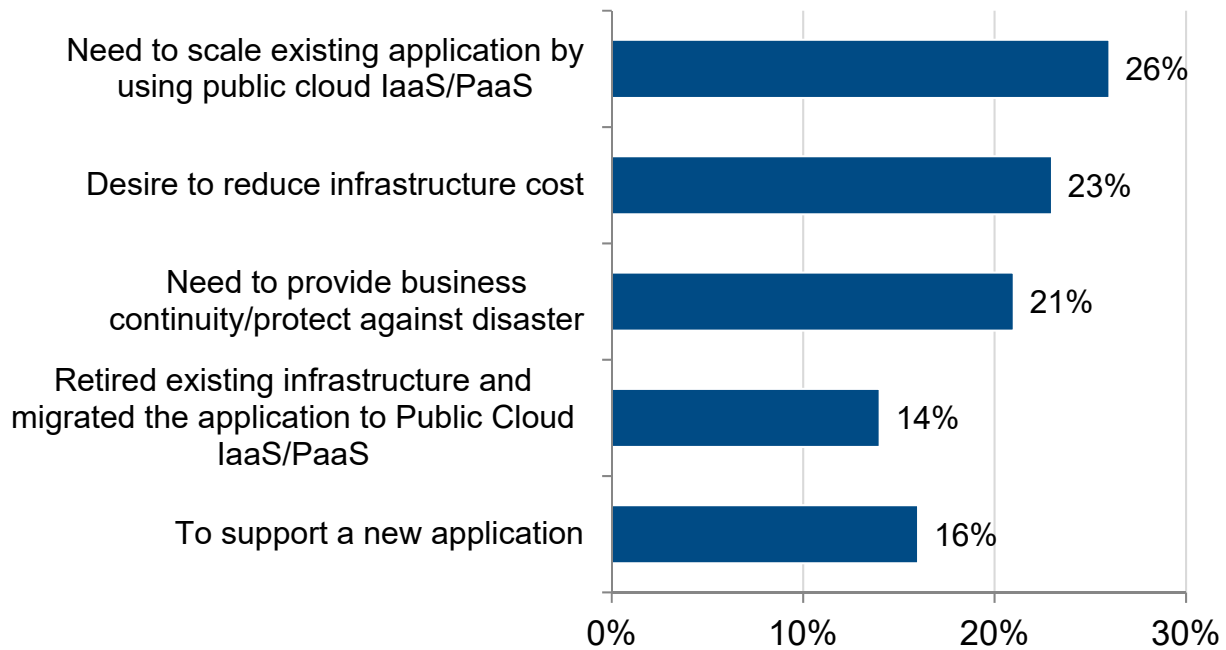
Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, January 2017
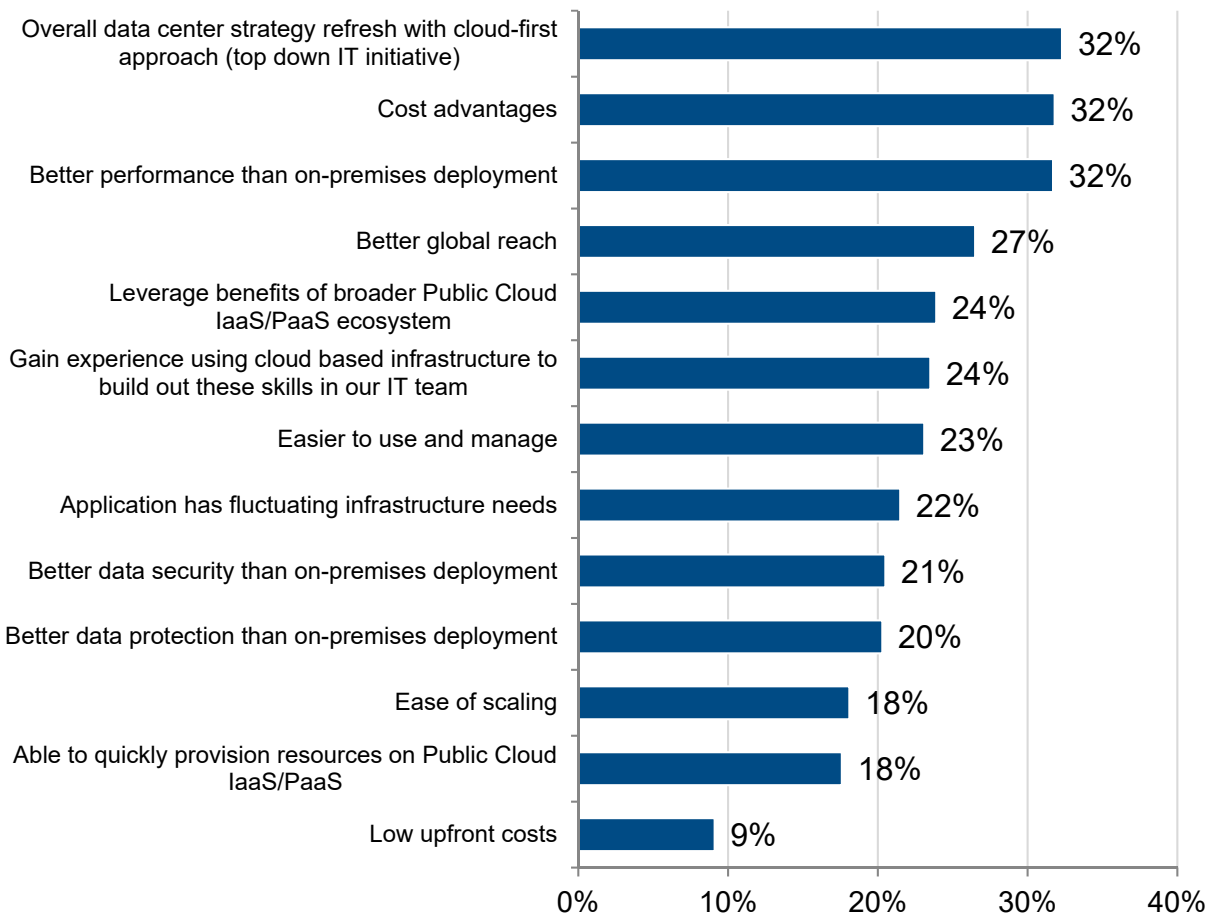
Public Cloud Drivers

Businesses are continuing to migrate applications to the public cloud for a number of reasons. One of the primary reasons is cloud enablement's strategic importance. Sometimes that is to put in place the platform that eventually will host more of the corporation's processes or workloads. Other times it is in recognition of the fact that adept use of public cloud services will soon be essential to business survival (thus encouraging companies to take on this learning curve before digital transformation becomes an existential crisis).

Another primary reason given by executives for moving to public cloud IaaS is to reduce data center management needs and reduce the overall cost of providing service (Figure 2). These cost reductions come from several factors:

▪ **Greater flexibility.** By offering extremely fast deployment and scaling, public cloud can be a boon to enterprises' agility as they seek to deploy and expand new capabilities. This improved agility can also help control costs for applications where usage is variable, unpredictable, or expected to grow or shrink rapidly. By paying only for actual usage, in these situations enterprises often find public cloud more economical than maintaining their own capacity.

▪ **Monitoring and control.** Public cloud often comes with monitoring and support capabilities that otherwise would require the enterprise's resources to develop, offering additional cost savings.

▪ **Better scalability.** Finally, public cloud infrastructure can scale more efficiently than in-house systems, meaning that the economics of scaling up applications can be very compelling for enterprises. Improved scalability also can reduce time to market for new capabilities.

FIGURE 2

Top Drivers in Choosing Public Cloud

Driver	Percentage
Overall data center strategy refresh with cloud-first approach (top down IT initiative)	32%
Cost advantages	32%
Better performance than on-premises deployment	32%
Better global reach	27%
Leverage benefits of broader Public Cloud IaaS/PaaS ecosystem	24%
Gain experience using cloud based infrastructure to build out these skills in our IT team	24%
Easier to use and manage	23%
Application has fluctuating infrastructure needs	22%
Better data security than on-premises deployment	21%
Better data protection than on-premises deployment	20%
Ease of scaling	18%
Able to quickly provision resources on Public Cloud IaaS/PaaS	18%
Low upfront costs	9%

Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, January 2017

Note that since most companies initially migrate existing enterprise workloads, capital cost avoidance, both near and longer term, is rarely a good incentive to adopt public cloud IaaS. If coordinated with a capital refresh, cloud deployment can reduce capital costs, but simply migrating existing workloads has little positive effect on CapEx. Rather, the promise of increased ongoing efficiency is what inspires companies to leap the gap.

Private Cloud Drivers

Enterprises moving to private cloud are still strongly motivated by reduction of their total cost of ownership while maintaining high performance, security, and IT control. It's probable that by the time they deploy a private cloud solution these enterprises have performed an economic analysis on private cloud IaaS versus public cloud IaaS infrastructure and are informed about likely cost outcomes in the shorter and longer term. By decoupling individual servers from specific workloads, private clouds can offer better utilization of resources than traditional infrastructure. They match capacity more closely with need and

increase the efficiency of provisioning. Likewise, adopters of private cloud IaaS may expect better ongoing operating cost performance than they would get from a public cloud IaaS alternative.

Organizations in this study that have migrated business applications from traditional infrastructure to private cloud has shown clear operating cost performance benefits such as:
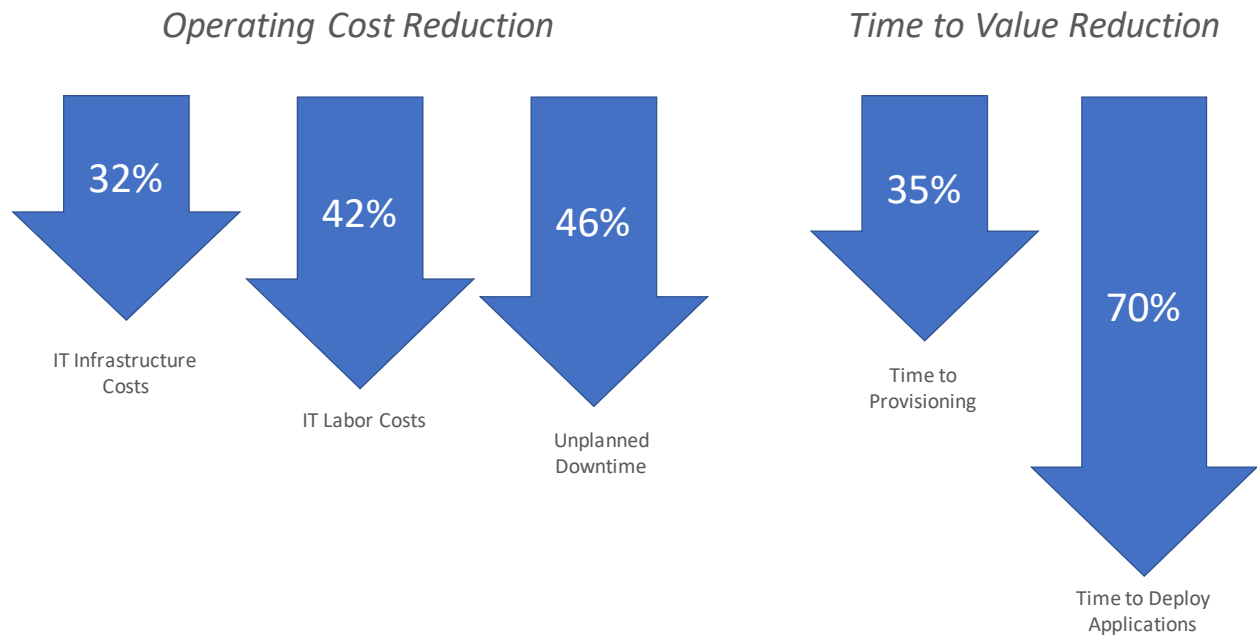
- Increasing scalability of infrastructure enables the reduction of infrastructure costs by 25% to 50% (an average of 32%).
- IT labor costs allocated to supporting IT infrastructure can be reduced by 25% to 70% (an average of 42%) by migrating from traditional infrastructure.
- Reduction of unplanned downtime - by 20% to 99% with an average of 46%.

Beyond mere virtualization, the private cloud offers enterprises additional benefits that stem from automation, orchestration, self-service, and improved visibility and control over costs.

Time to deploy applications also improved with private cloud over traditional infrastructure. IDC's analysis of companies using private cloud solutions reveals that time to provisioning decreases anywhere from 27% to 99% with an average of 35% reduction. Time to deploy applications decreases between 50% and 90% with an average decrease of 70% (Figure 3).

FIGURE 3

Average Improvement: Private Cloud over Traditional Infrastructure

Operating Cost Reduction

Time to Value Reduction

32% — IT Infrastructure Costs

42% — IT Labor Costs

46% — Unplanned Downtime

35% — Time to Provisioning

70% — Time to Deploy Applications

Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, January 2017

Speeding time to value helps create more productive users, improve customer satisfaction, and reduce compliance risk and the risk of data loss. Reducing ongoing maintenance needs gives technical staff an opportunity to spend more time and focus on activities that directly create new business value and to improve responsiveness to the business's needs.

After cost and performance, however, objectives differ between public and private cloud. Enterprises deploying private cloud are also strongly driven by expectations of improved security and compliance (Figure 4).

FIGURE 4

Top Drivers in Choosing Private Cloud
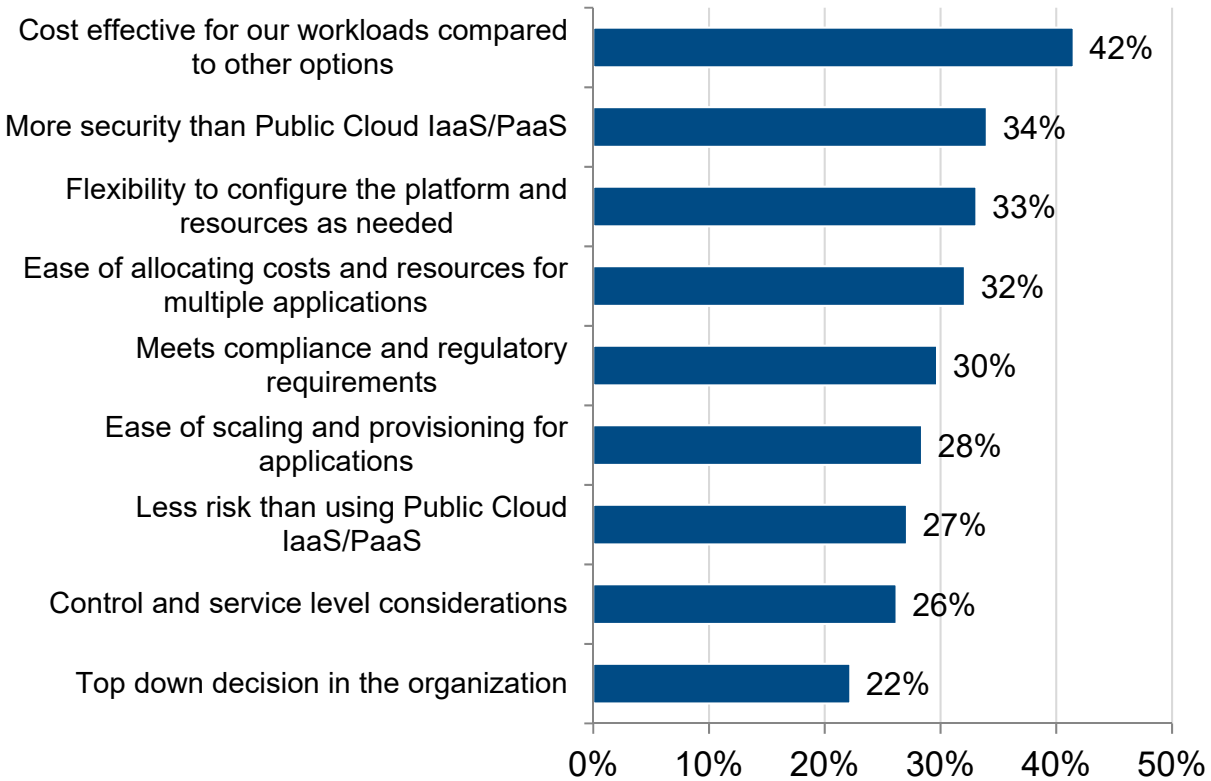
Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, January 2017

A good rule of thumb is that applications with predictable and relatively consistent usage over the next five years are likely to be more cost effective on private cloud while those with variable or unknown usage over the next five years are likely to be more cost effective on public cloud. IT buyers should consider these criteria when making platform decisions.

Another factor motivating the choice of public or private cloud infrastructure depends on the nature of the application's use case. Use cases requiring that a higher priority be given to security over access to a broad ecosystem tend to choose private cloud over public, and those favoring ecosystem access tend to go the opposite way. For example, a large financial institution will perform many operations of an extremely sensitive nature for which security requirements are paramount, such as those including customers' financial data. For these applications security is the primary requirement. However, this same institution also has low-security applications such as presenting its public-facing web content or running outbound marketing programs. For this second set of applications ecosystem support is likely to be more important. The institution may favor private cloud for the first set of applications and public cloud IaaS for the second. In this scenario, a hybrid cloud solution may be a good fit for the enterprise's total set of needs without encouraging the proliferation of platforms and vendors.

ANALYTICS IS A KEY CAPABILITY OF CLOUD SOLUTIONS

Beyond their shared interest in reducing cost while maintaining high performance, enterprises adopting cloud services have another common tendency, which is a propensity to employ data analytics in their business. In fact, more than 50% of data lake or data analytics environments are deployed on cloud services today. The most common applications for data analytics are operational data, customer data, and transactional data from point-of-sale systems. Services around data warehousing and Big Data analytics are the leading types of services among those which customers add on from their public cloud service providers (Figure 5).

FIGURE 5

Additional Services Employed from Public Cloud IaaS Providers
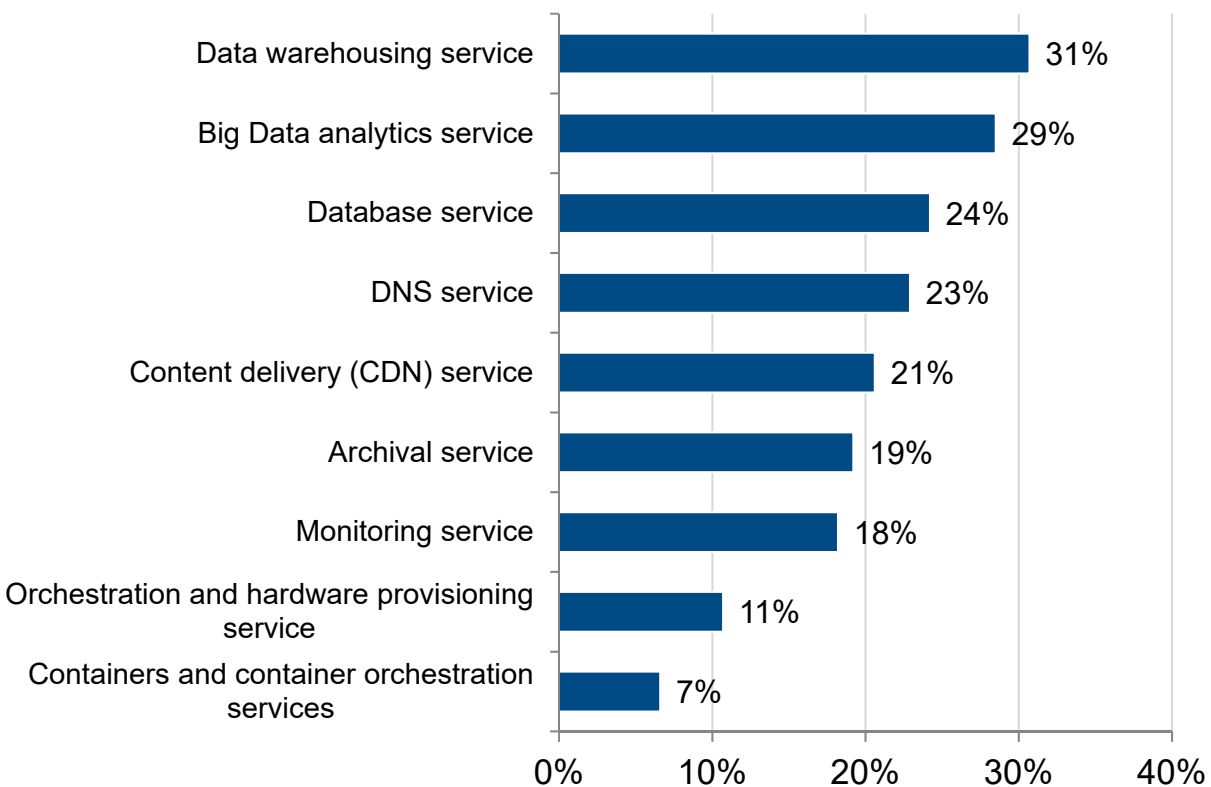
Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, January 2017

This propensity is due in part to the strong set of tools public cloud IaaS providers make available to their customers, particularly tools that help improve internal operations or provide better customer insights. This correlation owes itself to a two-way causal connection: Enterprises seeking to enhance their performance through data analytics are more likely to choose the IaaS solutions that facilitate data analytics, and at the same time, companies that settle on public cloud IaaS as their infrastructure of choice then find themselves able to explore opportunities for data analytics more readily than others.

Given scarce supply of IT skill sets and data analytics experts, analytics is a leading use case for public cloud IaaS, either on its own or in a hybrid cloud environment. Customers may bring their own licenses and deploy software on Infrastructure-as-a-Service or use adjacent public cloud services such as data warehousing and data analytics. It is likely that enterprises choosing public cloud or hybrid cloud are also influenced by use cases they would find challenging to deploy on premise, either on traditional or private cloud infrastructure.

Private cloud solutions are closing this gap, of course, with extensibility to add data services to the IaaS layer and with increasingly strong ecosystems. Enterprises that chose public cloud for its analytics capabilities in the past few years may find that private cloud offerings have improved since last they looked.

There are some marked differences between how high business performers and low business performers approach data analytics:

- **IT vs LOB ownership.** At high performing companies, data analytics initiatives are more likely to be driven by line-of-business (LOB) owners while at low performers these initiatives are more likely to be driven by IT. For instance, at high performers, engineering is nearly 50% more likely and customer support is more than twice as likely to sponsor Big Data analytics infrastructure than at low performing companies. Putting LOB owners in charge of data analysis is likely to be more effective in tying the data analytics effort back to the concrete initiatives that drive top-line business success. IT-driven data initiatives tend to be less directly shaped to deliver maximum impact and will have a greater tendency to become a technology in search of a problem to solve.

- **Focus on basics vs. driving strategic value.** High performers show less concern about cost and operational issues and more concern about maintaining flexibility and eliminating data lock-in. Consider this telling statistic: The number of low performers choosing cost as one of their most important decision criteria for Big Data analytics initiatives is more than 1.5 times the number choosing flexibility, but among high performers the number choosing using these two criteria is almost identical. Low performers are more focused just on implementing their analytics initiatives correctly while high performers tend to use more data analytics tools and set higher goals for data analytics initiatives. In other words, high performers task themselves with maximizing the potential for their data analytics initiatives while low performers are just trying to make sure everything runs correctly.

Successful analytics programs require that different constituents work in concert to achieve desired outcomes. These stakeholders include IT, data scientists, and line of business personnel. Although they share some common concerns and objectives, each faces a more nuanced set of challenges and priorities.

TOTAL COST OF OWNERSHIP

In its enterprise cloud survey, IDC gathered data on many factors contributing to these platforms' TCO. They included one-time up-front costs such as hardware infrastructure capital expenditures, data migration, and application development and ongoing costs such as licensing, maintenance, and the cost of downtime. IDC gathered this information separately for public and private clouds and calculated the average expected investment by enterprises of 1000 or more employees for both platform types, both initially and in total over the course of five years. We went on to calculate the difference in TCO for applications migrated from traditional infrastructure and net-new applications.

For traditional applications migrated to either public or private clouds, it is not surprising that public cloud IaaS–not requiring initial purchase of infrastructure–shows better TCO at the outset. After all, public cloud up-front setup costs (excluding year 1 usage costs) are slightly over half the costs for a private cloud. However, private cloud IaaS operating costs are less expensive by 25%, and in year 2 private clouds actually cross over to become less expensive than public clouds. By the end of the five-year measured period, a private cloud is on the average 16% less expensive cumulatively over the five-year period than a public cloud implementation (Figure 6).

FIGURE 6

Public vs. Private Cloud: TCO, per User, for Migrated Applications

5 Year TCO: Applications Migrated to Public or Private Cloud, Organizations with 1,000+ Employees (Includes Infrastructure, Licensing, Maintenance, Manpower and Training Costs)
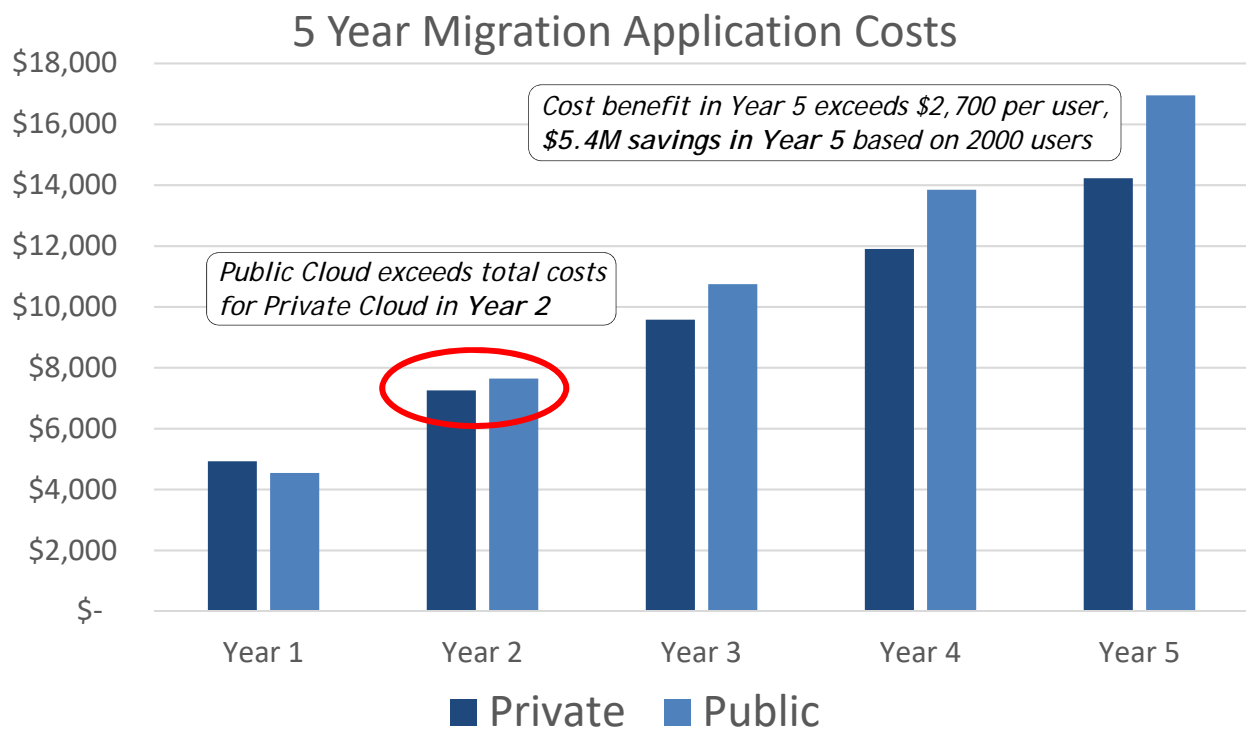
Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, March 2017

In short, customers interested in achieving only cost savings in moving existing workloads to public cloud will see a minor savings in year 1 with cost parity at year 2. After year 2, the costs with public cloud exceed those of private cloud. Thus, cost alone cannot be the factor in considering public versus private cloud infrastructure.

The economics are not so skewed against the public cloud for net-new applications. Up-front initial application setup cost (excluding year 1 usage costs) in this case is nearly three times the cost for private cloud as it is for public. Annual operation of private cloud IaaS is still less costly by 11%, so public cloud becomes more expensive by year 3. By the end of the five-year calculated period, private cloud

TCO costs cumulatively 6% less overall (Figure 7). This cost saving is very small and unlikely to motivate enterprises to choose one infrastructure type over another. Rather, decision makers should consider other factors such as security and control, need for tools and analytics services, and time-to-value when choosing between DIY private cloud, public cloud, and hybrid cloud.

FIGURE 7

Public vs. Private Cloud: TCO, per User, for New Applications

5 Year TCO: Cloud Native Applications on Public or Private Cloud, Organizations with 1,000+ Employees (Includes Infrastructure, Licensing, Maintenance, Manpower and Training Costs)

5 Year Cloud Native Costs
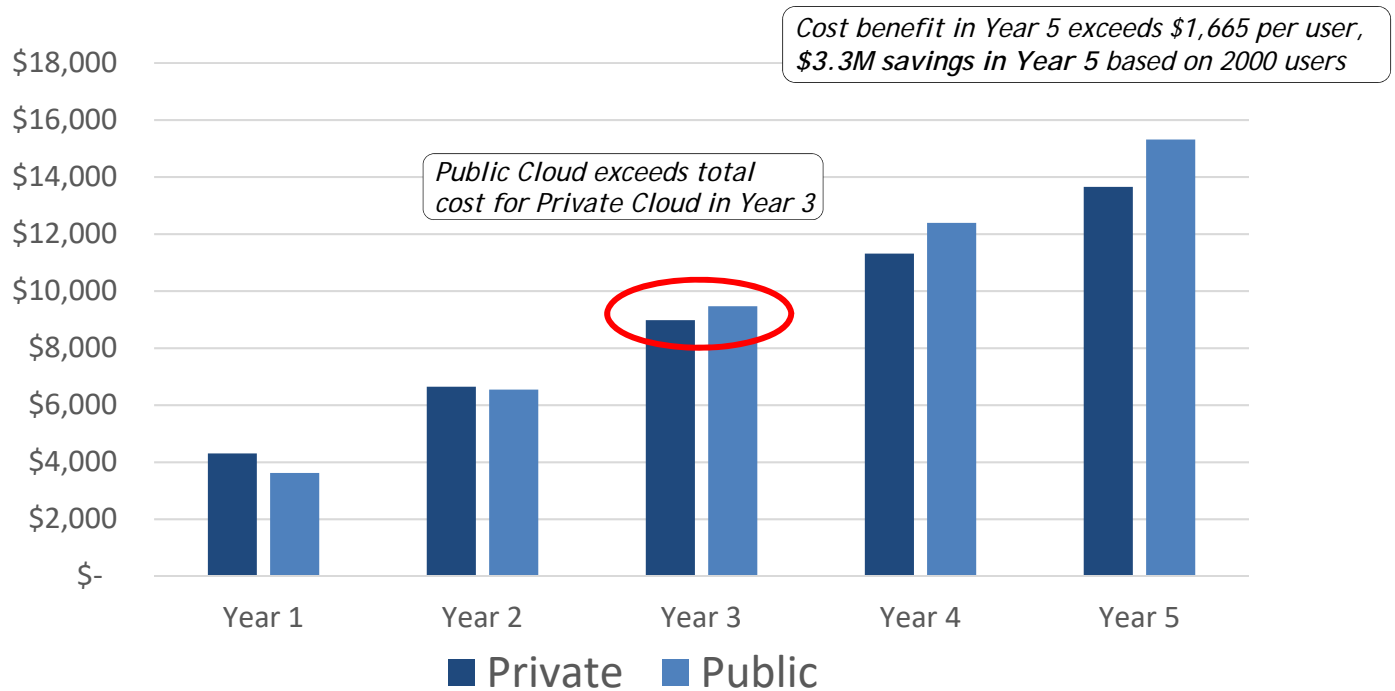
Source: IDC Hybrid Cloud Market Survey, Sponsored by Dell EMC, March 2017

CHALLENGES AND OPPORTUNITIES

Though the potential for cloud is strong, confusion about the best fit for public and private cloud combined with external pressured can result in hasty decisions by IT organizations. That results in a consistent set of challenges in their implementation and use, and introduces the risk that an enterprise may not realize the full expected benefits when migrating to the cloud.

Public Cloud Challenges

Top enterprise concerns around public cloud IaaS implementation include:

- **Cost of management and predictability of costs.** As with any relatively new family of technology solutions, enterprise cloud platforms are evolving quickly. That leads to additional, unforeseen management costs and a handicap in truly understanding up front what ongoing management costs will look like.

- **Worries over security.** Taking important business applications and confidential data out of the direct control of the CIO's office and putting it on a shared, public platform has proven to be a common source of anxiety for IT professionals.

- **Performance with traditional applications.** Likewise, administrators worry about the ability of a cloud platform to provide the same level of performance for mission-critical applications as they can deliver on their own infrastructure.

- **Public cloud lock-in.** After running applications on a public cloud, an enterprise can find itself with a large data set residing in that cloud accessed by applications coded to proprietary APIs and processes built around a proprietary toolset. These circumstances can make switching costs very high and limit flexibility.

Should concerns regarding cost variance, performance, and security become great enough, enterprises may choose to repatriate applications back into their in-house infrastructure.

DIY Private Cloud Challenges

Top challenges regarding private cloud IaaS, especially the build-your-own cloud, include:

- **Lack of access to value-added services.** Public clouds come with their own ecosystems of services. Whether these services are offered by the cloud platform provider or third parties seeking out new customers, they enable administrators to manage their cloud platforms. This issue is particularly challenging for DIY private clouds as the presence of a rich ecosystem and access to the broad set of services available on public cloud IaaS is increasingly viewed as a requirement for cloud platforms of any type.

- **Limited infrastructure and operations tools.** On traditional platforms, IT departments have come to expect and value an array of tools they can use to manage and operate systems. These tools can contribute ease and efficiency to provisioning, monitoring, maintenance, and troubleshooting tasks. Limitations in the power and variety of these tools can be a disadvantage for the DIY private cloud. Turnkey private cloud providers can get around this problem by providing a robust set of tools with their offerings.

- **Cost of operations and cost of management.** Enterprises venturing for the first time into the world of implementing, operating, and managing a private cloud often discover that the task is greater than they originally imagined. This mismatch between expected and actual ongoing costs is largely due to the less mature nature of private cloud platforms and the above-mentioned gaps in available tools. Enterprises often find themselves making up for these gaps with ongoing management tasks or additional development projects.

Attitudes to challenges vary somewhat between enterprises that prefer to build their own internal infrastructure appliances from individual components (piecing together server, storage, network, and software) and those that prefer to buy turnkey solutions. Enterprises with a propensity to build show greater concern about flexibility, cost of maintenance, and having enough internal expertise with the operating stack. Those with a propensity to buy show greater concern about time to value and the availability of value added services and tooling.

The gaps in both public cloud and private cloud offerings owe themselves to the organic nature of how these platforms developed. Providers originally targeted specific market segments or use cases

and optimized their platforms to match their particular needs. Public cloud platforms, for example, originally courted the business of small companies and startups with little in the way of existing systems. This freedom from legacy support requirements enabled these platform providers to architect their offerings from the ground up using what they felt was a better approach. Now, as the enterprise market becomes an important segment to public cloud vendors, they often find their platforms lacking in the kind of management tools IT managers have grown to expect from their experiences with their internal infrastructure.

As cloud platforms are now moving into the mainstream and proving to be valuable to enterprises of all types across many industries, these highly focused early decisions–even if they were the right decisions at the time for vendors with limited technology roadmaps–are now the source of much that threatens to hold back enterprise cloud adoption. In the medium-to-long term IDC expects vendors to continue closing these gaps, but for today and the near future enterprises should look carefully at these issues when considering cloud solutions.

The Opportunity with Turnkey Hybrid Cloud

A potential option for enterprises that are interested in private cloud IaaS but feel daunted by these challenges is a turnkey private cloud solution. Turnkey vendors take on all aspects of planning, building, deploying, and maintaining the private cloud. By integrating offerings from multiple vendors into a single platform based on direct knowledge of these products' proven interoperability, a turnkey vendor can take a great deal of risk and headache out of running a private cloud.

The additional value-adds in a typical turnkey solution include:

- Rapid deployment and time to first use with preinstalled, configured, and tested infrastructure, software, templates, and self-service catalogs
- Adjacent analytics services such as Hadoop, databases, or data warehousing along with necessary integration
- Integration with existing tools for infrastructure automation and orchestration
- Whole-system patching capability, which ensures firmware compatibility between patch groups
- Simplified, non-disruptive scalability
- Optional managed services, including ongoing operations and maintenance

Turnkey private cloud solutions are potentially a good solution for enterprises concerned about the availability of tooling and value added services. By delivering a complete, integrated solution that includes self-service tools for the customer to use, turnkey solutions can go a long way in alleviating these concerns.

Turnkey private cloud may also be a good alternative for enterprises worried about being locked into a public cloud solution and the proprietary tools and inconsistent processes that come along with it.

IDC GUIDANCE

In this study IDC's defined a set of high-performing and low-performing businesses, which have been able to achieve dramatically different business results (Table 2).

TABLE 2

Average Improvement over Past Three Years

Business metric	High performers	Low performers
Revenue or sales/bookings	37.9%	7.9%
Profit margin	41.5%	7.8%
Customer satisfaction/loyalty	38.3%	8.3%
Revenue from new products	42.5%	8.2%
New customer acquisition	36.1%	8.2%

Source: IDC, March 2017

When it comes to infrastructure choices, high performing businesses tend to be more innovative and customer-focused. They use more data platforms, and data analytics initiatives emanate from business units as opposed to IT departments. Low performing businesses tend to be heavily focused on budget and security concerns.

High performers are aspirational in their data initiatives. They dislike limitations on what they can do and attribute high value to innovation and flexibility. Low performers give heavy focus to cost reduction, employee efficiency, security and compliance. In short, high business performers tend to see the potential in data initiatives while low performers tend to see difficulty.

Cloud adoption is critical to any IT transformation effort. As enterprises take this important step, they should consider platform and solution options carefully. Choices made today can influence outcomes for years in the future. In that evaluation, IT buyers should look not only at the capabilities of platform architectures today but also what those capabilities will look like in a few years. For example, while public cloud options may lack the security profile some enterprises require, vendors in this space are working hard to close that gap. Or if the private cloud approach falls short on the available services an enterprise might seek to augment its performance today, buyers should expect to see a richer set of offerings in the coming years.

There is not necessarily one cloud architecture that is best for all types of workloads. From a cost optimization perspective, applications with unpredictable or changing workload sizes are likely to be better candidates for public cloud architecture. Applications with predictable and relatively consistent workload sizes are good candidates for private cloud architecture. However, IT buyers should be aware that expectations for cost savings with private clouds tend to exceed the actual savings realized. Make sure you look also to other benefits such as speed of provisioning or better availability of tools when considering private cloud IaaS as an option. A hybrid cloud solution has the potential to provide the best architecture for various workloads while still maintaining a single point of control.

Enterprises that care about time to value would do well to consider a turnkey hybrid cloud solution. In addition to lowering total cost of ownership, a turnkey hybrid cloud solution can quickly enable delivery of private and public cloud services to internal teams by way of a managed and integrated catalog of services. Hybrid clouds help maintain the levels of security and compliance required for sensitive or mission-critical enterprise applications while enjoying enhanced flexibility and time to delivery. As they make the inevitable move to an enterprise cloud, companies seeking to maximize their agility and speed while still meeting their other requirements should think about a turnkey hybrid cloud approach.

About IDC

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