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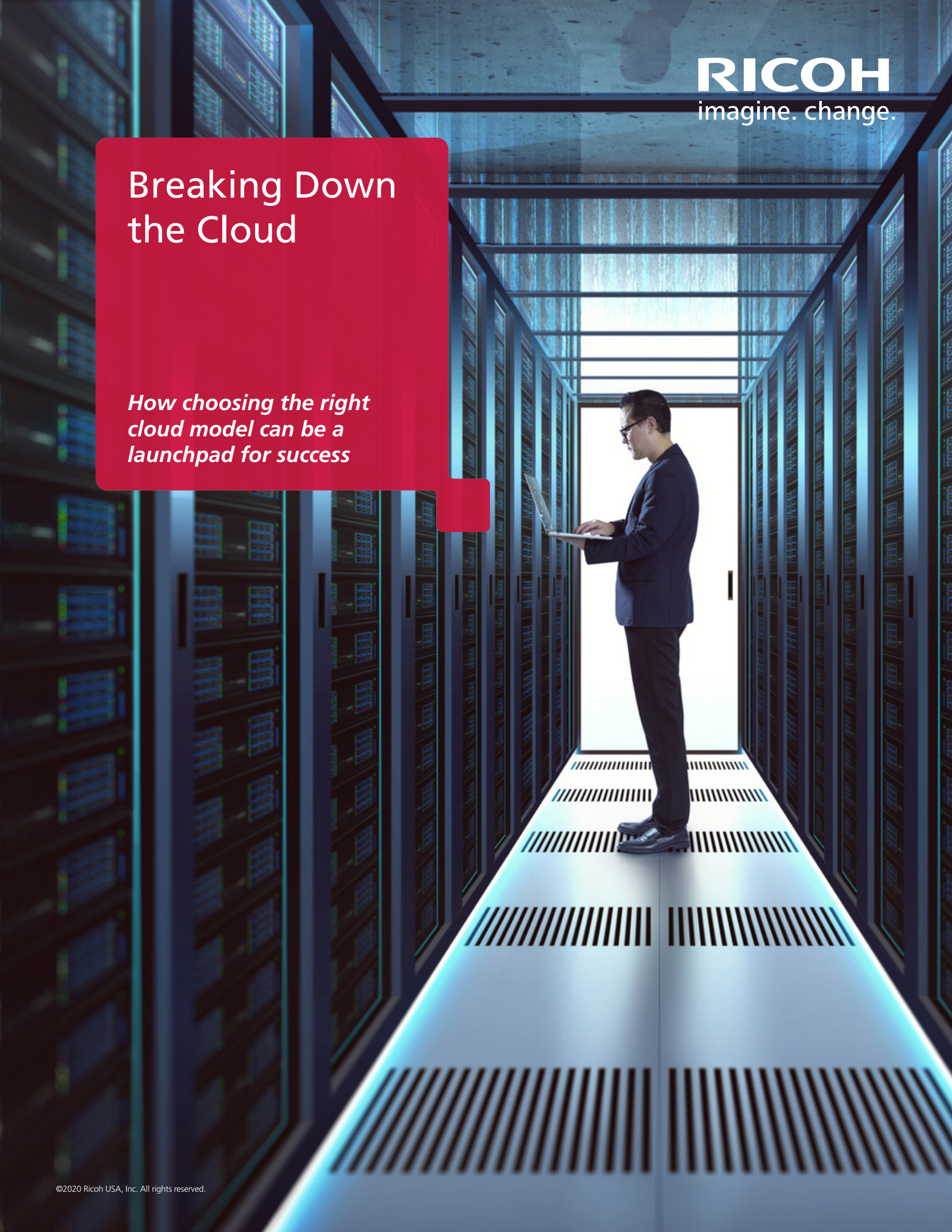
Breaking Down the Cloud

How choosing the right cloud model can be a launchpad for success



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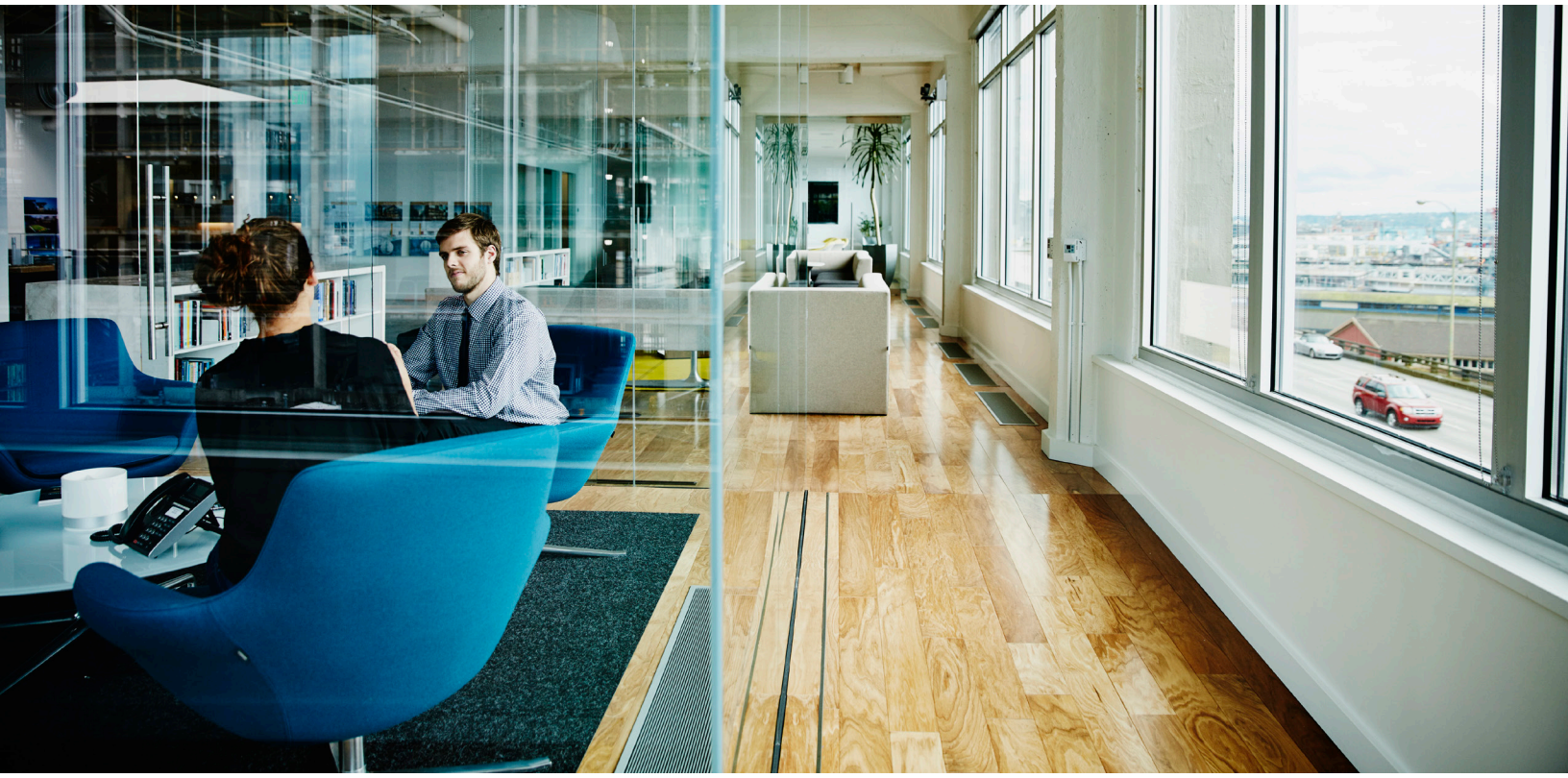

Introduction: Creating value through the cloud

Cloud computing and storage are no longer a new business concept, but cloud continues to dominate headlines, and for good reason. Over the past decade, cloud architectures have transformed the way IT services are delivered — a resource-optimized platform that minimizes waste and maximizes business value.

Cloud architectures, for instance, are much more capable of scaling to unpredictable demand levels than traditional IT architectures. This is largely because in a cloud, resources such as processing power, storage and memory are allocated in a fluid fashion as required, rather than in a static fashion that ties resources to specific tasks. Virtual servers are created from scratch dynamically, based on policies and usage demands, rather than projections or best guesses. Some clouds, in fact, can support the automatic creation and ongoing management of entire IT services with little or no help from IT team members.

Furthermore, the business advantages are as compelling as the technical advantages. For instance, new service rollout is typically much faster because the process skips the traditional long cycle of procuring, configuring and deploying new hardware; the existing cloud simply takes on a new role. And, with faster rollout comes not only enhanced business agility but also a more competitive posture and, ultimately, higher customer satisfaction, market share and revenues.

The cloud's largely automated, virtualized design thus helps shift the focus away from technical tasks and toward what matters most: accomplishing business goals as quickly, comprehensively and cost-effectively as possible.

That said, getting the best results from the cloud will mean carefully selecting a cloud model that closely matches your needs, business goals and strategies, customer and user expectations, and the specifics of your applications and services — in short, your complete business context.

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The three cloud models, each with strengths and challenges.

Definitions of cloud models are in a constant state of evolution and can vary from source to source as organizations develop new variations. Even so, the general principles remain the same of the three common cloud models: private, public and hybrid.

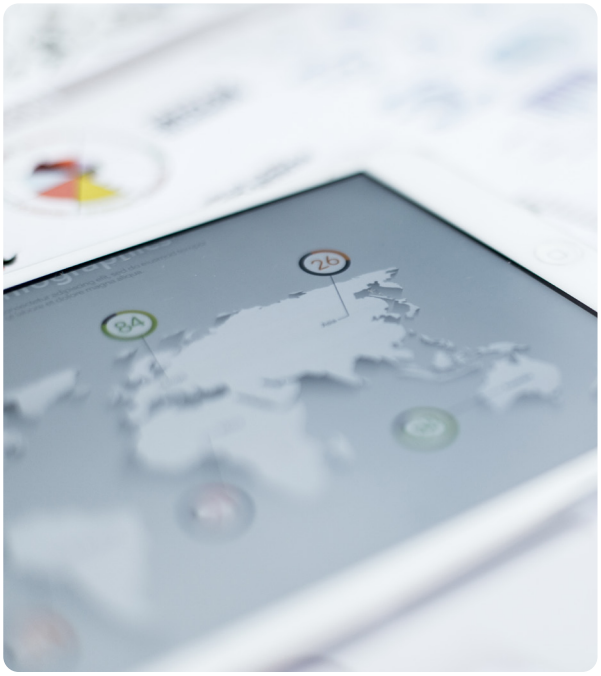
Private

Private cloud architectures are typically those in which the cloud is restricted to a single organization's use. Traditionally, that meant the organization actually owned and managed the infrastructure of the cloud — the sum total of its hardware, software and resources — and that infrastructure is deployed on a physical site owned and managed by the organization as well.

The downside of this model is that owning your own private cloud requires high initial investment (capital expenditure), deployment complexity, and ongoing management costs. To today's CFO, who typically wants to minimize capital expenditure, these traditional private cloud models may not be the best choice — especially if the intended applications or services can be served under another operating model.

Fortunately, as cloud technology evolves, so to do the service capabilities of cloud providers. This includes the development of cloud environments for the sole use of one customer, yet the cloud infrastructure is owned and managed by the provider itself, on its own premises. A second possibility is colocation, in which the cloud architecture is actually owned by the organization using the cloud, but located on the premises of a third-party host.

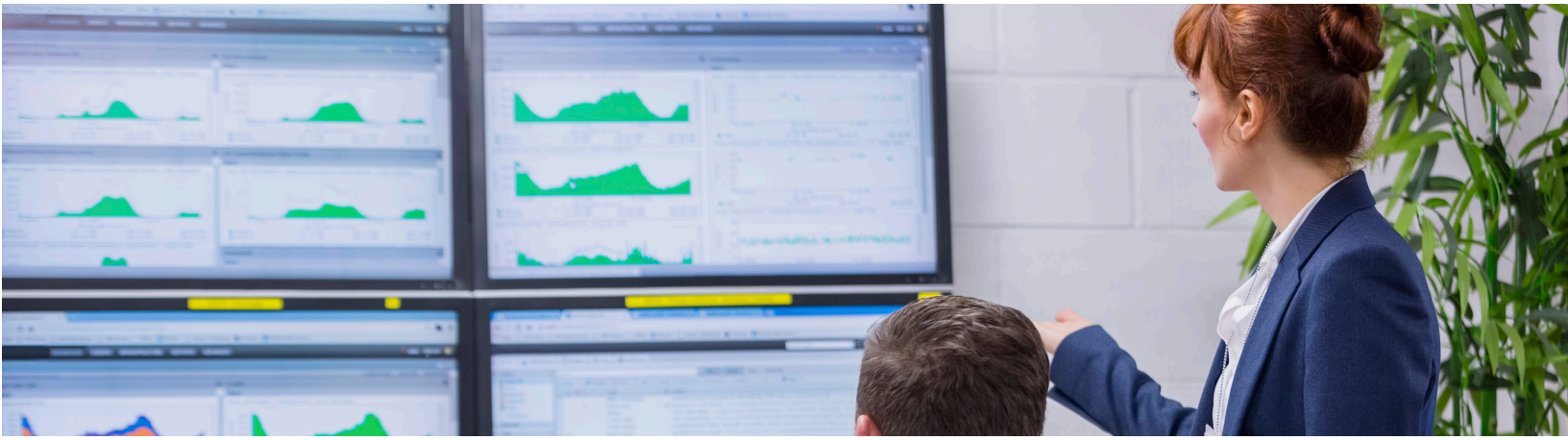
These models may appeal to organizations who know they will want the full resources of a cloud available to them at all times, yet lack the internal expertise,



data center floor space or other necessary resources to implement or manage a cloud themselves.

However you choose to deploy, a private cloud delivers the greatest level of control, and since no other organization can use the cloud, its full capabilities are available solely to its owner. Private clouds are well suited to host the most crucial applications, the most sensitive customer data and any context in which security is expected to be a mission-critical consideration.

When the private cloud sits within the organization's existing security architecture, it inherits that architecture's layer of protection and internal security expertise. However, if you are working through a cloud provider whose services are built on an enterprise-class infrastructure, you will often benefit from their advanced security capabilities.



Public

The commodity public cloud model is still the most common and widely utilized cloud model. In this model, the organization does not create, own or manage the cloud infrastructure per se; instead, it buys the capabilities and services of a third party's (a cloud provider's) cloud on a yearly, monthly or even hourly basis.

The inherent strengths of clouds — high scalability, flexibility and automated resource allocation — still apply in this case, but the organization need not concern itself with the technical implementation. Instead, it can simply treat the cloud almost as a utility, such as electricity or water — a resource it can draw upon for whatever is needed.

And like a utility, the pay-as-you-go pricing structure reflects real-world use. The more the organization leverages the public cloud, the higher the operating expenditure will be, but if utilization is low, so too, will be the bill. Certainly the fact that there is no capital expenditure for these workloads is also likely to appeal to the CFO.

One possible drawback of a commodity public cloud is the flip side of that coin. Since the cloud is owned and managed by someone else, the cloud provider's customers cannot know how other clients of that provider are using the same architecture — how many other services and applications might be running in parallel, or how well the cloud will be able to respond at times of peak demand.

Fortunately, established enterprise-class cloud providers, guided by years of successful engagements and best-in-class capacity planning capabilities, are well prepared to address these concerns.

Because they are focused exclusively on cloud services — not all the services supported by internal IT teams — such providers can typically deliver a faster response to emerging technical problems, and more effective resource allocation in general, than their IT counterparts. This translates into improved agility and scalability for all of their clients.

Hybrid

Hybrid clouds have emerged as a favorite model in which the strengths and weaknesses of the two other models can be balanced. Particularly for organizations with more individual requirements, it might be desirable to have a private cloud for certain applications, services and data, over which maximum control can be exerted, while also utilizing an enterprise-class public cloud for other applications.

Hybrid models are tailored to specific needs — some companies choose a hybrid cloud environment to keep workloads on-premises. Either they have security and privacy concerns, regulatory concerns or internal policies and procedures that do not allow for a full cloud deployment. By choosing a hybrid solution, they're able to extend computing power while still meeting these requirements.

Other companies are using a hybrid environment to buy time as they prepare for a full cloud migration. On-premises applications need to be readied for cloud deployment, which takes time and resources that some organizations can't spare immediately.

Here are 4 ways the hybrid cloud model can transform your business:

1. Increase data center capacity while reducing costs and satisfying compliance requirements
2. Modernize legacy applications like ERP, CRM and customer-built apps
3. Reduce disaster recovery and high availability service costs
4. Transform the data center to an automated, end-user-friendly, self-serve function

Finally, some companies are simply looking for more resources for their applications. Often, these organizations have small IT departments that need to prioritize their focus, and the hybrid cloud allows the team to focus on strategic applications instead of putting out fires.

Whichever scenario best describes your organization, hybrid cloud deployment allows all companies to take advantage of scalable computing power to meet workload demands in a pay-as-you go model, while still keeping data secured. This turns computing resources into an operating expense versus a capital expense. It also enables business agility, allowing these companies to quickly run new applications without new infrastructure.

In addition, using a hybrid cloud model, organizations can eliminate the need to spend money on dedicated facilities and infrastructure for disaster recovery and high availability services that would remain idle most of the time. Hardware currently dedicated to backups can then be used for another IT function, which saves on disaster recovery costs and non-hardware provisioning.

Many factors to consider in choosing the right model

In selecting a suitable cloud model for your needs, it is important to take into account a number of different factors, spanning both technical and business concerns.

Security

From boardroom executives who have been reluctant to deploy services in a cloud, to IT managers responbile for key infrastructure decisions, security is common concern that is considered when deciding to move to a cloud model.

Security threats today are both more diverse and more sophisticated than ever before. Historical threats such as malware have evolved to the point where certain worms and viruses can anticipate what an organization will do in response to them and adapt proactively to avoid detection or eradication — up to and including pursuing multiple, completely different attack vectors. While yesterday's individual hackers were often motivated by curiosity, today's criminal organizations are often motivated by profit — and are pursuing security shortcomings far more swiftly and aggressively than their hacker predecessors.

And many studies suggest that external threats like that are collectively trumped by internal threats, such as the possibility that a trusted insider with high access privileges will take advantage of those privileges for personal reasons (such as profit, career advancement or revenge).

For the most security-conscious services and applications, therefore, a private cloud may be best suited because of the higher implied control. That said, not all cloud providers are created equal, and some are much better informed about both security threats and the available options to mitigate those threats than others. Some cloud providers, in fact, may have an exceptional command of security expertise by virtue of the fact that their entire business model revolves around being able to offer secure services despite a cloud architecture that was specifically designed for public access.

This is particularly true if the underlying cloud or virtualization technology on which they base their services comes from vendors who are trusted industry leaders, with deep experience in security and a long history of successful engagements.

Performance

How well will a cloud architecture respond to spikes in workload demand levels — or support new services, as more and more are added to it? This basic question of performance is one that must be taken into account when selecting a suitable cloud model.

A private cloud may offer the highest level of performance, access or maximum control simply because no other organization will have access to it. On the other hand, it will also increase capital investment because it will have to be designed, paid for, implemented and integrated with the existing IT infrastructure. It will also have to be managed over time. Cloud data will need to be backed up and archived in accordance with government regulations as well as internal specifications. This creates more cost and complexity for the organization.

In contrast, public clouds have the attractive benefit of absolving the organization of all such costs and responsibilities. Public clouds also deliver accelerated time-to-market for new services because the cloud is already up and running and can be utilized by new clients at will — often in less than a single business day.

For organizations who identify with both needs, a hybrid cloud environment might thus be, from a business standpoint, the logical choice, providing proper support for applications where extraordinary performance is required as well as more cost appropriate support for those where it is not.

Compliance

Government, industry and other regulations such as SSAE, SOX, PCI, GDPR and HIPAA, already a significant headache for IT managers and business executives alike, represent another variable to ponder. They're also a headache that increases over time as the total number of regulations grows.

Will applications/services involve compliance complexities, and if so, what might those be? Will the organization be able to meet the complex and ever-changing terms of regulations continually — and demonstrate that compliance quickly and easily in the event of an audit?

These questions should be answered as part of the process of selecting a cloud model. In the case of a public or hybrid cloud, it will be important to establish that the cloud provider is up to the compliance challenge (should there be one).

Ease of management

One relatively subtle factor of note is the management learning curve: the extent to which new developments in the evolving IT infrastructure can diminish the organization's business agility as a result. Some services and applications, which continue to run on the current infrastructure, can be managed in the usual way. But others, running in the cloud, may require a new management paradigm — something that must be learned well in advance of creating actual business value.

Fortunately, this is not always necessary. In certain cases, cloud hosts may have deployed underlying technology — a virtualized foundation— that is already used in your infrastructure today, and which, because of that, is managed in the same way. This option, if available, means that moving certain services or applications into a compatible public cloud may not involve any significant management learning curve at all.

Additionally, with the increased acceptance of "as a service" support models, many companies are choosing to simply rely on their cloud partner to manage everything for them, while still receiving the flexibility, scalability and cost-efficiency benefits inherent in cloud-based infrastuctures.

Elements to look for in a cloud provider

Toward developing a cloud plan that's optimized for your requirements, you'll need to understand just what a cloud provider can bring to the game — and how its strengths can help you achieve a superior business outcome.

Expertise in, and support for, multiple cloud models.

The best cloud providers can work with you to develop a tailored cloud implementation tuned to your needs — governed at every stage by your context, rather than their limitations. Whether a private, public, or hybrid model is chosen, a trusted IT partner can help you reduce your costs and risks, accelerate cloud service rollout and collaborate with you to achieve your business goals faster and more comprehensively.

A history of success with organizations of different sizes, in different industries and with different needs.

A superior cloud provider should be able to support the cloud requirements of almost any client, taking into account the specific issues, such as regulation compliance, performance and security that typically distinguish one industry or organization from another.

A solid foundation of core technology from industry leaders.

Best-in-class solutions that fulfill key cloud capabilities such as virtualization, server provisioning and security, will be required for a best-in-class cloud, regardless of the model chosen.

24/7/365 service and support.

If your cloud services develop technical issues, how responsive will your cloud provider be? You need to have confidence in your support team, knowing that you'll be covered 24/7/365 by live human assistance that's just a phone call away. You will also need to work with your provider to build out your environment: deciding which legacy applications to move, how to interconnect them with cloud resources or creating infrastructure and processes to support disaster recovery and high availability.

Conclusion

The business benefits of the cloud are clear, but for many IT decision makers, the path to cloud implementation is not. Each cloud model offers its own set of strengths and weaknesses and many business and technical factors must be considered. Choosing the right cloud provider with expertise in the cloud model and solutions you need based on proven technology is key to achieving the increased business agility and flexibility, reduced capital and operating expenses and improved business continuity.

Ricoh works with business and IT leaders to align cloud solutions with business strategy. By partnering with your leadership teams and IT staff, we can help to transform your business — making it easier for you to gain valuable data insights, drive innovation, increase productivity, improve customer relationships and help keep information safe.

To find out how Ricoh can help you choose the right cloud environment that will serve as a launchpad for future business growth, please visit our website.

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