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Choosing the best cloud computing model for your business

How the right model can be a launchpad for success
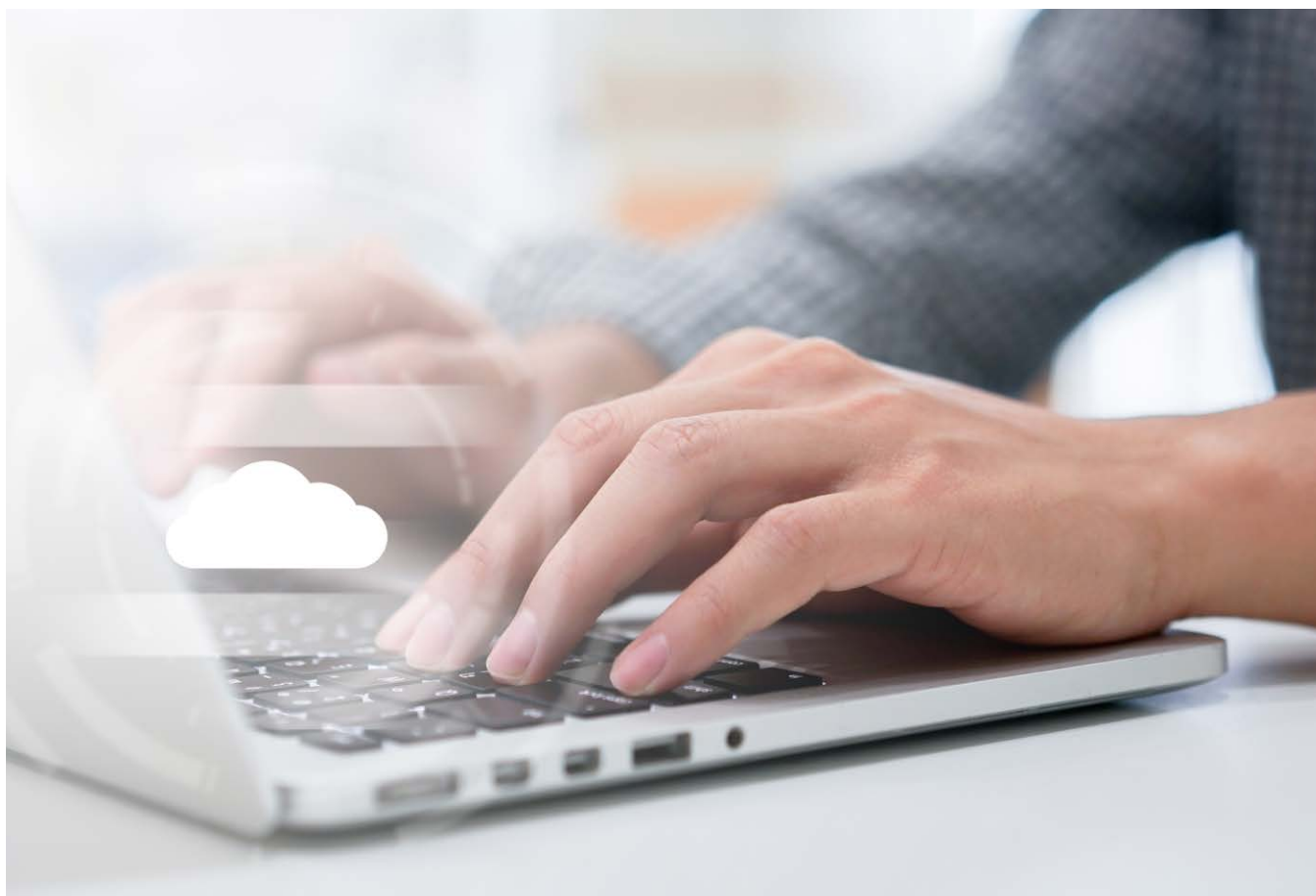
Choosing the best cloud computing model for your business

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Creating value through the cloud

Cloud computing and storage solutions are no longer new, but the technology continues to dominate headlines for good reason. Newer cloud architectures — the configurations of software, devices and other components that form a cloud — are transforming the way IT services are delivered. They are better able to protect data, support business continuity, accelerate rollouts, and improve the accessibility of applications for remote and hybrid employees.

Cloud solutions are also much more capable of scaling to meet unexpected surges in demand, representing a major leap forward in IT disaster recovery. Resources such as processing power, storage and memory are allocated in a fluid fashion, as needed, rather than in a static fashion tied to specific tasks. Virtual servers are created dynamically, based on policies and usage, rather than projections or best guesses. Some clouds, in fact, allow automatic creation and ongoing management of IT services, freeing staff for other strategic IT initiatives.

> *" Getting the best results depends on selecting a cloud computing model that matches your business needs, goals and strategies, customer and user expectations, and the specifics of your applications and services. "*

The business advantages are as compelling as the technical advantages. New service rollouts are typically much faster because the long traditional cycle of procuring, configuring and deploying new hardware is bypassed; rather, the existing cloud simply takes on a new role. Faster rollout means not only enhanced business agility, but also a more competitive posture, and ultimately higher customer satisfaction, market share and revenues.

The cloud's 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, dynamically and at scale.

Getting the best results depends on selecting a cloud computing model that matches your business needs, goals and strategies, customer and user expectations, and the specifics of your applications and services. This whitepaper provides an overview of the three dominant cloud computing models, along with the pros and cons of each, and factors to consider in determining the right model and cloud provider.

The three cloud models:

Strengths and challenges
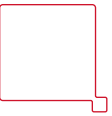
The definitions of cloud models are constantly evolving and can vary from source to source as new variations are created. Still, the general principles of the three most common cloud computing models — private, public and hybrid — remain the same.
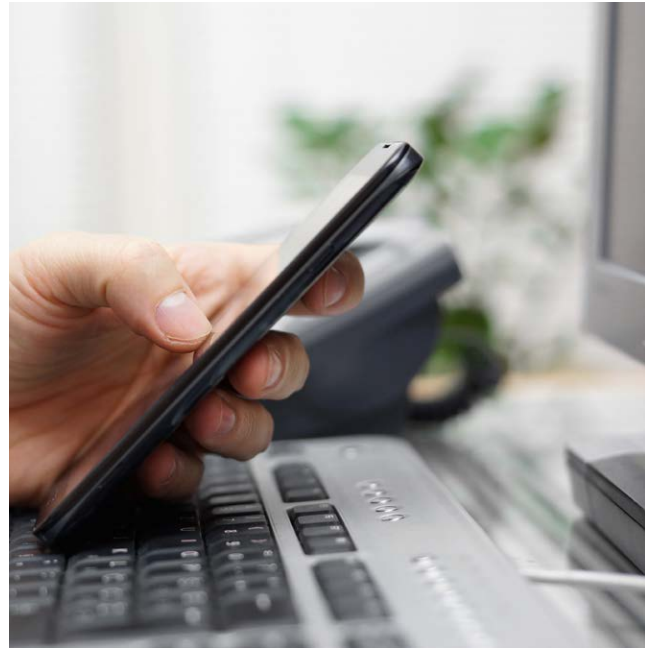
Private

In the private cloud computing model, the cloud is typically restricted to a single organization's use. Traditionally the organization owns and manages the cloud infrastructure, including all hardware, software and other resources, and this infrastructure is deployed on a physical site that is also owned and managed by the organization.

The downside of this model is that owning your own private cloud requires high initial investment, complex deployment, and ongoing management costs. For a CFO who wants to minimize capital expenditures, the traditional private cloud model may not be the best choice — especially if the intended applications or services could be supported by another model.

Fortunately, as cloud technology evolves, so do the service capabilities of cloud providers. Options now include cloud environments developed for the sole use of one customer, but owned and managed by the provider, on its premises. Another option is colocation, in which the cloud infrastructure is owned by the organization using it but located on the premises of a third-party host.

These models may appeal to organizations that want the full resources of a cloud available to them at all times, but lack the internal expertise, data center floor space, or other resources needed 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 it, its full capabilities are available solely to its owner. Private clouds are well suited to hosting the most crucial applications, highly sensitive customer data, and any context in which security is a mission-critical consideration.

When a private cloud sits within the organization's existing security architecture, it inherits that architecture's layer of protection and internal security expertise. Therefore, if a cloud provider's services are built on an enterprise-class infrastructure, you stand to benefit from its often more advanced security capabilities.

Strengths and challenges Continued
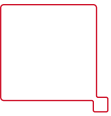
Public

The commodity public cloud computing model is still the most widely used. In this model, the organization does not create, own, or manage the cloud infrastructure; instead, it procures the capabilities and services of a third-party provider's cloud on a yearly, monthly, or even hourly basis.

This enables the organization to gain the advantages of cloud computing, such as high scalability, dynamic flexibility, and automated resource allocation, but outsources the technical implementation. It can then treat the cloud as a kind of utility, such as electricity or water — a resource to draw upon whenever needed.

And as with a utility, the pay-as-you-go pricing structure reflects real-world use: The more the organization leverages the public cloud infrastructure, the higher the operating expenditure. If utilization is low, so is the cost. Since it involves no capital expenditure, the public cloud computing model is likely to hold greater appeal for CFOs.

One possible drawback of a public cloud is on the other side of that coin. Since the cloud is owned and managed by the cloud provider, it is impossible to know how that provider's other clients are using it. The number and resource intensity of other services and applications running in parallel could impact the cloud's ability to respond with agility when demand at your organization peaks.

Fortunately, established enterprise-class cloud providers, guided by years of successful engagements and best-in-class capacity planning, are well prepared to manage such issues. Because they are focused exclusively on cloud services, they can typically respond more quickly to emerging technical problems and allocate resources more effectively. This translates to improved agility and scalability for their clients.

Strengths and challenges Continued
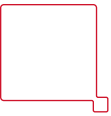
Hybrid

Hybrid clouds have emerged as a favorite cloud computing model, as they balance the strengths and weaknesses of the other two. A hybrid cloud architecture can be an especially good choice for organizations with more individual requirements. It allows them to have a private cloud, and therefore maximum control over certain applications, services, and data, and also utilize enterprise-class public cloud computing for other applications.

Hybrid models are tailored to specific needs. Some companies opt for a hybrid cloud solution to keep workloads on their premises, whether due to security and privacy concerns, regulatory concerns, or internal policies that prohibit full cloud deployment. A hybrid model enables them to extend their computing power and still meet these requirements.

Other companies adopt a hybrid cloud architecture on an interim basis as they prepare for a full cloud migration. Preparation generally consists of readying on-premises applications, which takes time and resources the organization may be unable to spare.

Finally, some companies are simply looking for more resources for their applications. Often these organizations have small IT departments that need to prioritize their responsibilities. The hybrid cloud model allows their team to focus on strategic applications rather than putting out fires.

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

In addition, by using a hybrid cloud model, organizations can eliminate the costs of dedicated facilities and infrastructure for disaster recovery and high availability services that sit idle most of the time. Hardware currently dedicated to backups can be reallocated to other IT functions, saving disaster recovery costs and non-hardware provisioning.

Four 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. Upgrade the data center to an automated, user-friendly, self-serve function

Choosing a cloud computing model
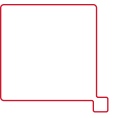
In selecting the right cloud model for your business, there are several important factors to take into account, addressing both technical and business concerns.

Security

From boardroom executives who are reluctant to deploy services in a cloud to IT managers responsible for key infrastructure decisions, security is a common concern in cloud migration.

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

And yet, many studies suggest that these external threats are collectively trumped by internal threats, such as the trusted insider who takes advantage of their high access privileges for personal reasons, whether profit, career advancement, or even revenge.

In light of security concerns, private cloud services may be best suited to more sensitive data and applications, owing to a perceived higher level of control. It is important to bear in mind, however, that not all cloud providers are created equal. Some are much better informed than others

about security threats and the options for mitigating them.

In fact, some cloud providers may have an exceptional command of security issues and solutions by virtue of their business model revolving around the ability to offer secured services, even within a public cloud architecture. This is especially true if the cloud or virtualization technology underlying their services comes from 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? The basic question of performance must be considered when selecting a cloud computing model.

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

In contrast, the public cloud computing model eliminates all such costs and responsibilities. Public clouds also deliver accelerated time to market for new services, because the cloud is already up and

Choosing a cloud computing model Continued
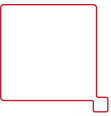
running and can be used by new clients at will, often in less than one business day.

For organizations that identify with both needs, hybrid cloud solutions might be the logical choice from a business standpoint — if the solution offers proper support for applications that require extraordinary performance and more cost-effective support for those that do not.

Compliance

Government, industry and other increasingly onerous regulations such as SSAE, SOX, PCI, GDPR and HIPAA represent another variable to think about when choosing a cloud computing model.

Will applications and services involve compliance complexities, and if so, what might those be? Will the organization be able to meet the intricate

and ever-changing terms of regulations, 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 whether the cloud provider is up to the compliance challenge, should one occur.

Ease of management

One relatively subtle factor is the management learning curve; that is, the extent to which new developments in the evolving IT infrastructure might diminish the organization's business agility. Some services and applications that 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, which must be learned well in advance of creating actual business value.

Fortunately, this is not always necessary. In certain cases, cloud hosts may have underlying technology — a virtualized foundation — that is already used in your organization's IT infrastructure and therefore managed 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 gaining the inherent flexibility, scalability and cost benefits of a cloud-based infrastructure.
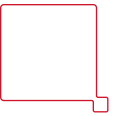
Cloud provider

In developing a cloud plan that's optimized for your requirements, it is important to understand just what a cloud provider brings to the table, and how its strengths can help you dramatically enhance business outcomes.

Expertise in and support for multiple cloud computing models

The best cloud providers can work with you to develop a cloud implementation that is tailored to your needs — governed at every stage by your context, rather than their limitations. Whether you opt for a private, public, or hybrid cloud computing model, 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 fully.

History of success with organizations of different sizes in different industries with different needs

A superior cloud provider should be able to support the cloud requirements of nearly any client, taking into account the specific issues, such as regulatory compliance, performance and security, which generally 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, are essential to a best-in-class cloud, regardless of the model chosen.

24/7/365 service and support

If technical issues with your cloud services arise, how responsive will your cloud provider be? You need to have confidence in your support team, knowing you'll be covered at all times by live human assistance that's a phone call away. You will also need the support of your provider to build out your environment. This includes deciding which legacy applications to move and how to interconnect them with cloud resources, or creating infrastructure and processes to support IT disaster recovery and high availability.
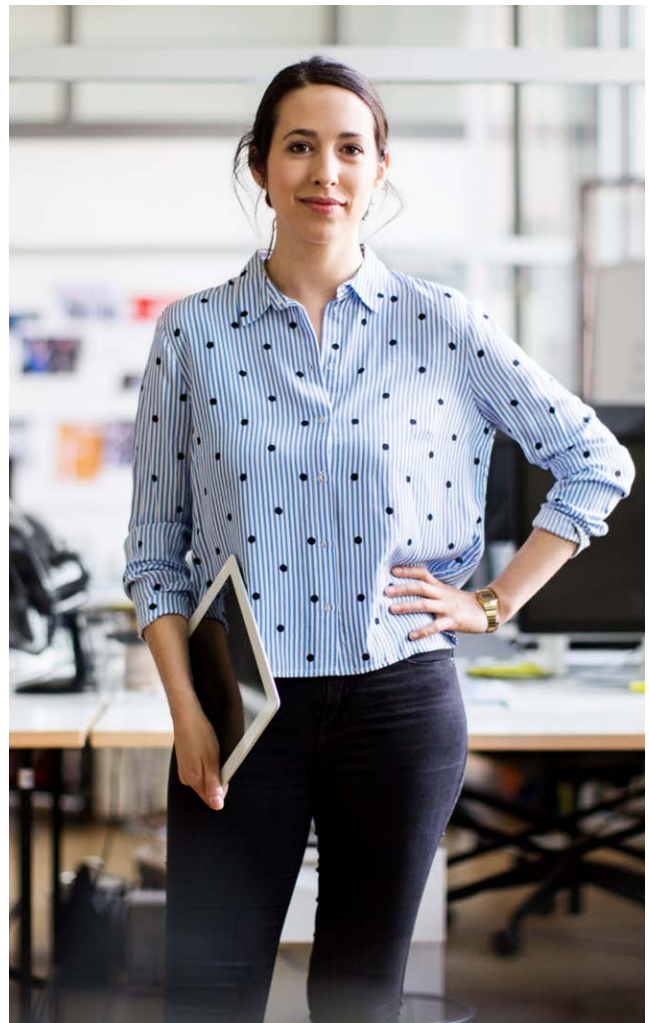
Conclusion

The business benefits of the cloud are clear, but for many IT decision makers, the path to cloud implementation is not. Each cloud computing model has its 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 increased business agility and flexibility, reduced capital and operating expenses, and reliable cloud disaster recovery services that support 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 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 a cloud computing model that will serve as a launchpad for future business growth, please visit our website.

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