

GET CLOUD EMPOWERED. SEE HOW THE CLOUD CAN TRANSFORM YOUR BUSINESS.

Cloud computing is as much a paradigm shift in data center and IT management as it is a culmination of IT's capacity to drive business ahead. It can be narrowly defined as "just-in-time provisioning and scaling of services on shared hardware." But really, it's an opportunity to completely transform how your business and its people work.

The cloud makes it possible for you to:

- Scale rapidly—up and down.
- Deploy services only when and where they're needed.
- Deliver rich experiences across the PC, phone, and browser.
- Generate efficiencies and cost savings by paying as you go for only the services used.

In moving to the cloud, you can choose to implement any combination of several cloud models. The "public" cloud typically describes complete services offered by third-party providers. A "private" cloud involves organizations enabling their own cloud-computing capabilities on-premises or via dedicated hardware from a third-party host.

There are three basic models in mind:

- A *private cloud* is a set of computing resources that is dedicated to an organization, usually on-premises.
- A *hosted private cloud* has a dedicated infrastructure that's hosted by a third-party but is inaccessible to other customers.
- A *public cloud* involves computing resources hosted externally but shared with other organizations and dynamically provisioned and billed on a utility basis – pay for what you use as you use it.

None of these models are all-encompassing. Part of the cloud's unique power is its flexibility. Cloud models are designed to work together, so you can use the right models for your organization as well as for individual workloads.

IMPROVE AGILITY AND RELIABILITY WITH THE CLOUD

For growing businesses that need agility and reliability to compete, the cloud represents both a unique opportunity and a paradigm shift in the value of IT as a competitive differentiator. Savvy CIOs are finding that a *standardized, global* infrastructure has deep bottom-line potential. Because the cloud encompasses these characteristics, businesses can use it to:

- Save costs directly.
- React more quickly and efficiently to new business requirements.
- Increase reliability in several important ways.

- Potentially add revenue by making themselves more competitive.

Being able to directly align IT resources with new business requirements has been hugely difficult in the past, largely due to long and expensive purchasing and deployment cycles. The cloud represents a paradigm shift in IT computing because it can dramatically decrease deployment cycles and make purchasing considerations – at least in terms of planning and reaction – almost a non-consideration.

With an agile cloud infrastructure, you can:

Exploit global business opportunities more quickly. Bringing a new electronic product to market in a foreign country, for example, used to mean at best a new outsourcing contract to a data center in that country, requiring separate contract negotiations, IT process alignment, hardware and software deployment and testing, and possibly even new staff hires. By contrast a public cloud will:

- Already have a global presence that allows you to simply request servers deployed in a specific geographic locale.
- Negate the need for hardware purchasing and deployment because resources are virtualized.
- Significantly decrease software deployment and testing since the new servers can be based off images of your current – already functioning – production servers.
- Integrate with your existing on-premises technology, making maintenance simpler.
- Protect your existing software investment by providing full compatibility between on- and off-premises resources.

Cut deployment time by huge percentages. This agility was realized by Acumatica, which cut its time for deploying a new software-plus-service solution from two months to two hours.¹ If your company has extended its private cloud into the geographic region in question, private clouds can offer the same benefits. If not, it's a perfect example of when to consider combining private and public models.

Enable business opportunity while decreasing IT investment. Another example of the cloud's ability to increase business agility is RiskMetrics. With 1,100 employees in 13 countries, RiskMetrics models over 4 million global securities daily. The company was being challenged by its customers asking for complex, on-demand financial simulation models, often generating bursts of demand on its computing resources that were 10x above normal usage. By moving these operations to the cloud using a pay-as-you-go model, RiskMetrics was able to meet these demands while decreasing its new data center costs because it only needs to pay for those resources as they are used.²

Help improve IT reliability. This involves many of the same processes that bolster IT agility:

- **Virtualization.** Virtualized servers are based off the same or similar images (copies of themselves). Virtualization not only decreases testing time, but it also increases reliability because IT staff in different locations aren't configuring servers in different ways causing more points of possible failure.
- **Reduced server sprawl.** Whether in a public or private cloud model, virtual machines run in a higher density on fewer hardware servers. That means a lower chance of hardware failure and an easier time building reliable hardware fail-over protection.
- **Simplified disaster recovery and business continuity.** If all or even most of your IT infrastructure is virtualized, spinning up a mirror of your entire infrastructure becomes easy. And connecting users to it becomes equally easy as long as they have an Internet connection and you're employing an identity management system that spans various computing scenarios.
- **Easier archiving and backup.** The cloud essentially allows you to outsource these functions while still maintaining direct management control. Any concerns about regulation compliance can be addressed by having cloud providers ensure that appropriate audit trails and log files exist with which to stay in compliance.

Increasing your IT department's responsiveness to changing business demands can effectively

contribute to the bottom line, and turn IT from a loss leader to a competitive advantage in the bargain. The cloud will also simultaneously allow IT to significantly decrease capital and operational expenditures.

By moving to a private cloud infrastructure, IT managers can decrease sprawling server and network purchasing by large margins. This has decreased the forecasted IT spend of some early Microsoft cloud customers by a factor of 10.³ Work with your cloud provider to find the right ratio and migration plan for your organization going forward.

Getting started. *Start identifying the ways in which improved IT agility can help your enterprise: Exploiting new business opportunities? Easing the burden of M&A integration? Speeding procurement or order fulfillment? Build a wish list of capabilities from that discussion and use it as a map when planning the capabilities of your cloud infrastructure with your cloud provider.*

INCREASE YOUR COMPETITIVE ADVANTAGE WITH LINE OF BUSINESS APPS IN THE CLOUD

If you're considering moving your LOB applications to the cloud, congratulations! You've grasped the power of the cloud as a path to achieving a greater competitive edge for your IT department and your business.

LOB applications and the way in which they're deployed, managed, and used represent the core of your IT competitive advantage. Cloud-savvy CIOs realize that the new paradigm of cloud computing represents a golden opportunity for your IT department and your business to advance and maintain a competitive edge. No matter what form your LOB applications take, the cloud can help:

- **Increase your ability to react quickly to new business needs while decreasing costs.** The virtualized nature of the cloud means your LOB portfolio can quickly adjust performance up or down based on immediate workload requirements – lowering your TCO. Your workloads can immediately react to sudden “bursts” of demand, and you'll only pay for the resources those bursts require as you need them. And the cloud's global nature means easier and more reliable access to your LOB assets for mobile, remote, and even temporary workers. This gives your front-line managers much-needed flexibility in meeting new business needs and exploiting new opportunities.
- **Ease your management burden.** If a new market opportunity became available in another country, for example, opening a presence there with a standard IT architecture would require purchasing a data center or at least rack space in a data center located in that country. That capital expenditure would immediately be followed by operational expenditures when your LOB portfolio has to be manually migrated there and maintained by your IT staff – a significant management task, often representing weeks or even months of man-hours. But if your enterprise exploits a public or hosted private cloud architecture in addition to your on-premises private cloud, you can simply spin up virtual servers in the new location, complete with your LOB portfolio already configured to communicate with your servers back home. This is not only cheaper and faster than traditional deployment, but also much simpler for your IT staff to plan and execute.
- **Speed and standardize custom application development.** And if your LOB portfolio is partially or even wholly based on custom applications created in-house, the cloud represents a great opportunity to standardize your applications on a powerful cloud-enabled app stack. Building applications on a standardized framework is part of the cloud's definition, and moving your applications onto such a framework is beneficial for all cloud infrastructure models. Once your custom apps have become cloud-enabled, they'll be able to take advantage of the cloud's inherent

deployment and TCO advantages while also giving your application developers a clear road for future development and customization.

Moving your LOB portfolio into a cloud architecture is certainly forward thinking, but don't forget about the rest of your application and data management requirements. The cloud enables a fundamental shift in the way data centers and IT infrastructure is managed. Forward-thinking CIOs are using the cloud to run physical infrastructure (*Infrastructure as a Service*), server platforms and management (*Platform as a Service*), and entire software workloads (*Software as a Service*). Collectively, these models can be viewed as *IT as a Service* (ITaaS). With ITaaS, your organization can see huge decreases in data center TCO while simultaneously empowering your end users and IT staff with new capabilities through more reliable and responsive services. Adding team collaboration and messaging applications to the cloud means taking advantage of a global cloud infrastructure for employee productivity and lowering TCO at the same time. A careful application audit and some in-depth planning sessions between your IT staff and your cloud provider can build the right cloud migration mix for your organization.

Getting started. *Planning an LOB cloud migration requires diligence. You'll need to meet not only with your IT staff and your cloud provider, but also with your front-line business managers and your workers. Planning involves communicating the framework of the migration, understanding the processes that exist around these applications, and then mapping the future directions these applications need to take.*

YOU CAN STRENGTHEN SECURITY WITH THE CLOUD

CIOs unfamiliar with cloud computing are concerned over how to maintain IT security once their infrastructure is off-premises. Physical access to servers running their virtualized infrastructure, multiple forms of data security, and the ability to pass a variety of regulatory compliance audits are all justifiable concerns that need to be addressed before companies can safely embrace cloud computing. Fortunately, competitive cloud providers can provide solutions to address all these problems. Don't be satisfied with a cloud provider unless it can provide at least the same level of physical and data security as your current data center, and preferably exceed those levels. Start by choosing only public cloud providers with:

- **Demonstrated physical security.** A competitive cloud provider will be able to demonstrate that its data centers are physically secure – preferably with regular audits that comply to ISO 27001 standards. A competitive cloud provider's points of presence should be state-of-the-art data center facilities that employ the very latest in access control and data protection. Your IT staff should be able to quickly build a list of physical security and data protection requirements, and your cloud provider needs to meet those.
- **Demonstrated experience in IT security.** Long and demonstrable experience in IT and data security is paramount, and it should go beyond just hardware security at the cloud provider's sites, extending to software security up to and including full volume data encryption, granular server and data access control, and detailed audit logs. You should be able to protect data access from anyone, including the cloud provider's own on-site technical staff. And finally, any enterprise-capable cloud provider should make sure that your data won't be accessed by cloud IT staff or mined for commercial purposes by other customers.

Those building private cloud infrastructures have fewer security worries, since infrastructure is still on-premises. But private clouds do have security issues of their own that need to be addressed:

- **Identity management.** This is probably the most important private cloud security concern. Giving users the ability to access IT resources directly via self-service portals makes identity management more important than ever. Your IT infrastructure must implement an identity management solution that's compatible with your self-service portal and with your cloud provider's identity management platform if you intend to leverage a public cloud model.
- **Regulatory audits.** While private clouds are located on-premises, it's still a new model of enterprise computing. Make sure your regulatory requirements are being met in this model by running test audits – if a public or hosted private cloud model is your eventual goal, your public cloud provider can be an excellent resource here. In most cases, you'll find the provider has experience dealing with your specific audit requirements.

Next to security concerns, some CIOs are also worried about losing control of their IT operation – day-to-day management, physical control and data sovereignty are important concerns. But a competitive cloud computing solution should enhance all these facets of your IT operation, not endanger them. Today's IT management toolkits can span the gamut between on- and off-premise cloud computing elements, managing both as a cohesive whole and actually increasing response times and application performance. Cloud computing providers should be able to provide at least the same level of physical and data security as your current data center, and in most cases exceed those levels. Start the conversation with your cloud computing provider today, and get the answers to these questions. Then use them to build a cloud migration plan that's right for your organization.

Getting started. *Talk to your IT security officers and make sure an accurate and detailed list of requirements is available. Audit your identity management system and make sure it fulfills your needs now and in both a private and public or hosted private cloud computing model. Work with your cloud provider to develop a detailed security policy that's reflected in your SLA.*

MICROSOFT: IT'S ALL ABOUT CLOUD POWER

At this point, just about everyone's talking about the cloud. But it's not just another buzz word – and it's not new. Microsoft has been leading the evolution for 15 years, building and hosting some of the world's largest cloud services. We're the only vendor currently capable of bringing you the full power of cloud computing with a complete offering of Infrastructure as a Service, Platform as a Service, and Software as a Service. We're enabling customers and hosted partners to build their own cloud computing environments as well as implement provided cloud services.

With Microsoft, you can build, extend, or migrate to the cloud on your terms. ISVs and in-house developers will be able to easily adapt existing applications to your cloud environment because we provide a set of common management, identity, and developer tools that work across traditional server and cloud environments.

We've infused our cloud solutions with the power of experience. Having run some of the world's largest cloud services for over 15 years, we understand the requirements of mission-critical services. Our cloud services run in a global network of enterprise-class data centers that offer 99.9% up-time and full 24/7 customer support, as well as mission-critical physical and data center security accredited to ISO 27001:2005 with SAS 70 I and II attestations. Your IT staff and end users can easily move to and from the cloud using their existing investments and the skill sets they already have. We ensure a familiar and consistent experience by designing our cloud-based products with equivalent functionality and similar look and feel to that of our traditional, on-premises products.

There is a cloud on your company's horizon regardless of size, focus, or vertical. Cloud computing offers a paradigm shift in cost savings, agility, scalability, and global reach that is simply too powerful for any enterprise to ignore. Whether you're looking to move to the cloud today or you simply need to investigate this new model for the future, you should start that conversation with a cloud leader fully committed to existing cloud services and to future cloud innovation. By bringing the full power of the cloud to bear and providing you with the flexibility and control to harness that power, Microsoft will enable you to transform your business with cloud computing on your terms.

Now that you have begun exploring the possibilities of Cloud Power, contact your local Microsoft partner to learn more and to start transforming your business.

Footnotes

1. Microsoft Case Study, *Software Company Efficiently and Cost-Effectively Delivers Software-plus-Services*, http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=4000005777 (November 17, 2009)
2. Microsoft Case Study, *Financial Risk-Analysis Firm Enhances Capabilities with Dynamic Computing*, http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=4000005921 (November 17, 2009)
3. Microsoft Case Study, *Siemens Expands Software Delivery Service, Significantly Reduces TCO*, http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=4000005945 (November 17, 2009)