Business white paper

Five myths of cloud computing

Cloud computing: what does it mean, really?

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Like many industries, the IT industry has a habit of latching onto buzzwords and then applying them everywhere. The term "cloud" is certainly no exception—and, like other similar terms, its use is varied and oftentimes inaccurate. As a starting point for our discussion, then, let us cite the National Institute of Standards and Technology (NIST) definition of cloud computing, as published by the institute in September 2011:

"Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."[1]

At the time this definition was published, "cloud" was already part of industry parlance, and was beginning to take root in the general lexicon. Additionally, global business spending for infrastructure and services related to the cloud had topped $78 billion. This year, enterprise spending on the cloud will reach an estimated $174 billion, and is expected to climb to $235 billion by 2017.[2] Inevitably, as both business IT and consumer mindsets evolve toward the cloud in coming years, we will continue to witness dramatic growth in IT products in some areas, and significant reductions in other areas—resulting in a reshaping of the industry as a whole.[3]

As seen with other major evolutionary transformations of IT over the last four decades, new technologies can be disruptive initially, with hype moving faster than reality. But when new technology is finally understood, the benefits quickly begin to outweigh the perceived drawbacks. Because cloud concepts can mean different things to different people, let's take a brief look at five cloud computing myths, with the goal of separating fact from fiction.

[1] http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf.

[2] IHS, found at http://www.cloudcomputing-news.net/news/2014/apr/08/why-cloud-services-spending-will-exceed-174b-in-2014/.

[3] Amy Schurr, "Keep an eye on Cloud Computing," Network World, July 8, 2008, citing a Gartner Group report "Cloud Computing Confusion Leads to Opportunity".

Myth #1: The public cloud is the most inexpensive way to procure IT services

A characteristic of the public cloud is a relatively inexpensive "pay-as-you-use" model. For example, as of June 2014, the starting price for standard on-demand instances with the Amazon EC2 Web service is less than a dime per hour based on system size, operating system, and locale. It's easy to see why people think all delivery from the public cloud is cheaper than that delivered by internal IT. However, if you peek behind the curtain, the picture changes.

For resources that are needed constantly, enterprises can actually reduce costs by leveraging other cloud models, such as shared resources delivered via a private cloud. In cases like this, the private cloud is actually more cost-efficient than even the pay-as-you-use public cloud model.[4] An analogy is the decision to rent or buy a car. For short-term use, a car rental is cost-effective because you pay based on what you consume. However, if you drive frequently and for a longer period of time, then owning the vehicle makes much better financial sense (there are, of course, other important issues to consider beyond price, such as performance, security, compliance, service-level agreements, and availability—not to mention whether or not your chosen solution actually fulfills your business requirements and produces the desired outcomes).

Cloud strategy is essential

At the core of cloud computing—whether you're using a public cloud service, building your own private cloud, or taking a hybrid delivery approach—is the need to have your specific requirements incorporated into a well-developed cloud strategy. Creating this strategy is far from a simple exercise, as it must address all aspects of your performance, security, control, and availability requirements.

In her article entitled "Public Cloud vs. Private Cloud: Why Not Both?", Beth Schultz observes that many organizations today are gravitating toward a private cloud first in order to understand it within the confines of their own firewalls. She asserts that experts now believe it's a viable option to base your cloud delivery decisions on an analysis of your applications. She advises organizations to "evaluate specific applications, factor in security and compliance considerations, and then decide what apps are appropriate for a private cloud, as well as what apps can immediately be shifted to the public cloud."[5]

To help customers understand how cloud can enable their agenda and start to develop their strategy, the interactive, one-day HP Cloud Workshop lets customers work with HP consultants to:

- Develop clarity, consensus, and vision for cloud
- Understand why cloud represents a new style of business technology and how it can enable their business vision
- Gain insight into the critical dimensions of cloud and key success factors
- Create an action plan toward making cloud a reality that drives their agenda forward

[4] Joe Weinman, "10 Laws of Cloudonomics," Cloudonomics.com blog, www.cloudonomics.com.

[5] Beth Schultz, "Public Cloud vs. Private Cloud: Why Not Both?" PC World, April 4, 2011

Myth #2: Incremental steps in virtualization are the only way to reach the cloud

There are many good reasons for businesses to turn to virtualization technology—more efficient utilization of existing computing resources and improved flexibility, to name just two. And, admittedly, virtualization is a powerful step in transforming IT. But it's just that—a step.

The real transformation comes when organizations fully embrace cloud computing. Building a private cloud brings tremendous benefits: a reduction of IT complexity, significantly lowered IT costs, and a more flexible and agile service delivery. Not to imply, however, that virtualization and cloud computing are mutually exclusive; in fact, many technologists believe that a virtualized infrastructure is a strong catalyst for the next step of adopting cloud computing. But private clouds are able to offer so much more: By automating the underlying provisioning of infrastructure and applications, they add a convenient way for end users to request IT services.

Data center sprawl, rigidity, complexity, and costs are reasons why traditional IT silos are not meeting increased business demands. A private cloud based on shared pools of resources—resources that can be automatically tapped to meet business needs—can help IT keep up with these demands. A private cloud allows IT managers to have complete control over available assets while adhering to the security standards required both within the cloud and in the data center. The cloud provides the agility needed to automate workflows and reduce human involvement in time-consuming but necessary tasks such as the provisioning of applications. Whereas most companies can take from three to six months (or longer) to provision new applications, with the cloud, these same applications can be provisioned in a few hours. With cloud patching and upgrading the OS, applications or databases can be automated to dramatically reduce the time IT administrators spend maintaining applications.

The all-in-one approach can achieve the private cloud

So why do businesses delay the adoption of a private cloud? In a word—change. Change can be difficult for any organization, but some executives may have concerns that the work needed to automate their environment might eclipse any gains made by automation. Or they may believe that they need to further standardize their current environment to truly take advantage of automation.

In reality, the effort needed to get to the cloud is much less strenuous today than in years past. Great strides have been made to build the automation and integration tools needed for the fast development of private clouds. If an organization has already adopted virtualization technology, that does represent a major step toward internal cloud computing. But, to use a metaphor, it's no longer necessary to take the stairs to the cloud by first adopting virtualization, then building on that technology, and finally moving to a cloud environment. Today you can take the elevator.

For example, consider HP CloudSystem. Customers who purchase HP CloudSystem can typically deploy a private cloud within 30 days after installation by attaching HP Helion Professional Services entry-level solutions. These low-cost solutions enable HP CloudSystem customers to work with our experienced professional consultants—both up front and throughout the implementation processes—to rapidly deploy features such as automated provisioning, foundation configuration management, foundation protection with security lockdown features, and consumption-based reporting for showback purposes. The HP Helion Professional Services model and solutions provide that customers obtain a much higher level of customer satisfaction—whether they're beginning their cloud journey with the purchase and implementation of HP Helion CloudSystem, or approaching their cloud journey through a transformational type of approach involving a much more comprehensive approach and HP Professional Services expertise.

Myth #3: Critical applications do not belong in the cloud

It's one thing to relegate a few servers running test and development jobs to a cloud-based infrastructure. But delivering business applications quickly and efficiently continues to be the most important charter for IT organizations. Today, IT executives are under extreme pressure to:

- Cut infrastructure costs
- Adjust service levels to meet changing needs
- Deliver applications with greater speed

IT professionals, of course, are interested in cloud computing to help them address all three of these requirements. But when CIOs and administrators look at major business-critical applications like SAP®, Oracle, and Microsoft®, they start to have doubts. How can IT possibly deploy these often complex and traditionally hardware-bound suites on something as seemingly transitory as a "cloud"? And how can the cloud possibly be configured to run these applications speedily, safely, and securely—without much time and effort on the part of the IT department? In short, is cloud computing appropriate for applications that are critical to the success of the business?

To answer these questions, HP developed Cloud Maps, prepackaged application templates that bring together decades of HP and third-party expertise. With HP Cloud Maps, you can quickly build a comprehensive catalog of applications for simple push-button deployment through HP CloudSystem and HP Cloud Service Automation. Not only do they help deliver optimized performance and service levels for cloud environments, they can also help reduce new application delivery time from weeks or months to less than an hour.

Myth #4: All cloud security requirements are created equal

The use of a public cloud service can provide relief from hardware and software investments, because you pay only for service delivery. Today, cloud services are often obtained by various areas of the business, which means IT must manage at the service level. But many IT executives are unwilling to create a system where their data resides outside of their control. Many enterprises, due to governance, risk, and compliance regulations, have strict rules about the handling and archiving of sensitive data. The most prevalent security concerns[6] as cited by the Cloud Security Alliance are:

- Data breaches
- Data loss
- Account hijacking
- Insecure APIs
- Denial of service
- Malicious insiders
- Abuse and nefarious use
- Insufficient due diligence
- Shared technology issues

Fearful of the constant growth and increasing sophistication of attack methodologies, IT executives believe that private cloud is the answer because it keeps the cloud infrastructure on-premises, behind company firewalls, and under the direct control of the IT group. These executives feel that if the security on their traditional networks is reliable enough to trust, then their private cloud models, by association, should possess at least that same level of assurance.

But is the private cloud model bulletproof? The short answer—no. Vulnerabilities will always exist with a connection to the Internet, requiring companies of all sizes and sophistication to analyze, understand, and address security concerns in the same way they do with traditional IT. But even beyond that, there always remains the threat of insider attacks and internal data theft.

Securing the cloud requires real specialists

To address these security challenges, you should first begin with a comprehensive risk analysis, as well as the creation of a governance, risk, and compliance program tailored to the cloud. A high-level security architecture for your cloud-based services should also be drafted.

Moreover, you should define additional security controls required to protect information assets in different types of cloud environments. Current investments in security need to be maintained while complying with industry regulations, without impacting performance and availability. The HP Cloud Protection Program and Consulting Services can help you build the necessary security controls and principles into your enterprise hybrid cloud environment, and provide risk mitigation strategies against threats defined by the Cloud Security Alliance.

[6] "The Notorious Nine: Cloud Computing Top Threats in 2013," as cited at: https://cloudsecurityalliance.org/media/news/ca-warns-providers-of-the-notorious-nine-cloud-computing-top-threats-in-2013/.

Myth #5: There is only one way to do cloud computing

As you have seen, there are a number of cloud delivery models available. Throughout this paper, we've touched upon these different models, as well as the role of public and private clouds.

Apart from public and private clouds, a third option also exists: hybrid delivery. As its name suggests, a hybrid delivery is the delivery of two or more clouds (private, community, or public). These clouds remain unique entities, but they are bound together by standardized technology that enables data and application portability (for example, cloud bursting for load-balancing between clouds).

In a March 2014 article for Inc. magazine entitled "How to Choose the Right Cloud Services," author Tony DiBenedetto wisely suggests "that the application itself ultimately dictates where it should reside depending on an organization's needs, which means public and private clouds need to coexist in a hybrid model." He comes to the conclusion that "Organizations need to seek out technology vendors and partners to help them develop a hybrid model that leverages the best of both public and private clouds, as well as legacy applications traditionally deployed on their own dedicated hardware (on-premises) that don't translate to the cloud. The decision of which application resides where should depend on a company's existing IT resources, its individual business or industry compliance requirements, and its future plans."[7] Clearly, decisions based on the careful analysis of applications highlight the range of cloud delivery options available today to an organization. Veteran technology writer Jean Bozman, in a 2010 IDC article that is still very much applicable today, elaborates further on the benefits of both private and public clouds: "Private clouds leverage cloud technology, bringing many of the benefits—such as more standardization of infrastructure and business processes—that reduce overall operational costs (OPEX) and improve business agility. Public clouds offer the benefits of leveraging someone else's infrastructure to run IT workloads on a pay-as-you-go basis, reducing CAPEX costs."[8]

A comprehensive solution for building and managing cloud services

HP CloudSystem is the most complete, integrated, open platform available for enabling enterprises and service providers to build and manage services across private, public, and hybrid delivery environments. Based on the proven, market-leading HP Cloud Service Automation and Converged Infrastructure, HP CloudSystem integrates servers, storage, networking, security, and management to automate the application-to-infrastructure lifecycle for hybrid service delivery management. The result is a complete cloud solution that lets enterprises gain agility and speed, and allows service providers to drive top-line growth.

HP CloudSystem delivers broad application support and helps businesses package, provision, and manage cloud services regardless of where those services are sourced, whether from on-premises CloudSystem resources, or from external clouds. As a part of the HP Helion portfolio, organizations benefit from a simplified, integrated architecture that is easier to manage, and provides flexibility and portability between private, public, and managed clouds.

[7] http://www.inc.com/tony-dibenedetto/how-to-choose-the-right-cloud-services-.html.

[8] Cloud Computing for the Enterprise Steps Forward: Lessons Learned and Key Takeaways," IDC, June 25, 2010.

The cloud: Are you ready?

Once you sift through the hype and buzz surrounding cloud computing, it becomes clear that the cloud offers real, tangible benefits. Embracing cloud where it makes sense for your business can accelerate your time to revenue and reduce your costs. But embracing cloud means cutting through the hype to find real solutions.

No matter where you are in the cloud adoption lifecycle, HP has the people, processes, and proven track record to make a real difference and help you take a direct route to the cloud. With HP as your partner, you'll benefit immediately from the industry's most extensive range of cloud computing expertise, products, and services. Contact us today and learn more about the solutions discussed in this paper, and how HP can help make your journey to the cloud a smooth one.

To learn more about the HP Helion portfolio of cloud products and services, go to:

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