

Business white paper

Start small, grow tall: why cloud now



The reality is that the cloud isn't yet so mature or capable that it's ready to replace traditional IT. Companies face a number of obstacles to cloud adoption. Among them: differences between business and IT executives about the pace of adoption; differing stages of maturity within the cloud adoption continuum; and the need to avoid compromising the cloud's benefits with scattershot, uncoordinated adoption. As you'll see, without a proper goal and a clear plan to get there, organizations risk re-infecting their IT environments with complexity and sprawl that are every bit as counterproductive as the data center problems the cloud was meant to correct.

The problems hidden in the cloud

Business people have been quick to embrace the cloud. They've been quick to recognize how they can use the cloud to speed innovation, enhance agility, and improve financial management. They're demanding expanded cloud access, and in some cases actually opting for "guerilla adoption," moving data and apps to public cloud services informally, without first obtaining the blessing of the CIO or the IT department.

Virtual machines, real concerns

However, the IT departments of enterprises and service providers have been slower to adopt cloud solutions because of concerns—often well-founded—about security, management, and efficiency. Security becomes an issue when business processes can hopscotch from one virtual machine to another, and when mission-critical applications are dependent on data feeds from what many CIOs perceive as an all-too-evanescent cloud environment. Management comes in for similar scrutiny as administrators ponder the prospects of managing private and public clouds with traditional in-house IT environments. Faced with cloud computing, IT professionals worry about application robustness, security, and agility. They agonize over the potential for fragmentation and inefficiency stemming from piecemeal and ad hoc adoption of cloud "puzzle pieces." And in particular, they lament the lack of a comprehensive, integrated cloud solution.

CIOs know the cloud can help them accomplish their business goals. The question is how to accomplish those goals while improving manageability, ensuring security, and maintaining—or, preferably, accelerating—business performance.

While business wants to press forward and go full steam ahead for cloud adoption, IT wants to proceed more slowly. This disconnect translates into less control by IT, or lower levels of innovation by the business—or both.

Different companies, different speeds

Partially as a result of issues like these, organizations are evolving to the cloud at markedly different speeds; that is, they have varying degrees of "cloud maturity." Early adopters of cloud services have found these solutions provide increased time to value and often deliver cost benefits. Cloud services are a key component of an organization's ability to gain access to the right IT services, from the right places, at the right time, at the right cost. But no "one" model

can be optimized to meet all needs. Many of the services used by an enterprise have unique sets of requirements (e.g., availability, cost, time, regulatory, security). Therefore, a hybrid delivery environment is mandatory, leveraging the best of traditional IT, private cloud, managed cloud, and public cloud. In this environment, the IT mix and individual service deployment models can change as business requirements change.

Cloud sprawl

In addition to the difference in perception between the business and IT, and the difference in the pace of adoption, there are the problems engendered by virtualization itself. Like a virtual version of Newton's third law, each benefit of a virtual environment can, if not controlled, have an opposite effect.

It's known as virtual sprawl: the ability to spawn multiple virtual machines from a single physical one, which can lead to fast, flexible provisioning—but also to enormous complexity. The virtualized infrastructure's elasticity and better use of physical assets are counterbalanced by increased management and security burdens, by poor visibility and splintered control.

An accompanying concern is that many organizations approach cloud computing in a fragmented and piecemeal fashion. Today there are hundreds, if not thousands, of vendors delivering cloud solutions. It's tempting to adopt these solutions piecemeal, in response to an immediate need. Or to pick up a cloud appliance here, a virtual tool there, thinking that it furthers the path to the cloud. Or to allow one part of the company to convert workloads to the cloud, but fail to make this ability available to all. By adopting such solutions without an overall strategy and an endgame in sight, an organization can foster a kind of "cloud sprawl" that adds to virtual sprawl and leads to the same complexity, security issues, and management costs it seeks to escape.

Every seven to 10 years, technology development and delivery undergo a tectonic shift that opens up new business and access models. These shifts fundamentally change the way that technology is consumed and the value that it can bring. Today, mobility, big data, and the advent of cloud computing represent such shifts. They offer great value, but they can also drive complexity to a point that negates their value. Executives and leaders look forward to the day when information technology will be delivered as a pure service throughout the organization, metered, ubiquitous, and available on demand much like electricity or water.

Start small, grow tall...but think big

So what's the best route to the cloud? The immediate goal, of course, is making use of Internet-based technology, with shared pools of services, including metering or chargeback. The cloud needs to be self-service; it needs to be automated. But these individual attributes by themselves are available in a variety of private, public, and hybrid clouds, and can be cobbled together today with components procured mostly off the shelf.

Experience, however, shows it's best not to think in terms of separate cloud environments and individual ad hoc pieces—a fragmented, disjointed approach that actually adds to security problems and management complexity. In the final analysis, the businesses that profit most from the cloud will be those that approach it with a unified services view and who strive toward management of all services—from public, private, or hybrid clouds—under a single umbrella, with support for the broadest possible set of applications.

Use a step-by-step approach

Even an organization starting from zero can start moving toward the cloud today. At HP, our experience has been that the more successful private and hybrid cloud projects—those that are provisioned and operational in the shortest time—result from a holistic, systematic approach to their creation. It's a step-by-step approach: a company might begin by standardizing, consolidating, and virtualizing its infrastructure to eliminate high-cost islands and silos. The next step is working to standardize management tools and processes, then automating and standardizing services to create low-cost pools of assets. As the transformation to the cloud continues, the organization might begin to aggregate services from many sources—and perhaps even become a service broker itself.

Instead of “rip and replace,” the systematic approach will actually accelerate time to application value, providing the simplest way to transform a data center with workload-optimized systems that include common lifecycle management, single-button updates, and scaling to any size. The goal, and the transformation to it, will be more achievable by the use of modular building blocks that can add the next layer of capabilities without the need to abandon the previous one. Such a systematic approach dovetails perfectly with the HP Converged Cloud architecture.

Keep the goal in view

The important thing is to keep the ultimate goal in mind: a fully automated cloud-based environment, the “data center of the future,” which depends on low-cost, pooled, on-premises, or third-party computing assets from private, public, or hybrid cloud sources, which can also deliver IT as a service. It's important to have a solution provide a unified delivery across cloud and traditional IT environments; support for all types of clouds; a variety of applications, hypervisors, and operating systems; automated lifecycle management; and plenty of scalability to meet unpredictable business demands. Plus, to be anything more than an R&D plaything, the cloud needs to be highly robust and boast end-to-end security.

Meet HP CloudSystem

All these attributes are available today with HP CloudSystem. As part of the HP Converged Cloud portfolio, this cloud solution delivers all of the requirements of the cloud, yet is fully open—that is, it supports heterogeneous capabilities and private, public, and hybrid models, all in one integrated system. HP CloudSystem is the most complete, integrated, open platform that enables enterprises and service providers to build and manage services across private, public, and hybrid cloud environments. Based on 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. As a part of HP's Converged Cloud architecture, clients have a simplified, integrated architecture that is easier to manage and provides flexibility and portability between private, public, and managed clouds.

Three flexible offerings




HP CloudSystem is tailored for the requirements of enterprises and service providers at various stages of cloud maturity with three offerings:

- Entry configuration for infrastructure as a service (IaaS) with **HP CloudSystem Matrix** that lets IT customers provision infrastructure and applications in minutes.
- Full-scale deployment of private and hybrid cloud environments with **HP CloudSystem Enterprise**, which lets customers unify management across private, public, and hybrid clouds and adds advanced infrastructure-to-application lifecycle management.
- Advanced capabilities for service providers with **HP CloudSystem Service Provider**, facilitating deployment of public and hosted private clouds that deliver complete service aggregation and management.

CloudSystem is optimized for HP Converged Infrastructure technology, including HP 3PAR Utility Storage, the high-performance FlexNetwork architecture from HP Networking, mission-critical HP-UX, and comprehensive security capabilities. HP CloudSystem also supports third-party servers, storage and networking to protect customers' investments. Clients who have already invested in HP Converged Infrastructure and HP Software technology can easily expand their current architectures to achieve a private, public, or complete hybrid cloud environment with HP.

Respond to new application requests in minutes

With HP Cloud Maps, customers can quickly build a comprehensive catalogue of applications for push-button simple deployment with HP CloudSystem, reducing the time to deliver a new application from weeks or months often to less than one hour. HP Cloud Maps are templates and additional content based on industry-leading intellectual property resulting from thousands of hours of development and testing, and decades of close partnerships between HP, our key ISVs, systems integrators (SIs), and customers.

	HP CloudSystem Matrix provides a complete infrastructure platform that plugs into the Biocon environment and changes with their business needs by creating pools of shared, virtualized resources that are available on demand, therefore reducing the number of physical machines, eliminating complexity and lowering maintenance costs.
	McKesson was able to provision and manage their infrastructure within a minute for consistency and repeatable results with HP CloudSystem Matrix.
	Using HP CloudSystem Enterprise, NNIT was able to provision new applications and infrastructure in minutes, over weeks like the traditional manual method required, from a single user portal interface.

Success in the cloud? It's here

HP CloudSystem has already achieved remarkable success in helping businesses wield the cloud to their advantage. A few examples are in the table above.

The fast-track secret to success in the cloud: HP Services

HP offers HP Cloud Consulting Services and HP Education Services for CloudSystem, including HP CloudStart, to fast track building a private cloud. HP CloudSystem Matrix Conversion Service helps transition current BladeSystem environments to CloudSystem Matrix. HP Support Services for CloudSystem simplifies problem prevention and diagnosis with end-to-end support for the entire environment.

Start with a holistic view and strategy

HP Converged Cloud Workshop

This workshop focuses on the key success factors and components required to develop a cloud solution, building consensus among stakeholders, and helping them understand the implications for the business and IT. During the one-day workshop, using highly visual displays, senior HP consultants cover topics such as cloud concepts, architecture, and key technologies including CloudSystem. Other topics include the service portfolio, management, financials, governance, and more.

Summing up

HP CloudSystem supports all cloud service models and deployment models, so clients can use it to get started with self-service infrastructure provisioning and grow to add applications and service brokering across hybrid environments. All HP CloudSystem offerings are built on a foundation of Converged Infrastructure and the robust HP Software automation, management and security portfolio. They are supported by a full range of consulting services, from discovery workshops and strategy development, to solution design and implementation. With HP CloudSystem, the most complete, integrated, open platform to build and manage services, organizations can easily transition to an open, hybrid cloud computing environment.

For more information about HP CloudSystem, see hp.com/go/cloudsystem

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