IBM Delivers Down to Earth Cloud Computing

Abstract

Cloud computing is now part of mainstream discussions in the IT industry. Yet, like other emerging technologies, it is also accompanied by some confusion and hype. This ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) Impact Brief introduces cloud computing and the approach IBM is taking to ensure cloud computing delivers real value without the hype. Whether your IT organization is already on the path to adopting some aspects of cloud computing or you are a cloud skeptic, read on to understand what cloud computing can and should mean to you.

> An emerging compute model for delivering IT-related capabilities as a service, cloud computing promises dramatically better ease of use, economies of scale and much greater flexibility in sourcing and adapting to change.

Event

In February 2009, IBM announced a series of new products, services, clients and partnerships for its Blue Cloud initiative through which IBM is collaborating to develop and test integrated cloud solutions for businesses. An emerging compute model for delivering IT-related capabilities as a service, cloud computing promises dramatically better ease of use, economies of scale and much greater flexibility in sourcing and adapting to change. IBM helps its clients and partners realize these goals in three principle ways:

- IBM helps clients build their own cloud environments for internal and external use
- IBM delivers cloud services and software to be consumed by clients and partners directly
- IBM builds an ecosystem of developers, partners, vendors and universities to further cloud computing and standards adoption

With these announcements, IBM seeks to provide the most complete set of hardware, software and services for enterprise clients to harness cloud computing for cost and efficiency benefits – while keeping their businesses secure, resilient and performing at optimal levels.

Background

Over the last few years, cloud computing has reached mainstream awareness in the IT industry. However, some level of confusion around definitions and terminology still exists. In fact, with continuing evolution and the potential for cloud computing to touch on so many aspects of IT, some confusion is likely to remain over the next couple years.

The initial discussions on cloud computing leveraged the term *cloud* as a metaphor for the Internet. Systems connected to the Internet may reside in different geographic locations, but all of them exist in the same metaphorical cloud. This cloud concept removes the

EMA

need to understand where these systems physically live and how they are physically interconnected. It is sufficient to locate a system by something as esoteric as a domain name or IP address or as user friendly as a URL.

Cloud computing itself was made to make compute resources available to consumers over the Internet in utility fashion, similar to the way water and electricity is provided through public utilities. Some compute focused cloud services have been available for a few years. These services have indeed made servers available at relatively low cost on an hourly basis.

> Cloud services can be dynamic and flexible in terms of performance, availability, scalability and other attributes, allowing businesses to quickly adapt to changes in their environments.

The definition of cloud computing has since expanded to include the delivery of all types of services – whether software applications known as a Software as a Service (SaaS), Web hosting, email or others – over the Internet rather than within corporate intranets. Cloud services can be dynamic and flexible in terms of performance, availability, scalability and other attributes, allowing businesses to quickly adapt to changes in their environments. Cloud services often use various forms of virtualization to provide the required levels of flexibility and may be offered on a subscription basis.

This broad approach to cloud computing also enables IT organizations to transfer more costs and risks to third-party service providers while retaining the value produced by the services. A business purchasing cloud services is able smooth cash outflows by transforming some capital investments to ongoing expenses aligned with their demand. The IT organization is able to avoid spending time and resources to support those services internally.

Today, cloud computing continues to include externally provided services, and has expanded to include the notion of private clouds. Private cloud services behave similarly to external or public cloud services in terms of flexible service delivery. However, these services are deployed and managed from a dynamic internal IT infrastructure. Rather than transferring certain costs and risks to external service providers, private cloud adopters are focused on economies of scale, responsiveness to change and improved efficiency.

Cloud computing has evolved well beyond the notion of delivering basic "compute resources" over the public Internet. It is built on elements of SaaS, grid computing, virtualization, utility computing, Web 2.0, SOA and IT service management. And it is capable of offering a variety of flexible services, whether over the Internet or a corporate intranet.

Key Ramifications

IBM provides several approaches to cloud computing that will meet the needs of a broad range of participants in the space. IBM now offers hardware, software and services to help each of the following groups:

- **IT Organizations** - build and manage their own private cloud environments
- **Businesses and Users** - obtain unique cloud services directly from IBM
- **Cloud Service Providers** - develop cloud environments for external customers
- **IT Industry** - drive cloud computing innovation and standards adoption

IBM is also providing foundational capabilities for IT organizations that may or may not be adopting cloud computing. This is done through dynamic infrastructures and service management.

Dynamic Infrastructure

Having a dynamic infrastructure means that as the business environment changes – whether through changing user needs, competitive forces, changes in business processes, or other changes – the business, with the help of the IT organization, can quickly and efficiently adapt. Businesses of all types and sizes, across every industry and at every corner of the globe, face challenges due to change. A dynamic infrastructure allows the business to not only survive but to thrive during periods of change. It is also a pre-requisite for building a cloud computing environment.

A dynamic infrastructure allows the business to not only survive but to thrive during periods of change. It is also a pre-requisite for building a cloud computing environment.

Service Management

Service management is the best overall approach to ensuring technology meets the needs of the business. Without it, dynamic infrastructures and cloud computing environments cannot exist. Whether delivering services through a cloud computing environment, a dynamic infrastructure or a more traditional technology infrastructure, service management provides the underpinning management processes used to extract value from raw technology.

Whether delivering services through a cloud computing environment, a dynamic infrastructure or a more traditional technology infrastructure, service management provides the underpinning management processes used to extract value from raw technology.

EMA Perspective

New and evolving technologies often suffer from too much hype. This was never more apparent than in the mid to late 1990s when the Internet and the Web were expected to change the foundations of business, economics and culture over night. There was a mania around the Internet that quickly created vast fortunes, and in many cases wiped them out even faster. Of course there was some fundamental truth to the transformational power of the Internet, so today, it is delivering quite a bit of the value that was originally expected.

Cloud computing is currently in a phase of adoption where there is a bit too much hype. For example, some pundits have predicted the eventual demise of the corporate datacenter in favor of ever larger shared datacenters running publicly available cloud services. A more likely outcome is that both of these approaches will continue, each finding their own best usage scenarios. By co-existing, cloud computing and corporate datacenters should actually provide more value than either approach alone.

It is refreshing to see a company take such a down-to-earth approach to something with such a high risk for hype. During several days at Pulse 2009, IBM's annual event for the Tivoli and service management community, IBM consistently tackled the discussion of cloud computing from the customer perspective. With clear

EMA

acknowledgement that every business is at a different stage of IT maturity and with correspondingly different priorities, IBM made it clear that cloud computing – at least their approach to it – is not a "one size fits all" solution.

IBM's approach to cloud computing, building on both service management and dynamic infrastructure capabilities, provides something for every IT organization. EMA research shows that 30% or more of IT organizations have already moved to a service management paradigm with another 50-60% in the process. Most IT organizations can benefit from IBM's approach to service management which is a core enabler for both a dynamic infrastructure and cloud computing.

> IBM's approach to cloud computing, building on both service management and dynamic infrastructure capabilities, provides something for every IT organization.

For those wanting to purchase cloud services directly, IBM today has a cross-company portfolio of cloud computing offerings for business such as server capacity on demand, online data protection, and Lotus e-mail and collaboration software. EMA expects IBM to further expand its portfolio of cloud services, but does not expect IBM to compete for every type of cloud service. Thus far IBM has done a good job at picking and offering cloud services where it has unique capabilities and expertise.

For those ready to tackle private cloud infrastructures themselves – both internal IT organizations and cloud service providers – IBM offers a world-leading portfolio of hardware, software and services. IBM cloud infrastructures are already helping clients reduce provisioning time and lower risk caused by human error. These solutions also improve service quality, reduce labor costs, and increase standardization.

If your IT organization is anywhere on the continuum of cloud computing adoption – from service management, to dynamic infrastructure, to purchasing cloud services, to building a cloud computing environment – IBM has something to offer.