Big Data/Cloud Expo Showcases Disruptive Technologies and Future of Enterprise Computing – part 1

RFG POV: Make it big but keep it simple. This could be the mantra for IT executives and application owners throughout organizations of every ilk and size. In the brave new world of enterprise computing, Big Data and cloud computing are two of the more compelling trends, and biggest management challenges. Wrestling with how to leverage Big Data to drive innovation and adopting cloud solutions to improve business agility or lower costs are among the biggest decisions business leaders face today and into the foreseeable future.

Another challenge is keeping up with the volume of new solution providers entering the space along with determining which established players offer the best mix of technology, partnerships and support to meet these new business requirements. For instance, June's Cloud Expo in New York (Cloud Expo West follows in November) featured more than 120 vendor exhibits accompanied by dozens of breakout sessions, presentations, roundtables and press conferences – too much information for one person to absorb. However, a few noteworthy themes nonetheless emerged, which we will cover in this three-part series. Part one addresses Infrastructure as a Service (IaaS).

Cloud Enabling Big Data Access

Access to big data sources is improving daily and the cloud is a major enabler. Cloud service providers (CSPs) operate many of the most scalable, available, secure and technologically advanced data centers in the world. CSPs are also among the early adopters – and deliverers – of advanced, disruptive technologies such as enterprise SSD or Flash storage to vastly improve response time, services and applications to improve usability and enable choice. Several CSPs offer a variety of infrastructure options from bare metal to fully configured operating system environments (e.g., Microsoft Corp. Windows or Linux) that can be up and running in minutes.

According to Cisco Systems, "30% of all data will live in or pass through the cloud by 2020" and 70% of all enterprises already use enterprise-class cloud technologies. An IBM Cloud Survey indicates that by next year, 90% of all organizations they surveyed including small, medium and large enterprises, will have either implemented or piloted a cloud solution. In effect, this makes the aggregate of cloud providers the world's biggest and fastest growing data repository.

The cloud enables business models like Google and Amazon that rely on consumer-driven big data analytics as well as the next cloud-based start-up. In addition, Consumerization of IT is forcing CIOs and their staffs to deploy and offer solutions that provide their internal customers with greater flexibility and faster time to value. To quote Cloud Expo speaker Dennis Quan, VP for IBM's Smart Cloud Infrastructure, "The Cloud was born from consumer demand."

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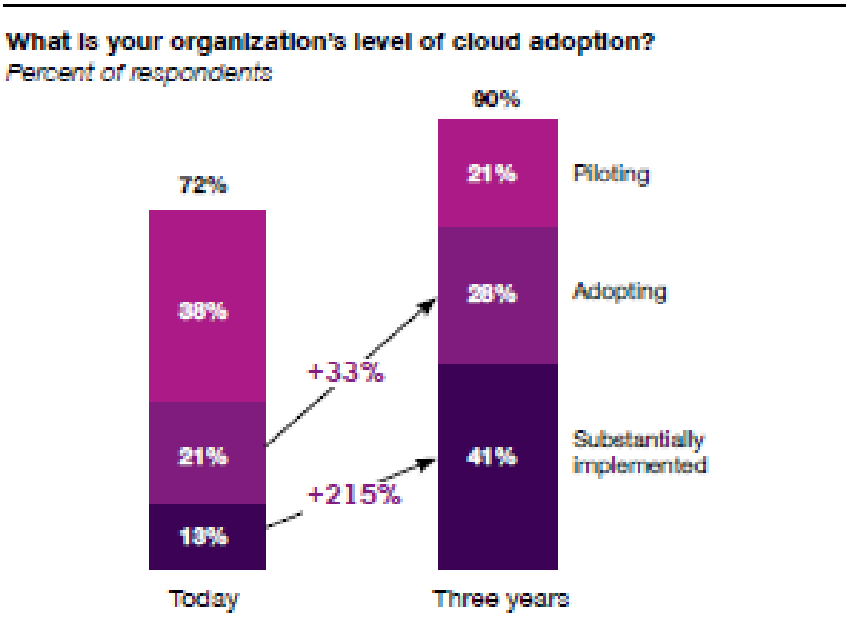

Figure 1: A large majority of survey participants have implemented cloud at some level – and adoption is expected to accelerate in coming years.
Source: IBM Corp.

Disruptive Cloud Solution Providers

Innovation is often synonymous with disruptive technologies. The following is a short list of companies, great, medium sized and small, who are delivering innovative solutions to meet the needs of a consumer-driven, cloud-enabled marketplace. Consumers can be individuals, IT organizations or corporations.

Disruptive cloud solution providers (DCSP) possess one or more of the following attributes:

1 – DCSPs leverage open standards and open source solutions
2 – Provide innovative service offerings and flexible pricing models
3 – Develop or leverage advanced technologies to boost app performance
4 – Create software to make cloud deployment and management easier
5 – Increase IT effectiveness and lower capital costs
6 – Offer customers modularity and choice

DCSPs are listed in four broad categories: Infrastructure, Applications, Services and Storage. (See Figure 1.)

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Figure 1. Disruptive Cloud Solution Providers

Infrastructure as a Service (IaaS)

Logicworks provides public, private and hybrid cloud hosting solutions and dedicated, managed services and technical support to enterprise customers and SaaS solution providers. Unlike many CSPs, Logicworks focuses on specific industries including healthcare, media, financial services and marketing/advertising. Not coincidentally, its focus on compliance and privacy issues such as HIPAA for healthcare and PCI DSS for financial organizations makes its services more appealing for those industries. Logicworks Private Cloud is fully dedicated to each customer and runs on VMware's virtualization platform while its public cloud offering incorporates CloudStack and utilizes EMC's Isilon storage archiving solution. Logicworks also provides AWS managed services adding a layer on top of Amazon's cloud to 'help companies strategize, architect, implement and scale AWS cloud instances and tools for their own applications." Logicworks also offers managed database services for Big Data applications utilizing Hadoop clustering technology.

Rackspace is one of the largest and most successful CSPs noted for "combining performance, reliability, security, low total cost of ownership (TCO) and *Fanatical*

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Support" (according to Rackspace executives) within their Hybrid Cloud offerings. Rackspace founders helped create OpenStack which is fast becoming the *de facto* cloud operating systems standard, supported by more than 150 vendors. OpenStack allows administrators to manage large pools of compute, storage and networking resources and gives their users the ability to provision their own resources. Hybrid Cloud combines public cloud, private cloud and dedicated bare metal computing into a single solution in effect allowing customers to build their own applications instead of forcing them into a specific application framework. Customers range from startups to Fortune 500 companies. Rackspace builds and supports many of its own applications to help customers more easily manage their cloud environments. Rackspace has also made recent acquisitions, including Exceptional Cloud Services, to increase its OpenStack services and support capabilities, and Object Rocket, a year-old provider of cloud-based MongoDB services known as a Database as a Service (DBaaS) solution. Both acquisitions help Rackspace compete with similar services from Amazon Web Services (AWS), the world's largest CSP, and other IaaS solution providers.

SoftLayer made tech news headlines earlier this month when IBM announced its intention to acquire the privately-held IaaS firm to boost its ability to compete in the cloud space. The acquisition brings IBM more than 20,000 new cloud customers of all sizes while accelerating its ability to compete in the cloud space for coveted enterprise customers. According to its recent cloud survey, IBM believes the size of the worldwide cloud opportunity will likely exceed $200 billion per year by 2020, an opportunity far too big for them to ignore. Meanwhile, IBM can boost SoftLayer's data center growth around the world – they now have 13 – along with deploying IBM hardware and leveraging IBM worldwide sales and services capabilities. IBM and SoftLayer are both committed to cloud-centric open source initiatives including OpenStack and Cloudstack as well as partnering with many other open source solutions including 10Gen, creators of open source NoSQL database MongoDB, to help enable mobile apps in the cloud. SoftLayer views their operational model as open cloud consumption paid for by the minute, hour or day. According to a SoftLayer spokesperson, "We have more Legos and more boxes for customers to build their own architecture from bare metal to fully configurable operating environments and 1,600 internally developed APIs to streamline the process."

Conclusion

With the market for cloud-related products and services anticipated to exceed $200 billion per year by 2020, the opportunities for CSPs and technology companies are enormous. At the same time, the consumerization of IT is pushing technology solution providers, CSPs and application developers to improve services, user interfaces, APIs, security and self-service applications to the point where non-technical, line-of-business users can easily manage and provision their own solutions while accelerating time to value.

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RFG POV: Cloud solutions are evolving quickly due, in large part, to the fact that lower cost of ownership and quicker implementation times are compelling users to experiment and adopt cloud solutions sooner than later. When it comes to computing, just about everyone wants faster and cheaper, as long as easy and secure are also in the cards. **IT executives need to experiment with various cloud offerings to determine which ones best satisfy current and planned initiatives before leaping into commitments that can consume scare resources.**

Additional relevant research is available. Interested readers should contact Client Services to arrange further discussion or interview with Mr. Gary MacFadden, Principal Research Analyst.

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