WHAT IS

CLOUD COMPUTING

Contents

Abstract

Is Cloud Computing just another techno buzzword, or more than that? And where does it go from here? 'Cloud' is supposed to bring enormous power to all-sized businesses and has sparkled a lot of interest.

Everyone is inquisitive to learn about the cloud; with organizations wondering if it's right for them; service providers trying to adapt to the cloud phenomena; and finally industry analysts researching and predicting market roll out for the same.

This whitepaper seeks to define the term cloud computing, the ongoing trend, its playing field, future growth and how industry analysts are looking at cloud computing and its growth.

Introduction

Clearing the Cloud

An innovative unification of technology, business requirements and economic factors raise the spark for Cloud. Cloud Computing is all the rage in the IT industry. Yet, everyone seems to have a different definition of cloud computing.

Some call it an evolved form of utility computing, while others call it software as a service, where applications are deployed and delivered as a service through the Internet. And still others refer to it as an upcoming computational model offering not only applications, but also computing resources, middleware, and other infrastructure components as an on-demand service. Everyone's offering their customized version of 'what is cloud computing' adapting it to the issues and opportunities for their organizations.

Forrester defines cloud computing as: A form of standardized IT-based capability1 - such as Internet-based services, software, or IT infrastructure - offered by a service provider that is accessible via Internet protocols from any computer, is always available and scales automatically to adjust to demand, is either pay-per-use or advertising-based, has Web- or programmatic-based control interfaces, and enables full customer self-service.

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Gartner has come up with another explainable definition for Cloud Computing, defining it a kind of computing where scalable and elastic IT related capabilities are offered "as a service" to external customers using Internet technologies.

Amidst an amalgamation of all the existing definitions of cloud computing, we see:

"Cloud computing as a network of computers creating a service-oriented architecture and facilitating an access to shared configurable resources that can be provisioned, scaled up or down, with minimal efforts. These resources can vary from networks, servers, to data storage, business critical applications and services."

The cloud is on its way already to revolutionize the way businesses; both SMBs and large scale, are engaging with their potential audience in the arena of global ecommerce. It has resulted into an arrival of platforms that enable "technology leapfrogging", leveling the playing field of global commerce.

How does Cloud Computing Work

A user connects with a server to perform a task. Though the action remains similar as performed in a traditional client server model, the variance in computing process makes the overall difference. Unlike old model, the process in cloud computing leverages virtualization and runs either on a single or multiple computers connected to each other.

Virtualization lets configuration of one or more physical servers into multiple independent 'virtual' servers. None of these servers is dependent on the other, however, appears as a single physical device to the user. Since all these servers are 'virtual', they can be easily be scaled up or down, according to the requirements without affecting the end user.

Origin of the term 'Cloud'

The image comes from the age old concept of showing Internet as a cloud in flow charts and diagrams. With virtual space connecting a multitude of users across the globe, the Internet has also always been portrayed as the cloud, sharing information by way of satellite networks.

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Cloud computing provisions resources on a granular basis, leading to a multitude of benefits for end users, including on-demand self-service, wide access across multiple devices, resource pooling, rapid elasticity and service metering efficiencies.3

Understanding a linear perspective of cloud computing, it refers to a server or servers connected through a communication network such as the Internet, an intranet, a local area network (LAN) or wide area network (WAN).

A user permitted to access the server uses the server's processing power to perform computing tasks like running an application or storing data. Since the server is the source of processing power for the task, and is also connected to a network via the Internet, the task can be performed from anywhere, anytime. This eliminates a need for the user to log on to a machine to perform the required task.

A cloud provider has actual energy consuming servers (located at a facility called datacenters) to host clients' products and services, allowing client to perform computing tasks 'as a service', using Internet technologies, without installing anything at his end. These products and services can range from hosting a website to hosting complete IT infrastructure. Cloud computing relies on sharing of resources to achieve consistency and cost efficiency for the client, similar to a utility (like the electricity grid) over a network.

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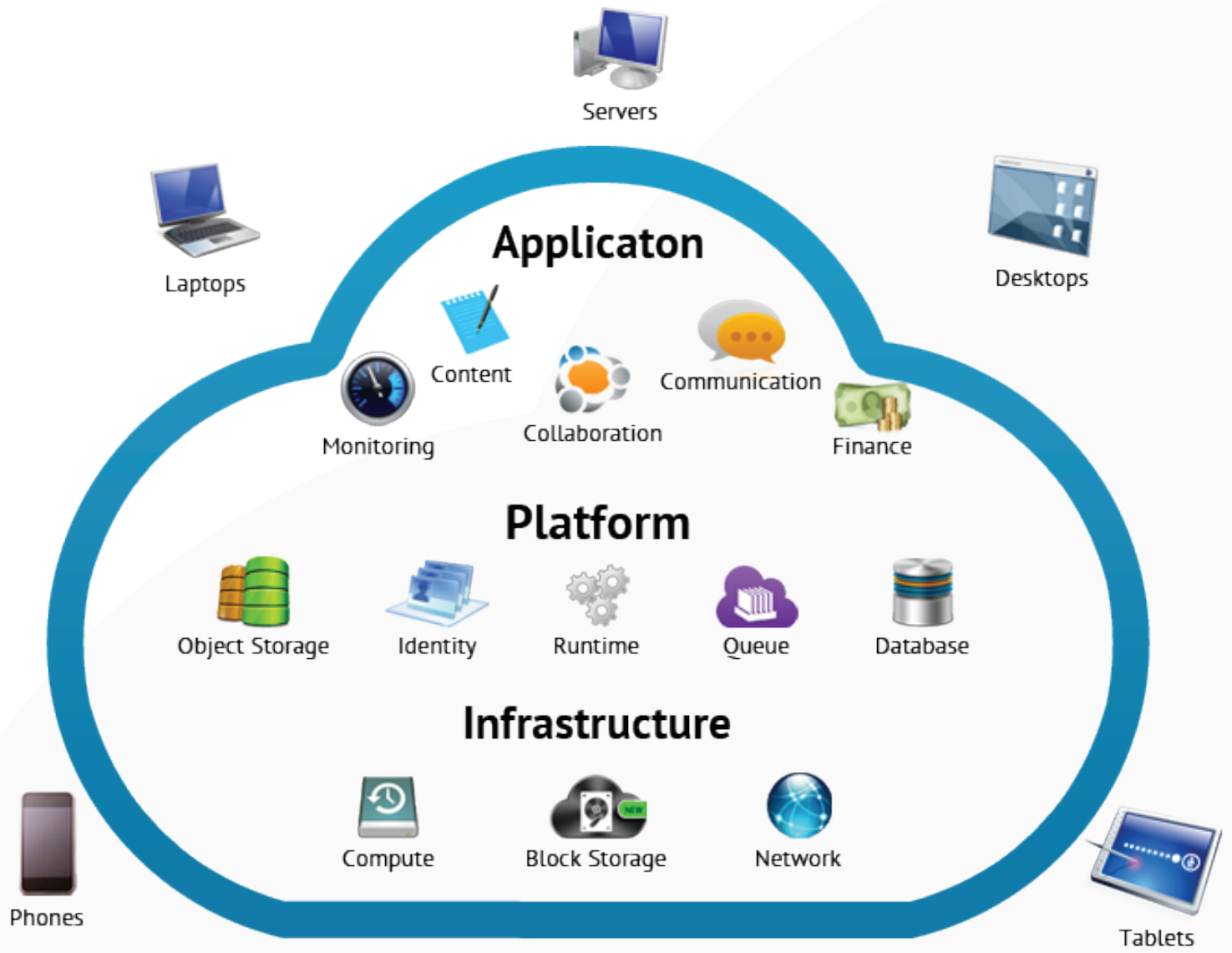
Simplifying the Cloud Computing offerings

The services offered under the umbrella of ‘Cloud Computing’ are broadly classified as Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). These cloud services may be offered in a public, private or hybrid network.



Cloud Computing

Infrastructure as a service (IaaS)

Infrastructure as a Service (IaaS) is a growing cloud model that allows businesses to outsource computing equipment and IT resources like server, storage, networking hardware and services such as virtualization, load balancing and content delivery networks. While IaaS provider owns and maintains the equipment, the businesses lease in specific services they require, on a "pay as you go" basis.

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IaaS makes a lot of sense for SMBs that operate on razor thin margins as compared to their larger counterparts. They can have the entire IT infrastructure on demand and scale up and down according to the business requirements, saving cost and hassles of running own data centers.

Software as a Service (SaaS)

Software as a Service (SaaS) offers businesses to access required software applications over the Internet either as a service on demand, with pay as you go model, offering host of benefits for all size businesses - from cost savings to scalability to accessibility.

Instead of buying software and paying for troubleshooting and upgrades, the user pays for software incrementally, based on the actual usage levels. However, SaaS models differ fundamentally from traditional enterprise application delivery.

SaaS providers are coming up with a bevy of wares geared towards customers looking for ready to go, preconfigured solutions that can reduce impact on capital budgets.

Platform as a service (PaaS)

Platform as a Service (PaaS) is a cloud model that offers a computing platform for the user to create an application/service using tools from the provider. While the provider rents out the networks, servers, storage, and other services to host the consumer's application, the user controls application deployment and configuration. It eliminates cost and complexity of purchasing, troubleshooting, upgrading and managing the underlying hardware and software and provisioning hosting capabilities for the user.

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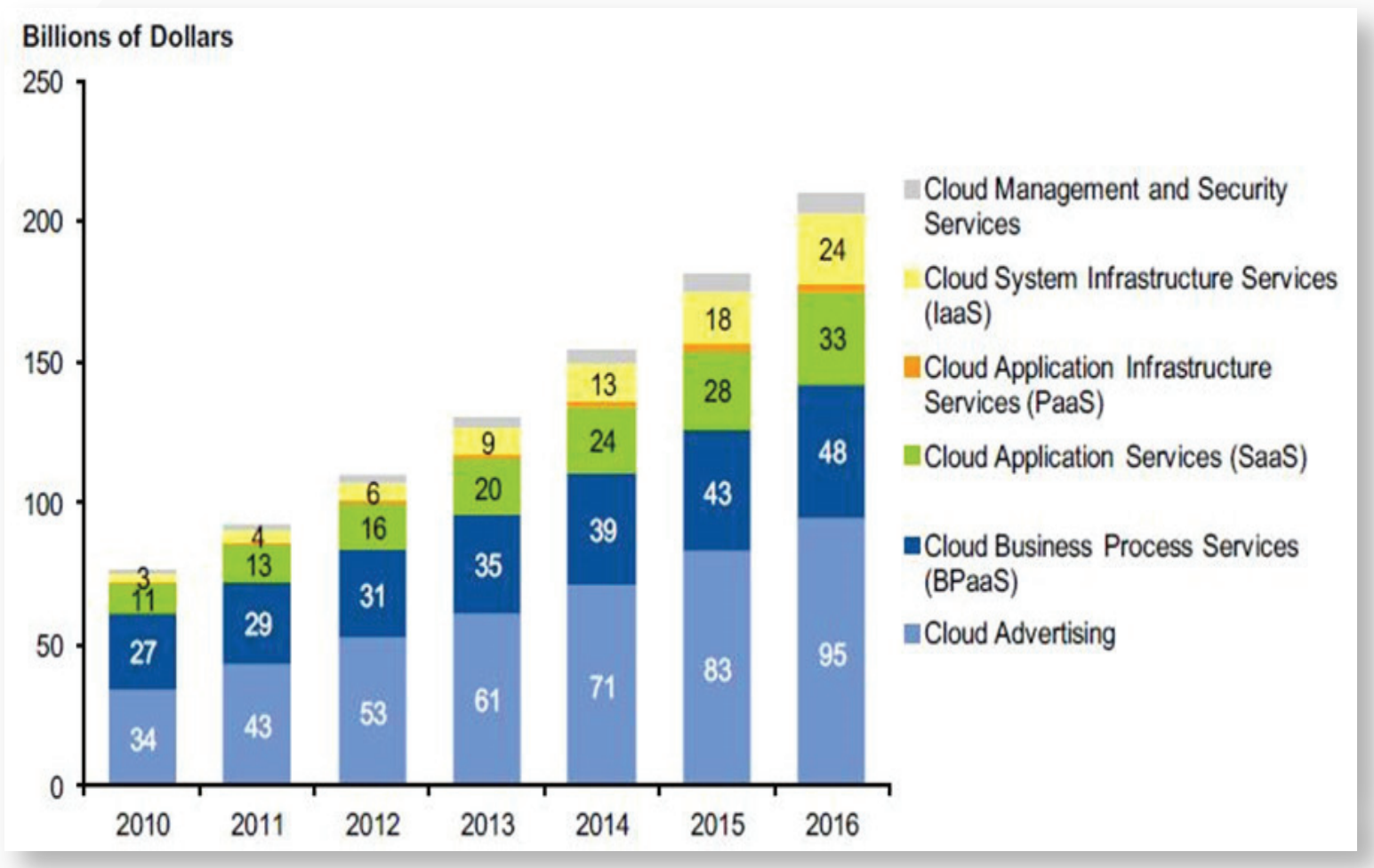
Playing field of Cloud

Cloud undoubtedly levels the playing field for SMEs. Extreme cost pressures in today's economic climate have forced SMEs to do more with less, and still deliver excellent service. Security threats continue to plague their IT infrastructure, as spam and viruses show no signs of slowing. At the same time, users expect 100% uptime while demanding tight integration with the latest technologies, smart applications, and mobile devices. More and more SMBs are turning to cloud hosting providers to optimize their IT infrastructure and alleviate these challenges.

Falling in sync is Gartner's forecast for the growth of Infrastructure as a Service (IaaS) in the cloud space. **"IaaS will achieve a compound annual growth rate (CAGR) of 41.3% through 2016, the fastest growing area of public cloud computing the research firm tracks."**

The following graph offers an insight into relative market size by each public cloud services market segment:

Public Cloud Services Market by Segment, 2010-2016



Source: Gartner (February 2013)

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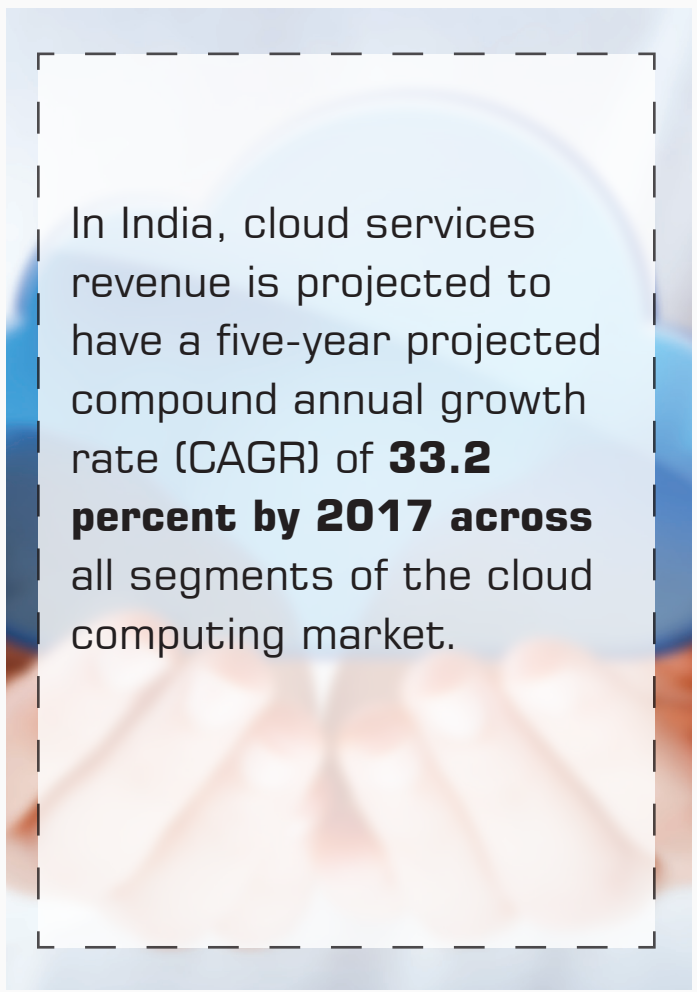
A high proliferation of IT services delivered via hardware and software has pushed a considerable growth in IT commoditization. Using the same as a base, analysts see cloud computing becoming a popular computing model. Undoubtedly, the concept is becoming as influential as e-business. Also, the types of IT services that can be delivered through a cloud are wide reaching.

As more and more enterprises are looking forward to consume their IT services in the most economic way, they seem to be highly interested in leveraging a comprehensive range of services from the cloud than from on-premise facilities. The array may include: Computational Power, Storage, Business Applications etc. Interestingly, the levels of hype around cloud computing in the IT industry are boisterous, with every vendor trying to introduce and sell its cloud strategy and variations. This is further pushing the concepts like private cloud computing and hybrid approaches, compounding the hype.

Gartner suggests both enterprises and cloud computing vendors to plan out a strategy, and the enterprises considering embracing the technology should study it thoroughly. Undoubtedly, the technology seems to have enough potential to change the way the IT industry looks at user and vendor relationship.

Some economists see Cloud Computing as a technology model armed with the immense potential to not only transform the way IT resources are utilized but change the way people work and enterprises operate. Some industry connoisseurs reckon that there might prevail multibillion- dollar opportunities in the emerging cloud computing market

According to Forrester, the pressure to achieve more flexibility from the existing IT infrastructure in an economic upturn is bringing about a fundamental shift in the way technology is being procured. This has generated a need for decision makers to re-examine the ROI of outsourcing and adopt technologies like cloud services.



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Where's the Cloud Heading to

Cloud computing, today is being forecasted as the next-generation shift that brings together both the Internet and computing, so as to ensure that the software and data can be stored in remote servers operated by other organizations.

In India, cloud services revenue is projected to have a five-year projected compound annual growth rate (CAGR) of 33.2 percent by 2017 across all segments of the cloud computing market.

According to the industry analysts, **"from 2013 through 2017, $4 billion will be spent on cloud services in India.** SaaS is the largest overall cloud market segment, followed by infrastructure as a service (IaaS), totally $76 million in 2014 and business process as a service (BPaaS), totally $73 million over the same period.

Although these figures look promising, India is yet to live up to the confident growth predictions for cloud computing put forward by analyst firms." Both large enterprises and start-ups are trying their level best to leverage the benefits of cloud computing.

Of all the cloud services, enterprises especially large sized businesses have expressed strong interest in Infrastructure-As-A-Service (IaaS) cloud. IAAS offers enhanced flexibility with computing and storage services which can be tweaked according to the changing business requirements. This eliminates the need for contractually pre-determined business forecasts and ties to a single provider as required in traditional outsourcing methods.

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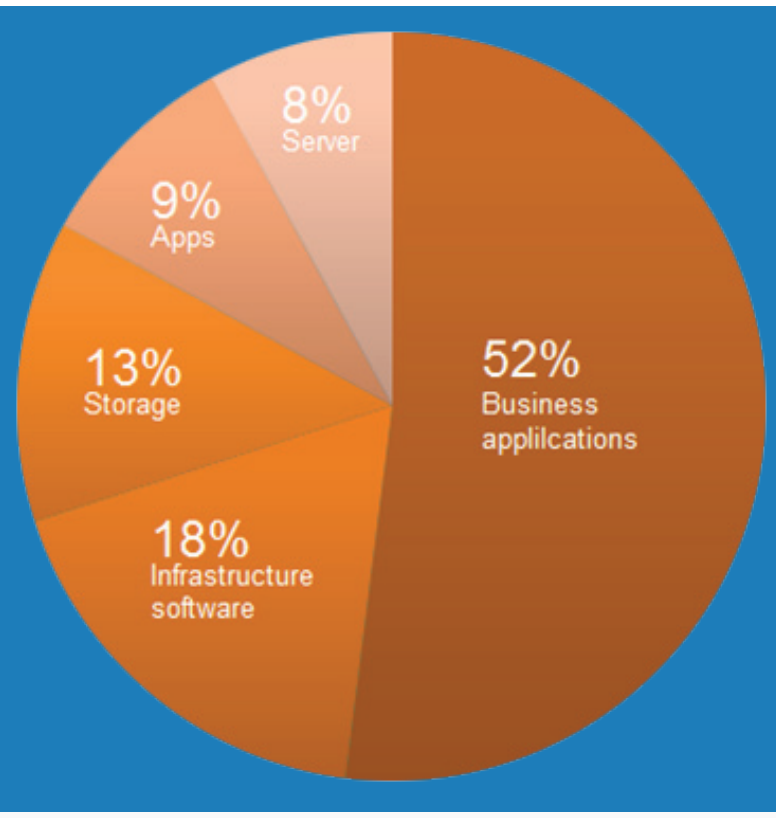
How’s the world entering the Cloud Arena

Cloud Adoption

Adopting the Cloud

Market Research Firm IDC Predicts Cloud Computing will not only increase during the next few years, but the way organizations use the technology will change too.



There are multiple cloud - enabled service offerings available in the market - including infrastructure as a service, platform as a service, cloud-based applications, information services, business process services, security services, and enabling technologies to support delivery of cloud computing services.

Each offering is unique in the business needs it caters to and in the way each is delivered. So, the first and the foremost question to ask is if the service provider can deliver the exact cloud services you need. If the answer is “yes”, then the cloud provider’s requisite expertise and base infrastructure to support our cloud solutions will be demonstrated not just in the number of years they’ve been in business, but by their visible customer successes.

Some companies like Amazon, IBM, Sun Microsystems and Google are offering public clouds in which resources are dynamically provisioned on a self service basis over the Internet via web applications. On the other hand, some IT vendors like Rackspace, Terremark and Cyber Futuristics India Pvt. Ltd. are offering cloud on public, private and hybrid networks, ensuring greater security, corporate governance and reliability.

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Since Cloud Computing is an evolving concept, IT vendors need to consider key components of the cloud computing strategies when making long term deals that may or may not include cloud services in present but might in the future. For example, IBM aims at delivering cloud services directly to clients and helps them create their own cloud technology environment. Similarly, HP is focused on developing cloud services for automated IT infrastructure, cloud implementation, social computing and web based services. TCS is still planning out a cloud computing strategy and focusing on the services to add for both public and private cloud environments.

Then there are the vendors offering enterprises the chance to run not only business applications but also custom developed applications in the cloud – with greater flexibility to scale computing power. Most of the providers are either offering cloud services for clients via consulting, delivering cloud services (which can include aggregating services from other providers), or both. Clients should be clear about whether a particular service provider is implementing, managing, or delivering the services provided by external cloud providers or their own internal capability.

Conclusion

Considering today's current technical and business environments, cloud makes good business sense. IT continues to grow in size and complexity, with new technology being added every day. Security threats in the form of both viruses and hackers continue to jeopardize the safety of enterprise information, presenting further challenges. Combine these with the current economic situation, which deprives even the best IT departments of adequate resources to maintain service levels, cloud computing becomes the smart choice. The costs are lower, the headaches go away, service quality improves, security tightens, and perhaps most importantly, IT can focus on the strategic, higher profile projects that will help contribute to the bottom line success of their core business

No matter where you are in the cloud adoption lifecyle, we can help. Cyber Futuristics has recently launched its powerful cloud offerings under the brand name CloudOYE, with the acronym O..Y..E standing for Optimal, Yielding and Elite respectively, backing for the product's USP.

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CloudOYE delivers infrastructure as on-demand, scalable, and usage billed services. It efficiently combines the economies of scale of a public cloud with scalability and flexibility of a private cloud to cater enterprise requirements for security, availability, flexibility, and performance. It is fast emerging as a rapid, scalable and powerful cloud solution for all size businesses.

End Notes

1- **"Future View: The New Tech Ecosystems of Cloud, Cloud Services, And Cloud Computing" report.**

2- **Industry Research Government 2.0: Gartner Definition**

3- **Wikipedia explains the working of Cloud Computing and the service models**

Contact Us

About CloudOYE

CloudOYE commenced its operations in the year 2010 and has smoothly established itself as a leading cloud hosting service provider in the world. Our presence stretches across various cities with offices in Houston, U.S.A. and India offices in New Delhi, Bengaluru, Jaipur, Mumbai and Ahmedabad. We proficiently deliver modernized cloud services to our clientele.

We take pride in our domain expertise, fully managed services, integrated cloud infrastructure and indefatigable technical support for customer assistance. Our business has progressed in leaps & bounds since its nascent stage.

For more information, please log on to
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