Cloud Service Providers: An Analysis of Some Emerging Organizations and Industries

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ABSTRACT

Cloud Computing is one of the important service providers in the modern IT and Computing market. This is the service for offering hardware, software, applications, operating systems, platforms and complete IT systems through the internet and similar services. There are different models and service opportunities in Cloud Computing. Day by day such service i.e. its types are increasing and including service providers. The Service models viz. SaaS, IaaS, PaaS are most popular since long back and from recent past other focused service models on security, storage services as well. As far as types are concerned among the Public Cloud, Private Cloud and Hybrid Cloud Computing the required are used in the case to case basis. And in many cases hybrid cloud computing is increasing. However, public cloud computing is the most important and valuable in many contexts. Initially only reputed IT companies are responsible for cloud-based services but gradually other companies dedicated to only cloud-based services have also emerged. Importantly such companies and service providers are from developed and developing countries as well. Cloud Service providers offer various service models, opportunities, flexibilities. The number of service providers in a country like India is also increasing. The market size for cloud is an important matter to note. This paper is highlighting the aspects of cloud service providers, current market size and growing trends as well. This paper is a kind of overview one where brief features and aspects of cloud service providers are offered.

Keywords: Cloud Computing, Cloud Service Providers, India Cloud, SaaS, PaaS, Modern Cloud Services, IT Systems.

1. INTRODUCTION :

The world is changing rapidly. Organizations and institutions are responsible for the Information Technology practice. The basic Information Technology components viz. Database Technology, Multimedia Technology, Software Technology, Networking Technology, etc are the core in Information Systems design and development in organizations and institutions [1], [15], [22], [23]. The latest technologies viz. Cloud Computing, Big Data Technologies, Human Computer Interaction, Data Analytics are important fields and areas. However, among these emerging technologies important are Cloud Computing & Technology, Virtualization, etc. Cloud Computing is a virtualization technology which is applicable in different IT components and infrastructure, etc. In other words, making virtual presence or availability of Information Technology by the internet and similar infrastructure is called Cloud Computing. The following are core types of Cloud Computing—

- Public Cloud Computing—*It is dedicated to Cloud Services including most of its emerging are available through the internet or public based systems.*
- Private Cloud Computing—This kind of Cloud Computing is mainly designed and build within an organization itself depending upon need and situation.

- Hybrid Cloud Computing—Hybrid Cloud Computing is the combination of both and important in different cases where privacy and ownerships are important issues.

Further, it is worthy to note that the services are available in respect of software, storage and database, infrastructure, platform and systems, security and privacy, etc [2], [3], [16], [25]. These services are nomenclature as different way viz.—

- Software as a Service
- Infrastructure as a Service
- Storage as a Service
- Platform as a Service
- Security as a Service, etc [4], [7], [17], [30]

Initially, only, public cloud computing were most common but gradually depending upon the capacity and condition other areas of the cloud also become important and valuable viz. Private Cloud and Hybrid Cloud Computing [5], [6], [15], [24]. It is worthy to note that, as far as service models are concerned initially only Software as a Service and Storage as a Services were common and mostly used but due to the need other areas also been added into this list [8], [11], [27].

2. OBJECTIVES :

The main aim and objective of the paper entitled 'Cloud Service Providers: An Analysis of Current and Emerging Organizations and Industries' is including but not limited to the following—

- To learn about the basics of Cloud Computing; including its meaning and core types in a simple manner.
- To know about the various service models in Cloud Computing including their initial and current trends.
- To learn about the market trend in Cloud Computing business in short with Indian status in this respect.
- To learn about the few Cloud Computing Service Providers with their basic services and features at a glance.

3. CLOUD MARKET WITH OVERVIEW OF SOME SERVICE PROVIDERS WITH THEIR FEATURES :

According to the Market survey company Statista, with over 460 million internet users, India is the second-largest online market, ranked only behind China. Further Statista described that by 2021, about 635.8 million internet users will be in India and as a result directly and indirectly it will effect cloud based systems."

It is worthy to know that India is in a rapid stage in digital space. The growing internet users thus using data and cloud-based services directly and indirectly and this trend will increase in the coming years as well [9], [10], [28]. Internet penetration is another fact, that is expected with Digital India support more development in Communication and Cloud Computing can be noted as a largescale digitalization scheme towards the transition of high-speed 4G LTE and more emerging 5G wireless technologies. This presents a huge demand for the data center infrastructure [12], [17], [23].

Hence as a result the whole Cloud Computing based Data Centre market will grow-up in Indian by different means. According to the Director, Reliance JioInfocomm the Public Cloud Computing market in India is growing rapidly and the market will rise more and can reach over *$4 billion by 2020[6], [20], [21].*

Competitive governmental policies are also important in Cloud Computing market growth and as a result, different organizations and service providers are increasing internationally including in India helping global players like

- Amazon Cloud
- Alibaba Cloud
- Google Cloud
- Microsoft, etc [13], [18], [26].

All these companies started their business nicely in developing countries like India. However, there are few benefits and features on local players due to a few additional features and benefits in respect of international players in market conditions also. There are many interesting facts in this segment viz. CtrlSis currently Asia's largest Tier 4 datacenter, NxtGen is moved with transformational services with the technologies viz. DevCloud, Machine Learning (ML) and Artificial Intelligence (AI), on the other hand, ESDS is also providing AIT and ML based smart city solutions [14], [19], [29]. Most of such Cloud Service providers even created their special Cloud Service based logo as well, in this regard please look into Fig: 1 & 2.

The following are few organizations and companies which are offering Cloud Computing based Services and Data Centre services—

Amazon Web Services: An Overview

Amazon Web Service in short called as AWS. It is Amazon's cloud web hosting platform. Amazon Web Service offers fast, flexible, reliable and cost-effective cloud-based solutions. Amazon Web Service is available with a building block and thus able in creating and deploying any kind of application in the cloud. Amazon Web Service is one of the popular as it was treated as first to enter the cloud computing and Virtualization space.

Features and Functions of Amazon Web Services

The following are the core features and functions of Amazon Web Service (but not limited to the following)—

- Sign-up process of Amazon Web Service is too easy.
- Amazon Web Service allows Fast Deployments
- Amazon Web Service is easy in managing of add or remove the capacity of any systems.
- Amazon Web Service is allowing effective and limitless capacity.
- AWS is able in Centralized Billing as well as management
- Hybrid Capabilities and per hour billing is also another feature of Amazon Web Service.

Cloudways: An Overview

Cloudways is an emerging cloud service which provides cloud hosting to different stakeholders viz. agencies, stores, and SMBs. Top cloud providers including AWS, Google Cloud, DigitalOcean, Vultr and Linode, etc are partnered with Cloudways. Cloudways is helps in building, deploying and managing applications with different features viz. Laravel, WordPress, Magento, etc. importantly for this there is no need of any knowledge of cloud server management. Cloudways users can do the needful in business operation and for this there is no need of technical aspects of server management, security, and maintenance.

Features and Functions of Cloudways

The following are the core features and functions of Cloudways (but not limited to the following)—

- Cloudways offers PHP 7 Ready Servers.
- Cloudways comes with the Simple 1-Click App Installation for the users.
- Cloudways is having with benefits of Pre-configured PHP-FPM and Redis.
- Free SSL Certificates is another feature of Cloudways.
- Cloudways is offers Automated Backups and Staging Environment.
- Always or round o’ clock technical support is provided by the Cloudways.

Digitalocean’s: An Overview

Digitalocean's droplet is a scalable and cloud based computer service. It is not only a simple virtual machine but also offers different cloud based services add-on storage, security, and monitoring and run different applications effectively.

Features and Functions of Digitalocean’s

The following are the core features and functions of Digitalocean's (but not limited to the following)—

- Deployment of the custom image, one-click app, or standard distribution are possible with the Digitalocean's services.
- A reliable connection and flat pricing across 8 data center regions are possible with Digitalocean's cloud services.
- Performance Plans according to the user’s business need is offered by the Digitalocean's cloud services properly.

Kamatera: An Overview

Kamatera is a cloud server tool and much similar to a physical server, but operated in a virtual infrastructure cloud. Thus, it is highly flexible as well as cost-effective. Kamatera is based on pay as you use model and thus having many advantages.

Features and Functions of Kamatera

The following are the core features and functions of Kamatera (but not limited to the following)—

- Kamatera offers 13 Data Centers across four continents.
- For ultimate performance and availability customized VPS Hosting is helpful.
- Kamatera is comes with the feature of Scalability and thus able in easy load balancing, managing firewalls, private networks

- Kamatera is able in different applications viz. pfSense, Docker, CPanel, Drupal, Jenkins, WordPress, Magento, node.JS and many more.
- Kamatera is offering scale across hundreds of servers in seconds and allows billing Per Month or Per Day basis.
- Kamatera is offers 30 Day Free Trial to test the services and services are available round o clock.

Rackspace: An Overview

Rackspace is an important cloud computer service tool and mainly offers hosting web applications including the following (but not limited to the)—

- Cloud files
- Cloud backup
- Database and
- Cloud server, etc.

Features and Functions of Rackspace

The following are the core features and functions of Rackspace (but not limited to the following)—

- Rackspace allows Fast-migrating to the Cloud with pay as you go model and thus based on usage the payment can be done.
- The combination of solid-state drives and hard drives to deliver high performance is allows in Rackspace.

MassiveGrid: An Overview

Virtual and Dedicated Private Clouds is the core feature of MassiveGrid Cloud Services. MassiveGrid offers Virtual Private Clouds flexibility to manage their resources according to the business need.

Features and Functions of MassiveGrid

The following are the core features and functions of MassiveGrid (but not limited to the following)—

- MassiveGrid offers fast, secure Network Infrastructure using cloud
- In MassiveGrid's Private cloud client, a secure web control panel.
- MassiveGrid high availability services, healthy infrastructure, fast and comes with dedicated Hardware.

Alibaba: An Overview

It is the largest Chinese cloud computing company and operated with over 1500 CDN Nodes; moreover, it has worldwide of 19 regions and 56 availability zones. Further, MassiveGrid is operated from more than 200 countries.

Fig. 1: showing interactive logos of Cloud Service Providers (A to I)

Features and Functions of Alibaba

The following are the core features and functions of Alibaba (but not limited to the following)—

- Alibaba helps in achieving faster results and protect as well as backup of data.
- Alibaba comes with Full management permissions
- Alibabais also with the feature of multiple management methods and thus having reliable data storage.

The Liquid Web: An Overview

The Liquid Web is offered managed hosting platform (cloud based) which offers creatives freedom to build. Further it is also able in launching websites without the need to of server management.

Features and Functions of The Liquid Web

The following are the core features and functions of The Liquid Web (but not limited to the following)—

- The Liquid Web helps in managing sites quickly and effortlessly and also helps in hosting Unlimited Sites.
- The Liquid Web allows hosting of many Apps with a single Account and thus no need of any server management skills.
- The Liquid Web can be integrated with WordPress, Drupal, Joomla and other software as well easily.

Azure: An Overview

Azure is a cloud solution and launched by Microsoft in the year 2010. Azure is an open source platform. Further it is flexible cloud platform required in following operations mainly—

- Design, Development of data storage.
- Service management & hosting solutions from the Azure also very important.

Features and Functions of Azure

However, following may be considered as core features and functions of Azure (but not limited to the following)—

- Windows Azure is able in making most effective solution for data and similar services.
- Scalability, flexibility, and cost-effectiveness are the core features of Azure.
- Azure comes with the consistency across clouds.
- Azure help in scaling IT resources utilizations according to needs or requirement of the organizations.

Google Cloud: An Overview

Google Cloud is offers different cloud based solutions which includes GCP & G suite. And it is gaining popularity in recent past.

Features and Functions of Google Cloud

The following are the core features and functions of The Google Cloud (but not limited to the following)—

- Google Cloud helps in scaling with open, flexible technology.
- Google Cloud solves the issues, accessible data analytics services.
- Google Cloud helps in costing need of installing servers in many cases.
- Google Cloud is helpful in transforming business with different modules in cloud-based services.

VMware: An Overview

VMware is a Cloud Computing service and very comprehensive cloud management in nature. It is also one of the popular in the market. VMware Cloud Computing is responsible for the managing hybrid environment. It is further running traditional to container workloads. The tools are also allowed maximizing IT output with less budget.

Features and Functions of VMWare

The following are the core features and functions of The VMware (but not limited to the following)—

- VMware Cloud Computing is a kind of Enterprise-ready Hybrid Cloud Management Platform and internationally popular.
- Both important type of Cloud i.e. Private & Public Clouds are offered by the VMware Cloud Computing.
- VMware Cloud Computing allows comprehensive analytics which improve the capacity of the systems.
- VMware Cloud Computing offers additional integrations to the users or third party and also helps in custom applications.
- VMware Cloud Computing helps in providing flexible, Agile based IT services.

Salesforce cloud computing: An Overview

Salesforce cloud computing is suitable and offers multiple cloud services and among these important are Sales Cloud, Service Cloud, Marketing Cloud. Salesforce cloud computing is helps in accelerate production by different services.

Features and Functions of Salesforce

The following are the core features and functions of The Salesforce (but not limited to the following)—

- Salesforce cloud computing services are available round o' clock.
- Decisions making is important feature of an organization and here Salesforce cloud computing play a leading role.

- Salesforce cloud computing helps in customers details management using automated systems and makes easy business processes.

Oracle Cloud: An Overview

Oracle Cloud Computing comes from the Oracle Corporations and it is most innovative model. Further it is an integrated cloud services and responsible for designing, deploying and managing workloads in the cloud. Oracle Cloud also helps in reduce complexity by its different services.

Features and Functions of Oracle Cloud

The following are the core features and functions of The Oracle Cloud (but not limited to the following)—

- Oracle Cloud Computing is available everywhere and anytime model based on the requirement of the organization.
- Modern technologies including DL, ML and other Artificial intelligence, chatbots, etc are powered with the Oracle Cloud Computing.
- Oracle Cloud Computing comes with the Next-generation data management system in the cloud nature.
- Oracle Cloud Computing improve better visibility of the services and apps and also protects from the cyber attacks, etc.

Fig.2 : Showing interactive logos of Cloud Service Providers (K to V)

Verizon Cloud computing: An Overview

Verizon Cloud computing platform allows you to control IT infrastructure. Further it comes with advanced features.

Features and Functions of Verizon Cloud computing

The following are the core features and functions of The Verizon Cloud computing (but not limited to the following)—

- Verizon Cloud computing is dedicated to expand any workload quickly with less risk
- Verizon Cloud computing is helps in healthy cloud with performance, support, flexibility to build healthy IT Systems.
- Flexible and scalable services are offered by the Verizon Cloud computing systems.
- Verizon Cloud computing helps in risk and data integrity management with solid support from the team.

- Healthy and developed enterprise workload along with strong security and trustworthy performance is possible with the Verizon Cloud computing.
- With Verizon Cloud, we can choose the flexible services required for our enterprise and secure our data in a personalized environment.
- Verizon Cloud computing helps in gaining speed and reliability of the IT Infrastructure.

NaviSite : An Overview

NaviSite provide cloud services for different types of organizations and institutions and specially enterprises as well as mid-sized organizations requires support of the IT technologies.

NaviSite offers cloud service specially the Cloud Infrastructure services, Cloud desktop, and hosting services for better Business Informatics practice.

Features and Functions of NaviSite

The following are the core features and functions of The NaviSite (but not limited to the following)—

- NaviSite simplifies different type of application management services even general office management applications.
- NaviSite offers different Infrastructure-as-a-Service solutions which are cloud based and comes with the self-service cloud solutions.
- NaviSite Cloud Solution simplify desktop management as well as administration.

IBM Cloud: An Overview

IBM Cloud is a full stack cloud platform which spans public, private and hybrid environments. It is built with a robust suite of advanced and AI based tools.

Features and Functions of IBM Cloud

The following are the core features and functions of IBM Cloud (but not limited to the following)—

- IBM cloud offers infrastructure as a service (IaaS), software as a service (SaaS) and platform as a service (PaaS)
- IBM cloud comes with high performance cloud communications in the IT environment of the organizations.

OpenNebula: An Overview

OpenNebula is a cloud computing platform and suitable for managing heterogeneously infrastructures or distributed data center. The data center's virtual infrastructure can be far better with OpenNebula and ultimately dedicated to build different kind of cloud computing solutions viz. private, public and hybrid implementations.

Features and Functions of OpenNebula

The following are the core features and functions of OpenNebula (but not limited to the following)—

- Installation, usages, maintain, as well operating cloud based services are possible with OpenNebula.
- OpenNebula comes with the greater functionality for private as well as hybrid clouds for different types of organizations.
- OpenNebula is highly-scalable, reliable, as well as commercially supported by different products and services.

Pivotal Cloud Foundry: An Overview

Pivotal Cloud Foundry in short known as PCF. It is a proven and healthy digital solution for businesses houses and organizations. Pivotal Cloud Foundry comes with healthy software-driven solutions.

Features and Functions of Pivotal Cloud Foundry

The following are the core features and functions of Pivotal Cloud Foundry (but not limited to the following)—

- Pivotal Cloud Foundry is with the accelerate feature delivery.
- Pivotal Cloud Foundry is supporting tool for zero-downtime deployments.
- It reduces risk in the organization’s app portfolio.
- Pivotal Cloud Foundry Deliver Enterprise Service level agreement at scale for better IT infrastructure.

4. CLOUDSIGMA: AN OVERVIEW :

Cloudsigma is a cloud computing solutions and very flexible in nature. Here cloud servers, virtual private server hosting solutions are offered effectively. Cloudsigma offers a straightforward and transparent approach and easily can be switch in multiple gigabit speed from their cloud servers if needed.

Features and Functions of Cloudsigma

The following are the core features and functions of Cloudsigma (but not limited to the following)—

- Cloudsigma offers complete control as well as flexibility in cloud environment.
- It allows both mix and matches of all SSD as well as magnetic storage systems.

- Cloudsigma is a cloud computing service specially with for security and data privacy services.

Dell Cloud: An Overview

Dell Cloud offers the cloud-enabled infrastructure and models, and serves. Dell Cloud selects from reference architecture which includes the integrated and public cloud platforms.

Features and Functions of Dell Cloud

The following are the core features and functions of Dell Cloud (but not limited to the following)—

- Dell Cloud works with existing operations and requirements.
- Cloud consumption using Dell Financial Services is possible with Dell Cloud.
- Dell Cloud helps in accelerate and transformation with expert cloud services and infrastructure.

OnePortal Rapid: An Overview

OnePortal is a cloud service and built with latest open source technology and comes with faster, rich, and scalable services.

Features and Functions of OnePortal Rapid

The following are the core features and functions of OnePortal Rapid (but not limited to the following)—

- OnePortal dedicated to build and deploy applications with standard OpenStack systems.
- Horizon web dashboard of OnePortal required for easy tracking and also managing cloud based services.
- OnePortal allows flexible billing method and this is very much suitable for the organizational promotion and development.
- OnePortal allows quickly scaling with additional storage resource and services.

Quadranet: An Overview

Quadranet is a cloud computing service and fully scalable as well as reliable cloud infrastructure, in financial services and activities Quadranet is most applicable and important.

Features and Functions of Quadranet

The following are the core features and functions of Quadranet (but not limited to the following)—

- The SLA of Quadranet comes as default with all cloud configurations
- The InfraCloud supports many OS such as CentOS to FreeBSD to Windows, etc
- custom interface of Quadranet helps in managing InfraCloud instances and developed.

phoenixNAP Cloud: An Overview

phoenixNAP is a Cloud based service and a reputed global IT services provider. phoenixNAP normally offers secure and scalable IaaS i.e. Infrastructure-as-a-Service solutions. The services of private, public, and managed cloud services are also important in phoenixNAP. Data Security Cloud, Virtual Private Data Center, Managed Private Cloud, Public Cloud, etc are the most popular technologies under phoenixNAP and that helps in business promotions and needs.

Features and Functions of phoenixNAP

The following are the core features and functions of phoenixNAP (but not limited to the following)—

- phoenixNAP Cloud Service is comes with advanced backup, disaster recovery, and availability solutions; apart from high-performance cloud platform,
- phoenixNAP is delivered by the open-friendly model and here services accessible to enterprise-grade technology at an affordable price.
- phoenixNAP's cloud computing solutions helps in meeting compliance, security, as well as business continuity goals.

ScienceSoft: An Overview

ScienceSoft is cloud infrastructure services providers. ScienceSoft provides Managed cloud services to non-IT companies using AWS / Azure. ScienceSoft also helps the SaaS service provider and combined the integrated services.

Features and Functions of ScienceSoft

The following are the core features and functions of ScienceSoft (but not limited to the following)—

- ScienceSoft offers End-to-end cloud managed services and also cloud infrastructure consultation, and also troubleshooting.
- ScienceSoft offers management, monitoring, security related solution including cloud migration; cloud infrastructure optimization to the users.
- ScienceSoft was established partnerships with AWS and Azure to promote IoT and Big Data based services.

Adobe Cloud: An Overview

Adobe offers many cloud based services to its products. Some of the example in this regard, are include—

- Adobe Creative Cloud
- Adobe Experience Cloud
- Adobe Document Cloud
- Adobe Document Cloud, etc

Features and Functions of Adobe Cloud

The following are the core features and functions of Adobe Cloud (but not limited to the following)—

- Adobe Creative Cloud service is supported by the SaaS, and accessible by the user viz. the services of editing the videos, photography, graphic designing, animation etc.
- Adobe Experience Cloud comes with the advertising, building campaigns solutions.

5. REDHAT CLOUD: AN OVERVIEW :

Red Hat is an Open Cloud technology used by IT organizations to deliver agile and flexible solutions.

Features and Functions of RedHat

The following are the core features and functions of RedHat Cloud (but not limited to the following)—

- Red Hat Cloud is helpful in modernizing the existing apps as well as updating, managing from a single place. Ultimately it helps in integrating all required solutions into a single solution.
- Red Hat based Cloud Infrastructure offers to open cum private cloud at a low cost for different users.
- Red Hat Open Shift is allowed both open and hybrid service regarding the development, deployment, hosting as per the demand and requirement.

SAP Cloud: An Overview

SAP Cloud Platform is a leading cloud based service and applicable for the enterprise with wide-ranging items which are required for the application development.

Features and Functions of SAP Cloud

The following are the core features and functions of SAP Cloud Platform (but not limited to the following)—

- SAP Cloud Platform is considered as one of the best and powerful networks having good cloud collaboration as well as advanced IT security solutions.
- SAP is operated through the recognized SAP HANA for its cloud based services.
- SAP Cloud Platform is following the industrial style of iPhone and iPad etc.

Dropbox: An Overview

Dropbox is a cloud based solution provider and mainly cloud storage service. It is useful for the small business organizations fostering files or documents on remote cloud servers and other tools.

Features and Functions of Dropbox

The following are the core features and functions of Dropbox Cloud Platform (but not limited to the following)—

- It serves as an online or cloud personal hard drive; and may be useful based on need.
- Dropbox allows to get saved data or tool or any device by the internet connection.
- Desktop app is the common type in which Dropbox can be availed; where users can download, save the files directly on the user's systems.

Egnyte Cloud: An Overview

Egnyte is a cloud service provider and mainly helpful in the hybrid cloud. Here no need of combining cloud storage with local storage.

Features and Functions of Egnyte Cloud

The following are the core features and functions of Egnyte Cloud Platform (but not limited to the following)—

- With the help of Egnyte services, one can upload any kind of file of any size and any type any time remotely.
- Egnyte helps in implementing their personal logo on the interface and further activities based on need.
- Automatic syncing feature is common in Egnyte by which users can access the inaccessible data from anywhere.

6. CONCLUSION :

Cloud computing is now more flexible and mature and comes with the features of multi-cloud. It is to be more focused on vertical and a sales ground war. And in this context, apart from the leading Amazon Web Services, Microsoft Azure, and Google other Cloud service providers are also emerging with various services including the platform in infrastructure as a service. It is been noted that, few other technologies viz. IBM, Dell

Technologies, VMware are offering the latest multi-cloud hybrid models as well. In other sector companies like Salesforce, Adobe, SAP and Oracle are offering infrastructure- and database-as-a-service players. Different governments and organizations are also doing well in respect to better cloud computing introduction and systems development in the states and country. Government rules, regulations, and norms are most vital in this context as well.

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