Reviews of Future Trends for Cloud Computing

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Abstract
Cloud computing is no longer the curiosity it was a few years ago. Today companies are progressively looking for cloud computing for an intact component of their computing strategy. Companies at present empathize that cloud computing provides the possibility of being able to more to seamlessly change IT without having the time and expense of setting up, configuring, and deploying new systems. Many companies are discovering that it is much easier to experiment and introduce with cloud computing than with traditional computing models.

Keywords: cloud computing, trends, IaaS, PaaS, SaaS.

Introduction
The terms "cloud computing" and "working on the cloud" refers to performing computer tasks using services delivered completely over the Internet. Cloud computing is a movement away from applications needing to be installed on an individual's computer towards the applications being hosted online. Cloud computing is all about the products and services that are used to support the development and deployment of cloud services. These offerings include:

• IT infrastructure that is able to scale to high volumes and economy.
• Application software like collaboration tools and commercial enterprise applications that are projected specifically for accessing the cloud.
• Application development and deployment software used to create and support cloud services.
• Management software that supports the monitoring and setup of cloud services.
• IP networks that connect end users to the cloud and support all of the above.

A pure cloud computing model is not always the correct option in every situation[1]. You are always going to come across representatives where an IT infrastructure needs to run on its own dedicated server or within a private data center. A company with a remote office in some other part of the world will prefer to have an application installed locally at its home base, but allow the remote users to access the same application over Web.

Types of Cloud Computing
There are three categories of cloud computing:

• Infrastructure as a Service (IaaS): Infrastructure as a Service (IaaS) provides the user with virtual infrastructure, such as servers and data storage space. This is where virtualization fits into the cloud.
• Platform as a Service (PaaS): Platform as a Service (PaaS) provides the user with development environment services where the user can create and run home-grown applications.
• Software as a Service (SaaS): Software as a Service (SaaS) provides the user with access to already created applications that are operating in the cloud.

Cloud Computing Services
Web supported email services like Gmail and yahoo bear a cloud computing service: users can access their email in the cloud from any computer with a browser and Internet connection, regardless of what kind of hardware is on that particular computer[2]. The emails are hosted on Google's and Microsoft's servers, rather than being stored locally on the client computer.

Over the last few years we have examined tremendous growth in cloud computing, as found by the many popular Web apps used today, including: VoIP (Google Voice), social applications (Facebook, Twitter), media services (YouTube, Flickr), contents distribution (BitTorrent) and many more. Even traditional desktop software package, such as Microsoft Office, has moved in part to the Web, starting with Office 2010 Web Apps.
Cloud Computing Trends

There is no doubt that cloud computing is one of the biggest buzzwords in the IT industry today. While there is still some confusion as to what exactly cloud computing entails, the concept is based on having large pools of computer systems sharing an IT infrastructure[1]. Research firm Gartner defines cloud computing as "a style of computing where massively scalable IT-related capabilities are provided 'as a service' using Internet technologies to multiple external customers."

Cloud computing has made it easier for companies to experiment and innovate, and the trend will accelerate in the coming year.

Cloud computing is no longer the curiosity it was a few years ago. Today companies are increasingly looking to cloud computing as an integral component of their computing strategy. Companies now understand that cloud computing offers the possibility of being able to more to seamlessly change IT without having the time and expense of setting up, configuring, and deploying new systems. Many companies are discovering that it is much easier to experiment and innovate with cloud computing than with traditional computing models.

But as with any emerging area it is too soon to declare victory. Cloud computing is complicated in many ways. While 2011 was the year when cloud computing took its place as a legitimate strategy, 2012 will be the year when companies need to tackle operational issues of cloud computing. Therefore, I am predicting five big trends for cloud in 2012.

There is no doubt about the worldwide cloud adoption. According to the National Inflation Association, cloud computing is currently a $74 billion industry that accounts for 3 percent of global IT spending, and it’s expected to become a $150 billion market by 2013. Moreover, cloud computing is creating a million new jobs globally. IDC came out with a Microsoft report that projects that spending on public and private IT cloud services will generate nearly 14 million jobs worldwide from 2011 to 2015. Nearly 1.2 million of those new cloud-related jobs will be created in the U.S. and Canada, the same study stated.

While cloud computing’s impact on technology, businesses, jobs and economy starts to be more powerful there are several key trends which can be identified.

1. Cloud Service Management becomes a requirement for adoption.

   It is becoming apparent that companies will not adopt a single cloud deployment model, but rather will use a combination of various public cloud services (including Software as a Service, Infrastructure as a Service, and Platform as a Service), private cloud services as well as their traditional computing environment. This is especially true for companies in the mid-market and even large enterprises. The ability to manage this hybrid environment will be the difference between success and failure. 2012 will be the year when customers start to plan and implement a service management strategy for the cloud.

2. Cloud Security expands to encompass privacy, compliance, and governance.

   Company executives have been worrying about cloud security ever since Amazon began offering public cloud services. While there are a variety of opinions about how secure various cloud services are, there has not been a consistent best practice related to cloud security. That is changing for 2012. This will be the year when IT and business management will begin to deal with the subtleties of setting rules and processes—which clouds to use under which circumstances. For example, open cloud communities with little security and no governance will be of limited value for companies that have to comply with industry and governmental requirements. On the other hand, there is an emerging segment of public cloud offerings intended for companies that want a higher level of security and governance. Increasingly, organizations are looking to private clouds when governance needs to be strictly enforced.

3. The Service Level Agreement becomes a key buying criterion.

   While the idea of a service level agreement is not new, it is not well understood in the context of cloud computing. One of the most important changes I expect in 2013 is that companies will be taking a much harder look at the way cloud service providers provide SLAs for their services. While all cloud computing providers offer a contractual service level agreement, most are written to protect the vendor rather than the customer. In 2013, customers will begin demanding Service Level terms based on their governance and customer requirements.

4. Corporate management turns attention to security of Big Data.

   Companies are beginning to adopt technologies that enable them to manage and analyze huge volumes of data from many different sources. As attention to Big Data expands in 2012, so will the concerns about protecting both the security and integrity of this composite data source.
Executives demand reliable cloud data security. As attention to Big Data expands in 2012, so will the concerns about protecting both the security and integrity of this data source. This year I am expecting at least one messy breach of data for which cloud will get the blame. That will spur regulators into action and refresh policies by enforcing two-factor authentication and password generation. I also think that, with the wider adoption and the increasing awareness of cloud, providers will need to focus on security innovations.

5. The new definition of the computing environment changes customer expectations.

While organizations have always been concerned about the performance of their customer facing environments, the advent of hybrid cloud computing models will add to the level of urgency. There is a difference between the level of control that IT had over the data center and the control of a hybrid environment that includes public and private cloud services (some Software as a Service applications, capacity on demand for peak times, etc.). Companies will demand the ability to monitor and measure performance from the customer experience perspective.

6. Latest trends of the cloud computing world

The personal cloud will replace the personal computer at the centre of users’ digital lives[3]. Earlier this month Gartner published a report, The New PC Era: the Personal Cloud, which predicts that by 2014, the personal cloud will replace the personal computer. This study highlights five “mega-trends” that are driving the shift in focus from personal computer to personal cloud. First, in the consumer space, Gartner predicts that cloud services will be on 90 percent of personal consumer devices by year 2015. Thus, consumers can store, connect, stream, and synchronize content across multiple platforms at different locations. Other trends include an increasing number of companies having a hybrid plan to connect private and public clouds, more choices for companies looking to make their way into the cloud, alternatives for sourcing and value shifting in the cloud. In addition, the statement of many analysts and companies as the primary benefit of cloud to be lower costs is changing into considering that the top benefit to be is speed and agility.

7. Big Data involves more than just managing volumes of data.

Big data workloads will force many companies to consider alternatives to traditional databases, and cloud deployment models will simplify the rollout. So, large cloud databases will centralize huge amounts of information and analytics will be moved to the cloud too at a faster pace than we expected, but mainly in the private cloud for large enterprises.

8. The growth of Mobile Cloud.

The greater number of people operating their social and professional lives via mobile devices and tablet PCs is going to speed up the demand for faster, more user friendly and storage applications.

9. The move to platforms is increasing.

PaaS (platform-as-a-service) will have further boost in popularity and necessity as it continues to provide companies with scalable data translation and transformation on a cloud platform. The best IT teams will be those that embrace private and public PaaS.

There are many other trends related to each type of cloud (public, private and hybrid) that can be discussed. I believe that the most important and certain thing here, is that in 2013, more companies will continue moving their business processes to the cloud, intensifying expectations for cloud data integration and data management as a part of a company’s information infrastructure[3].

Future scope

The traditional IT outsourcing (ITO) service providers sitting in the cross hairs of cloud computing trend, who are about to see their business models and customer value propositions disrupted. Service providers in the ITO space have, after all, profited handsomely by taking on their customers highly complex, one-off collections of IT assets and finding ways to manage them more efficiently than their customers are able to. But the essence of cloud computing is a move towards highly standardized racks of commodity servers and a software environment that together make for a highly efficient use of resources.

PwC surveyed 489 business executives to find answers to these and other questions about the state of data center infrastructure management. Individual interviews with vendors offering traditional ITO and new cloud-based offerings, including infrastructure as a service (IaaS), complemented the survey[3]. We sought to understand the real state of data center management today, how fast business executives expect to move to cloud infrastructures in the future, and who they will turn to traditional ITO providers, new cloud-oriented providers, or internal staff to make the shift. Finally, the bigger goal is the shift to public cloud offerings or a transition to private clouds.
Conclusion

There are many other trends related to each type of cloud (public, private and hybrid) that can be discussed. I believe that the most important and certain thing here, is that in 2012, more companies will continue moving their business processes to the cloud, intensifying expectations for cloud data integration and data management as a part of a company’s information infrastructure.

References

