PCQUEST Supplement

Embracing Cloud for Your Business

The CLOUD Story

Cloud computing has transformed the way businesses and people around the world work. Accessing data and using applications over the Internet as a service has taken the online world by strom. We use cloud every day when we send emails, upload images to Facebook, listen to music, and do tens of other online activities.

SMEs use cloud computing to manage a range of office functions. Cloud-based solutions for businesses including 'software as a service (SaaS) run a whole lot of functions from human resources to accounting, to marketing,to socila media.

In this eBook, we have incorporated dozens of articles on how to leverage the benefit of cloud computing, what all to consider before migrating to cloud and the best practices of computing in the cloud.

The book includes a survey of 200+ organizations across seven industries having Rs 20 to 500 Cr turnover to understand their current cloud services usage, future preferences, and their perceptions about the vendors in this space.

The ebook also features experts from Symantec, Hitachi Data Systems, and Dell to get you their perspectives on the way forward with cloud computing in 2013.

Cloud computing can be used to help the social cause. We explained how can it be used to benefit the society at large.

When it comes to cloud adoption - the key question that comes to mind is 'security'. We threw light on this along with the pros and cons of cloud-based storage including cost-effectiveness and data portability of cloud storage.

The cloud computing success stories of Citrix desktop virtualization deployments, MS Hyper-V server virtualization, Saas based security implementations, and more are also featured.

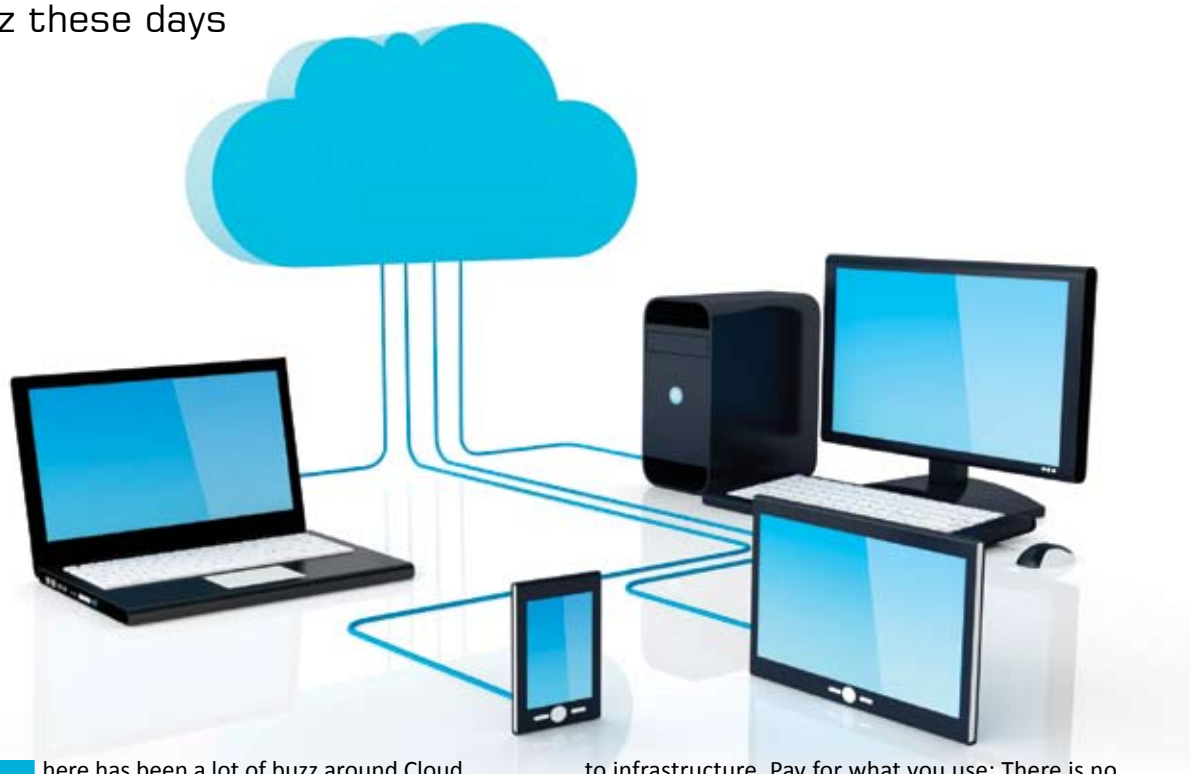
Lastly, we analyzed another key issue on cloud adoption.Which Cloud for SMEs - Public or Private?' Is a private cloud really viable for SMEs?

Enjoy reading...

Mastufa Ahmed
Sr Editor, PCQuest

Demystifying Cloud Computing

With so much noise and skepticism around Cloud computing, let's cut through this noise to demystify the term that creates a lot of buzz these days



There has been a lot of buzz around Cloud computing these days. Almost every IT vendor claims to have some kind of product or service for the Cloud. There are terms like like 'private cloud' and 'hybrid cloud' to add to the complexity. So, what is Cloud computing and what does it mean for businesses, governments and organizations of all sizes?

A simple way to explain cloud computing is that instead of buying, owning, and maintaining your own datacenters or servers, you buy the compute power and storage services from third party infrastructure providers and leave the management and maintenance of that infrastructure to them. You interact with those resources via the Internet, and you can grow and shrink capacity instantly without spending capital on them.

So it feels like all the computing resources are in a Cloud. For an offering to truly be 'Cloud Computing', it needs to have the following five characteristics:

No Capital Expenditure: You do not have to spend capital expenses on servers or data centers. You get to turn capital expense to variable expense, which is a huge advantage for companies that either do not have a lot of capital or those who simply do not want to tie capital to infrastructure. Pay for what you use: There is no upfront fee, no contract or commitment. You only pay for what you actually consume and have the flexibilities to choose the pricing model that best meets your business requirement.

True Elastic Capacity: You can scale both up and down, and not sit on unneeded, excess capacity. Also, a Cloud allows your applications and your business to seamlessly grow as quickly as you need. When you no longer need that capacity you can shed it just as quickly.

Fast Time to Market: You can move much more quickly with whatever projects you have. You can spin up large amounts of server capacity in minutes instead of waiting for days or weeks for capacity to be assigned to you. Focus on Your Core Competence: You can take scarce engineering resources and instead of applying them to running infrastructure which is undifferentiated for most companies, you can spend time on projects that add value to your customer offerings or areas that differentiate your business. If one or more of the above benefits do not exist, then it is not really Cloud computing. Let's cut through the noise and demystify a few of the common myths revolving around 'Cloud'. □

Cloud computing will drive much innovation; we'll see an explosion of new products, & businesses being created!

In the first ever AWS partner conference at Las Vegas, we got a chance to chat with the **CTO of Amazon —Werner Vogels**, on Cloud computing trends, big data, best practices for SMEs to shift to Cloud, and more

— Interviewed by Mastufa Ahmed

Tell us the evolution of Cloud Computing over the years —where do you see it in next few years?

I don't know; I don't have a crystal ball. Predicting the future is hard. If you look back, in 2006 when we launched the first service, did we anticipate that five years later we would have 6,000 people conference? If I look back up over the past years, one thing that we're definitely going to see is that businesses are going to buy less and less hardware. And there will continue to be data centers, because you know, companies will continue to own data centers. I just think there will be less of them.

That doesn't mean that in aggregate that there will be less computing being done. I actually like to believe that the efficiency of cloud computing will drive so much innovation in the industry, that we will see a true explosion of new products and new businesses being created purely because cloud computing enables that.

What hot trends do you see in cloud computing today?

One of the hot trends in IT and in computing is, data analytics, big data. And there's a close relationship between big data and cloud computing. In the past, business intelligence was really something beforehand you already knew what kinds of questions you wanted to ask, which kind of data that you want to collect in a constrained manner. Big data, however, is really driven by the fact that the companies actually want to have much better insight into their customers. I mean, who are my customers, really? What are they doing? How are they using my products?

And most of those questions are not easily asked using the traditional business intelligence approach. So for that, companies need to collect as much data as possible. This is really a situation where more is better. And essentially, there is a close relationship between cloud computing

which gives customers both, let's say, unlimited storage as well as the unlimited amount of compute with which they ask these questions to very large datasets.

So, I think data analytics is one of the big trends. One of the other trends is, of course, mobile. But mobile is actually well not mobile like in the past. Mobile in the past was where we all loaded our content on our device on our phone, and you would put everything on there and you watch it. These days, these devices are just a window into data and content that lives somewhere else.

And it lives in the cloud. Yeah, because I need to be able to use my iPad to read a book, and I will put it away and I ll continue to read on my Kindle. So, not only the content itself, but also data from the applications will live somewhere else.

There's quite a few partners for example in the mobility space platforms like Parse, who enables tens of thousands of different apps to be really quickly built while storing that data in the cloud and basically, becoming device independent. They're a platform; they're one of our partners. We have an SDK for mobile development. We also do work with a lot mobile developers. And recently, we added a mapping API to that, so customers that want to use maps in their apps can now make use of the Amazon API to insert maps into the mobile apps, and also have overlays on that and things like that.

Security, reliability, and privacy are the three key considerations for businesses to embrace cloud computing. What is your take on this considering that Amazon has had outages in past?

That's not the case. In this case, we had a failure where the service disruption happened in a single availability zone. We have 25 availability zones. So, we had a service disruption in one of them. And we give customers multiple availability zones so that customers can build their applications such that they can survive any kind of outages. It is unacceptable for us, of course, I mean; we will not rest until we're indistinguishable from perfect. But, you know, we give customers these availability zones just such that they build really highly available applications, and many, many of our customers, even though there was a service disruption in one of the availability zones, actually they were able to survive the disruption uninterrupted. Companies like Netflix, for example was completely uninterrupted by these kinds of disruptions.

Netflix for example, Amazon.com, and many companies that were operating at that availability zone were still highly available when the service disruption happened. So, the big shift is, in the past, you know, in the old world of IT, companies often could only afford themselves one data center. And if an outage were to happen in that data center, or if a disruption would happen in that data center, they would be down. Its out.

Now, just with the single push of a button, customers have accesses — you know, sometimes three or four different availabilities zones within the same region.

On the other hand, security security will be forever our number one priority. So, often, a CIO will ask me, what about security? I'll go and sit with the CIO and we'll go through the security procedures that they have for their own systems and their own data centers, and then look at how does that map onto the security tools that we give them in the cloud. And actually, every time, at the end of that conversation, the CIO will come to the realization that the security tools that we give them in the cloud are more extensive than what they are able to enjoy in their own data centers.

When it comes to adoption of cloud computing by enterprises, they often end up taking some missteps!

I think that there's one thinking that I see, that sort of hampers companies a little bit when they move to the cloud, and that is that they truly consider the cloud to be just another data center. And the way that they use the applications, and that they use the services is exactly the way that they do it in their own data center.

But, you know, that means that if you have ten servers running or ten Amazon Elastic Compute Cloud instances running, they will keep them running all the time, because that's how they do it in their own data center. In AWS case, you can switch those 10 Amazon EC2 instances off if you're not using them. And so, just a change of thinking that this is not the same physical world as that they were used to, is something I think that IT organizations need to get used to.

How do you see big data? An opportunity or a challenge?

I think first of all, the biggest challenges in big data are still around the analytic tools. If you look at the big data from an infrastructure point of view, it is basically a pipeline of five steps— it's how do you collect the data? How do you store the data? How do you organize it? How do you analyze it? And how do you share it? Now, in each of those steps, I like to believe that within our cloud business we've given —we give people really good tools in all of them, and we can go into detail if that s what you want to. But, often, the analytics piece is still very much in progress. Not only from the tools — the tools in Amazon that we give, Amazon EMR which is Hadoopon the Amazon EC2 environment; we give you Amazon Redshift which we have just announced. □

App Stores, Hybrid Cloud Computing, and Big Data: 3 Trends to Watch in 2013

In this article, we talk about the emerging market of enterprise app stores and also present views of few of the key players in the field of cloud computing and big data

— Hiren Mehta

If last year was all about mobile devices, app stores, and millions of applications, 2013 is going to be about how organizations should leverage this potential new platform through BYOD and app stores. If last year was abuzz with cloud computing, 2013 will focus more toward how it will help organizations create a hybrid IT infrastructure. If last year was all about dealing with data, next year will see more inroads being made into how Big Data should be used strategically by organizations. We bring you advice by experts from renowned companies on some of these trends and how they'll impact your organization in 2013.

1. Enterprise App Stores

This is seen to be a key change in the way business apps are obtained and deployed on mobile devices, and something that will help organizations embrace BYOD. Leading mobile app vendors already have programs which enable organizations to create private apps that can be deployed to their employee's systems and devices without requiring those apps to be first published to the app stores. Apple for instance, has an enterprise program for its iOS platform. Similarly, Microsoft has already restricted Windows RT devices to obtain applications only from the Windows Store. But, organizations can still install line-of-business apps by sideloading. At the recently held Microsoft TechDays across the country, Microsoft talked about how sideloading LOB apps increases the possibilities of productivity in Windows RT.

2. Hybrid IT and Cloud Computing

We spoke to experts from Symantec, Hitachi Data Systems, and Dell to find out their perspectives on the way forward with cloud computing in the new year and its impact on organizations. Presented here are their views.

Administrative and managerial implications of cloud computing on your IT department

Anand Naik: Lately, it seems as if every organization – from large enterprises to SMBs – has its head in the clouds. IT demands efficiency, business units demand flexibility, and end users demand convenience. Add growing budget pressures into the mix, and it's easy to understand why people are turning toward cloud computing. While evaluating the cloud, one should bear in mind that this model brings efficiency, ease and cost-effectiveness for IT, but also the scalability and productivity benefits that the business organization demands. Therefore, while cloud computing is an IT mandate, it is also driven by business needs and impacts the risk teams. This means that IT needs to work across departments to ensure that the promised gains are achieved.

Further, IT needs to understand that cloud changes the paradigm for securing and managing information. Some areas for consideration include:

1. **Misaligned expectations:** Cloud is fuzzy and poorly defined. Cloud projects are even less well defined. Many gaps exist across organizations and in the market, leading to unrealistic expectations and hence the "failure" of cloud projects.
2. **Unprepared IT Organizations:** Many IT organizations have a siloed approach to cloud, with cloud initiatives being separate from regular IT operations. While cloud is different in many ways, in an ideal world the management of cloud should be included within existing policies, tools etc.
3. **Compliance:** For many companies that are publicly traded or regulated, compliance plays a major role in their approach to cloud. The ability to completely prove compliance to regulations with compelling audit and reporting often holds back organizations from moving to the cloud.

Anand Naik, MD-Sales, India & SAARC, Symantec

Yogesh Sawant, Director, Partner Sales and Field Alliance Organization, Hitachi Data Systems

Amit Luthra, National Manager, Storage Solutions Marketing, Dell

Amit Bishnoi, VP-Apps Business, AGC Networks

4. **Data Access Control:** Finally, 'security' is often the top cloud concern cited by IT. When you dig deeper, it is usually concerns about who will have access to my data, and what assurances can be implemented to make sure my information is kept out of the hands of the wrong people.

Yogesh Sawant: We at Hitachi have seen that a lot of times, in case of SMEs who have their IT infrastructure on their own premises, most of the IT department's time is spent on administrative tasks and management of that infrastructure, even setting up the infrastructure in the first place. Mundane activities of management, scalability, surveillance, are increasingly being outsourced. Once these are moved to the cloud, IT departments can focus on more important tasks. A lot of efforts of the IT department go into storage management for instance. We have observed that 65% of storage costs are of an administrative nature.

Amit Luthra: Enterprises and SMEs in particular are undergoing a massive shift in their IT infrastructure from setting up cloud infrastructure to security of applications, network etc. CTOs, CIOs and IT pros have to capitalize on this sea of change and fight to stay relevant in new cloud environments.

Larger organizations have the technical expertise and resources to better utilize IT infrastructure or adapt to new technologies as compared to smaller businesses. When it comes to utilizing modern computing technology in order to get a leg up in competition; SMEs usually fall short as they often lack the platform infrastructure, technical expertise and necessary financial resources. But with Cloud Computing and Services SMEs can use and pay for their computing requirements as and when the need arises. Additionally, the SMEs are also able to scale up or down the Cloud services as needed.

There are certain things that IT managers need to be aware of when it comes to cloud adoption. Despite its advantages there are a few potential issues that might negatively affect adoption of this technology and services. Firstly, adequate planning to decide the migration path to Cloud Computing and Services is highly critical. Not all applications are suitable for the Cloud. In particular, it is not economical to adopt some legacy systems for migration

to the Cloud. Secondly, SMEs need to be aware of data security, compliance, and reliability if they are planning to migrate some applications to the Cloud. Thirdly, managers need to be aware of the so called "Cloud latency" that creates system performance delay due to the long distance and the fact that large data files and services may need to jump through a few network routers before they get to their destination.

Controlling how applications and services in the cloud are consumed by the workforce

Anand Naik: While the IT organization is often tasked with a move to the cloud, concerns around data security, privacy, regulatory compliance and information governance do exist. However, cloud does not translate into a loss of control. In fact, IT organizations now have the option of shifting risk to a cloud service provider, who is bound by strict service level agreements. In fact, this can also avoid over provisioning and under provisioning of resources, and eliminate waste and cost overruns. Further, a large provider can offer bigger, redundant resources for HA than an internal IT department could provide on its own. Enterprises can also hold their cloud vendor to higher Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) than they could provide with their current internal IT operations.

The cloud model requires secure interfaces between users and endpoints (the outermost devices on a network); between endpoints and backend infrastructure; and between services. Data confidentiality, integrity, and availability issues must be identified and addressed. Data access and availability requirements (e.g. 99.99% availability or higher) must be formalized into concise statements. Organizations need to ensure that their privacy and security compliance needs are met, including secure access when connecting to cloud services—such as authentication/authorization, endpoint security validation, and security in the data center. In short, there are four aspects that IT should bear in mind to retain control: policy definition and enforcement, identity protection, authentication and management, information protection, and infrastructure security and management to ensure high availability.

Yogesh Sawant: SLAs will govern the service need. I don't see the IT department having any need to control the applications and services explicitly. The IT department should spend more time in governance, application feasibility and increasing security.

Amit Luthra: The movement to the cloud has caused internal IT staff to refocus their efforts to application management. They are forced to become more involved in the process of selecting which applications to host in the cloud, as well as keeping a close eye on how those applications are supported and integrated across the firm's environment. In many cases, they end up managing their relationship with the cloud service provider much like they do with ISPs [Internet service providers].

Role of IT department as a 'broker' between the workforce and cloud solutions' provider

Anand Naik: The workforce does not always understand – or need to understand – the IT model of their employer. Today they demand secure, anytime-anywhere access to information and application, while the business looks at cloud as a means of improving scalability, flexibility, cost-efficiencies, and productivity. The IT department needs to understand and balance these requirements while ensuring that information is secure and well-managed. It would be wrong to look at IT purely as a "broker"; rather the IT team is an enabler of the above benefits. Instead of becoming overwhelmed by the new demands that strategic trends such as cloud, virtualization and mobility pose, IT needs to adapt to these changes such that they can make employees' use of these technologies a reality based on IT's terms (including information protection strategies that include policies, DLP, mobile device management and mobile application management), not the other way around. To achieve a safe clouds environment, IT needs to enforce rigorous cloud strategies around the protection of policy, information, people and infrastructures.

The role of IT in the cloud landscape has multiple facets: ensuring that SLAs around data security, privacy and availability are met, educating the workforce about the right processes and behaviors, defining and enforcing policies, and so on. But among all these, IT must not lose sight of the most important business asset: information. Today, organizations need stronger information governance for managing corporate information and enabling confidence in the cloud. The success of cloud computing hinges on the trust and confidence that can only occur when the information security teams and IT vendors have better visibility into the security posture and operations of cloud initiatives.

Yogesh Sawant: I do not see them as a broker. For most organizations, IT is not the business itself, the business is the particular vertical where they are focused. I see the role of the IT department as providing more value to the organization by bringing down costs substantially.

Amit Luthra: The cloud means IT roles will shift from hands-on work with hardware and installations to resource management, integration, capacity planning and technical architecture. As a result, IT roles will evolve from "systems admins" and "systems architects" to "cloud admins" and "cloud architects." This change creates new opportunities for IT professionals to learn new skills and grow within their organizations.

STRATEGIC BIG DATA

We speak to experts from AGC Networks and Hitachi Data Systems on the relevance of Big Data for SMEs and whether they should deploy it in 2013. Here's what they had to say.

1. Should SMEs deploy Big Data solutions per individual project or as an integral part of their entire information architecture?

Amit Bishnoi: Looking at IT adoption by SMEs in India, Big Data is a good-to-have technology and not must-have. Even SMEs would agree that there is potential growth in aligning the unstructured data with business's transactional data. But does Indian SME have technology inclination and acumen to manage and implement Big Data, that is a question.

With most SMEs moving from voice to nascent stage of data and applications, I think it is still too early for us to believe that Indian SMEs will move the Big Data way. It is anyway yet to be accepted by largest of the enterprises, not just in India but across the globe. The only good sign is, evolvement of low cost and simplified technologies. This will make the adoption sooner than we know. Another factor which will complement the acceptance is availability of project based usage and that too on an outsourced model can make it an integral part of SMEs IT plan.

Yogesh Sawant: SMEs are not looking at the big picture of the overly-hyped Big Data. Big Data comes into the picture when human-driven data comes in, such as from social media. This is different from transaction-processing data which is very much structured. Human-driven data is usually unstructured. There is also machine-driven data such as those from biometrics products, video surveillance equipment, etc. When you use analytics with these sources of data, you transform the huge quantity of data into information. Individual projects drive Big Data.

2. Which are the specialized file systems available for use today that are optimized for Big Data? What does this mean for developers who are implementing Big Data solutions?

Amit Bishnoi: With terabytes of unstructured information be accessed and analyzed we definitely cannot do with normal storage and processing applications. This information further needs to get integrated. The inbuilt structured database generated within enterprise's premised and on top of it needs to have a backup too. With all these in picture no enterprise can afford to have a slow processing. Hence today enterprises prefer to have a filing system which is in parallel accessed by business application and data crunching is done at multiple nodes. This also cannot be an expensive proposition so enterprises are looking at virtual option.

The first step would include that an enterprise will move the virtual / open source way or undertake a storage, network and application upgrade. Then enterprise would need to define various parameters for data to flow, get crunched and give output. This means a lot of overhauling on architecture aligned with business' requirement from data needs to be defined. In between somewhere you would need to allocate resources for experimentation stage where you can review and observe the outputs. And if need be, revise the whole process.

To manage all these there are options available from leading technology companies like IBM, Oracle, etc. who have built their own specialized filing systems with great customizable features.

Yogesh Sawant: You will hear other Big Data solutions' providers stating that they make use of Hadoop. We use distributed object store instead and have put it into our infrastructure.

3. How is the capex and opex of an SME affected if it chooses to deploy Big Data on a global scale rather than specific to a project?

Amit Bishnoi: Cost definitely is a critical factor for considering adoption of Big Data. That's why I feel Big Data will see adoption in SMEs only with an Opex, outsourced model. The solution would also need to be offered as a Managed Service which promises and delivers value in short term and larger value in long term.

This highlights the importance of a service provider to understand SME's business model and offer cost effective, flexible solutions which are built specifically for client's industry and delivers quick results.

Yogesh Sawant: Big Data is focused on the top-line revenue, not a part of the entire information architecture but of a particular project. An SMB will not have the bandwidth to use Big Data on a global scale. □

Cloud Computing & Rise of Virtual Organizations

Cloud computing has helped organizations shift their focus back from non-core to core business activities. But can this business model sustain them in the long run?

— Himanshu Joshi, Faculty, International Management Institute, Delhi & Pallavi Dhyani, Business Analyst, NIIT, Delhi

With the advent and a subsequent sprawl of the Internet into, possibly, every facet of life, there has been a radical shift in the way organizations do business today. The traditional organizations that turned digital some years back are now, bridging the physical barriers and slowly turning into virtual organizations. The Internet has played the role of a catalyst in bringing about this transformation and with the technological sophistication experienced over the years, has helped in blooming the virtual world. Then there have been, of course, the changing needs of the organizations, their employees, customers, investors and regulators that have dictated the change to bring about the order of this new world.

An offspring of the Internet, the Cloud, has enabled the established organizations to shift their focus from the maintenance of their infrastructure back to managing their core business. Smaller organizations too have been released from the constraint of investing in a sound infrastructure before their business can kick start. The Cloud has enabled companies to expand their reach into unknown territories; reaching and supporting a remote customer in real-time was never as achievable before. For competitive edge, through the Cloud, organizations are able to link and integrate, unifying their core competencies to function as a single organization, commonly known as the Virtual Organization. The rules of the game have changed.

Rise of the global Cloud champions

The concept of application hosting has been in prevalence for as long as three decades. Of course, earlier the applications were put up on the Web for a subsequent download, local installation and use. Going a step further from Cloud computing and the idea of hosting a Cloud for application sharing and distribution, a number of companies today have opened their Cloud infrastructure to other companies for development and deployment and thus creating what is called as PaaS. Google can be a great example to quote here since it not only offers its set of commoditized services over its Cloud (SaaS); it has also opened up its Cloud infrastructure to host third party applications on top of their own. Another good example can be Microsoft which has been slowly charting its way to Cloud computing over the last several years, releasing SaaS products like Windows Live and Office Live and most recently, Office 365 – an online version of their desktop products.

Apart from Google and Microsoft, Amazon, Yahoo, and Symantec too have made significant investments in Cloud computing services. Another similar undertaking is Adobe Photoshop Express (to edit and manage photos online) and online services like creating PDF files, converting PDF to Word, online form, sending large files and hosting online meetings. Some popular examples of business models on Cloud include ebay.com and salesforce.com. The industry sectors where Cloud computing is extensively being used are financial institutions, insurance, telecommunication, manufacturing, technology, education and government.

Adoption of Cloud computing in India

Davis Partners, a global leader in Cloud infrastructure and hosted IT solution for enterprise and Bharati Airtel, a leading global telecommunications company joined hands to launch a major Cloud computing initiative in India. This initiative involves Airtel providing World-class data center facilities, unsurpassed bandwidth capacity along with World-class network connectivity and Davis providing its technical expertise to offer best-in-class Cloud services.

Tata Communications, one of India's leading enterprise telecom service company has been investing heavily in IaaS. Last year it launched InstaCompute, which offers enterprises the choice of being able to buy basic computing services and pay for it depending on usage. The company's core infrastructure is provided by Cloud.com, the leader in Open Source Cloud computing software.

Adoption of Cloud computing among schools, colleges and universities is also gaining momentum. In a quest to offer high quality education content and instruction to the

masses, NIIT Limited, a leading Global Talent Development Corporation launched NIIT Cloud Campus which allowed students to access educational services using a net book or mobile device. In 2010, NIIT and MS launched cutting edge training programs on MS Azure platform. Among other significant innovations in the Cloud computing domain is SAP which has introduced end to end on-demand integrated business software - Business ByDesign. A SaaS offering for mid-size enterprises, ByD provides users a platform to manage all their critical applications without the burden of investing in a large scale infrastructure.

Cloud service delivery: challenges and caveats

The Cloud computing market is getting more and more cluttered with Cloud providers, each one trying to differentiate itself from others. The price war and price undercutting could threaten the long term sustainability of this business model. Owing to the shared and centralized infrastructure offered by the Cloud, the customer expects lower service costs vis-à-vis other traditional service delivery models. This puts a constant pressure on the Cloud service providers to strike a right balance between devising an optimum pricing strategy (to make profits) and deliverables such as guaranteed levels of performance, uptime and responsiveness (at reduced costs) to retain a customer.

Consumers face the challenge to evaluate Cloud service offering by numerous providers. As competition grows fierce, chances of over commitment and underperformance by service providers are high. Customers need to separate the rice from the chaff while evaluating the claims made by the service provider in terms of the service offered versus service delivered. Inexperienced customers may get overwhelmed by the complexity of determining the right price value proposition. Also, in the Cloud computing space, meaningful SLAs may also be eyewash. While service providers may claim a near 100% availability of their Cloud service, more often than not this may just a tall, unverifiable claim. There may also be grave support issues, if the Cloud service provider does not offer a dedicated and on-demand technical support.

This transition from traditional computing to Cloud based delivery will happen gradually. Switching consumers from customized apps & propriety databases would require efforts from users as well as Cloud vendors. Vendors will have to provide continuous handholding to inexperienced customers to ensure smooth transition.

Emerging business models and road ahead

The last couple of years have witnessed a number of business models evolving around Cloud computing. To address the existing challenges and respond to customer anxieties concerning predicting Cloud costs, a number of tools have come up to help businesses get an estimation on the real cost of their Cloud usage. A latest offering is Uptime software which has introduced an IT resource monitoring application offering services like virtualization, dashboard, graphic user interface and 24 by 7 support. This proactive monitoring tool provides utilization trends of critical enterprise applications and also identifies any potential problems like outages.

To optimize unused Cloud capacity and infrastructure inventory SpotCloud, an online marketplace recently launched SpotCloud Marketplace Platform, offering buyers and sellers a platform to transact online Cloud capacity. This first-of-its-kind initiative offers a win-win proposition to buyers (bid and select from thousands of sellers) and sellers (incremental revenues from excess computing capacity).

In India, with the deployment of 3rd generation Internet technologies, the adoption rate for Cloud computing among individuals and enterprises is bound to increase.

Despite the benefits associated with Cloud computing services, consumers have shown their share of concern related to data security and privacy issues. Other concerns include data ownership and degree of control which makes them wary before signing up for such services. In an Ernst & Young 2010 survey involving 50 Chief Information officers (CIOs) from small and medium business enterprises in India, an overwhelming 72% of the respondents cited potential data privacy and security issues as extremely significant concerns while adopting Cloud computing.

Cloud computing could also pose potential conflict of interest among Cloud vendor and enterprise customers whose products or services are complementary or cater to similar kind of customer needs. For example, Google and Salesforce have joined hands to integrate Google Apps account to Salesforce CRM. It allows users to integrate Gmail, Google Calendar, Google Talk, Google Docs, and Google Sites with Salesforce CRM. Potential conflict could occur in case Google decides to offer its own CRM application.

It is probably high time that policies and guidelines are made to report benchmark rates for Cloud services which could be a reference point for ensuring price and value parity across providers. This would set the right tone for an informed decision making by the customer. This would also bring about transparency in communicating the true cost of service delivery to the customer as well as, ensuring long term commitments, economic viability and sustainability of the Cloud computing model. □

Cloud computing has the potential to speed up various projects of the Govt

— Anil Chopra

At a conference I attended recently on Cloud computing, an interesting debate emerged on how can Cloud computing be used to help the social cause. How can it be used to benefit the society at large? When it comes to society and social upliftment, the first thing that comes to my mind are the various e-governance initiatives that the govt has been taking over the past so many years.

Lots of extremely good e-governance projects have been implemented, some of which have even won the PCQuest Best IT Implementation Award. Many of these projects were even considered for replication by other states. While this is a good thing, it takes ages to execute, not only due to the bureaucratic hurdles and red tape, but also because they have very large scale. The IT requirements of such projects are very significant. So while the project planning time could be cut down in replicating such projects, the IT deployment itself can take ages. This is where cloud computing can really help.

If a project by a state Govt can be implemented in a private cloud, then it could easily be offered to other states. The Govt of J&K has already set a fine example of this, by using computing services from MP Govt's state data center to offer citizen services. This saved the J&K Govt considerable cost and time to roll out the services for its citizens.

Now, there are already plans to setup state data centers for all states. While this is a good initiative, it would be much more cost effective if the front-runner states who've already set up their own data centers could share their IT infrastructure to host e-gov projects of other states. The benefits of this could be immense.

For one, e-gov projects could be rolled out much faster. Two, state Govts that are yet to setup their own data centers would save immense costs in setting up new data centers, which would then consume lots of power in an already power deficient nation. Three, the states that host e-gov projects of other states can earn by charging others on a pay-per-use basis.

If a project by a state Govt can be implemented in a private cloud, then it could easily be offered to other states. The Govt of J&K has already set a fine example of this, by using computing services from MP Govt's state data center to offer citizen services

Four, a successful and proven e-gov project deployed by one state could be adopted by other states quickly and easily. Here, the proverbial wheel won't have to be re-invented by the other states! Take the various state police departments for instance. Many of them are considering to maintain criminal records centrally, and provide their police force access to these records over smartphones. If this system could be centralized in a cloud computing environment, wherein the criminal case records of all states are maintained, then tracking criminals would become much easier, even if a criminal moves off to another state.

Cloud computing therefore has the potential to speed up various projects of the Govt. The technology can save the Govt thousands of crores, which are usually lost due to cost over-runs caused by project delays! □

How Secure is the Cloud?

One of the primary reasons why users are migrating to cloud-based storage as opposed to local storage is the cost-effectiveness, backups and data portability. However, is the cloud really secure? Read on

— Sufyan bin Uzayr, Freelance Writer, Graphic Artist, Photographer, www.sufyan.co.nr

Of late, cloud computing has taken the IT world by a storm. More and more businesses are migrating to the cloud instead of local storage. Not only is cloud-based storage cheaper and requires lesser maintenance, it also fosters greater collaboration and data sharing capabilities.

Both Google and Amazon are now offering attractive cloud services for businesses and organizations. The service is extremely reliable – your data is stored across multiple servers and can be seamlessly shared among all your employees and clients.

At this junction, with cloud computing on the rise, questions are being raised about security issues. For a start, any data stored on an intranet/internet, no matter how big or small, can be subject to malicious hackers. However, generally speaking, cloud based storage has often been under the attack of tech critics claiming it to be an insecure medium for storage of data. Thus, while more and more organizations are shifting to cloud-based storage for managing their data, there are talks about Google suffering outages (see http://goo.gl/O7YxX) thereby proving the inability of the cloud to be a reliable medium for business usage.

Yes, Google and certain other cloud service providers have had their share of outages – however, this does not essentially make them less secure. Cloud outages are in no way more serious than traditional outages – the data remains secure, only the server goes offline temporarily.

On the contrary, owing to such risks and security issues, most cloud based service providers take security as an important factor. Apart from data redundancy, providers such as Amazon also offer data encryption for enhanced security.

Both Google and Amazon are now offering attractive cloud services for businesses and organizations. The service is extremely reliable – your data is stored across multiple servers and can be seamlessly shared among all your employees and clients

However, this is where as the end user, your decision comes into play. Of course, if you are opting for the cloud, chances are you're doing it to minimize the cost of local storage – in other words, it does not make sense to use local storage for backups of your cloud data. In such a scenario, before you opt for a cloud-based storage provider, look for the backup offerings – chances are, they will surely provide nightly backups, in which your data is backed up everyday. But a wiser choice will be to opt for incremental backup, wherein your data is backed up after each transaction. Obviously, incremental backup provides to-the-minute backup and is more reliable.

Truth be told, with both economic feasibility and data sharing to its merit, cloud computing hardly has an alternative – much like public transport and Railways, in spite of the hiccups, cloud computing is here to stay. In this case, usage of cloud computing cannot be discarded on account of security myths. Trusting a cloud based service provider to secure your data is much the same way as trusting a postal or courier company with your letters – we often place our important letters and parcels in their hands, don't we? A mere isolated event or mishap with the courier service provider cannot essentially be generalized as the overall measure of service offered by that provider.

It goes without saying that the future of data storage is cloud storage. Most providers offer a secure product with encryption, redundancy and backups, and with cloud computing ever on the rise, the security measures adopted to keep the cloud secure will only develop in years to come. □

PROJECT HEAD

Gaurang Doshi
Associate Vice President

PROJECT SPECS

Industry:
Communications, Power, Steel, BPO

Internal team Size: 4

Implementation Partner:
Citrix & VMware

Deployment Location:
Mumbai (Mahalaxmi & BKC)

Tech Used: Citrix XenDesktop

Target Customers: End users

Best IT Round Cleared: Stage II

Essar Group

Citrix Desktop Virtualization

The group deployed desktop virtualization across its offices in Mumbai and saved an OPEX of 10 crores per annum

The Problem: Essar group is a $20-billion diversified conglomerate and has a presence in 20+ countries across the world. They felt the need for consolidating all user's systems and applications in one single place making the datacenter team's task simpler and easier.

The Solution: Essar is the first organization in India to sign Unlimited Licensing agreement with Citrix for organization wide rollout of desktop virtualization. They have implemented desktop virtualization in Mumbai locations of Mahalaxmi and BKC office. Plus, Riverbed WAN optimization solution has been implemented across the location for optimization of WAN bandwidth and ensuring impact of desktop virtualization. To ensure latency free access of the virtual desktops across the LAN, they have upgraded to the Backend Network core in the datacenter to a 10 GB LAN. Load balancing for the access of the virtual desktop has been done efficiently by Citrix Netscaler equipment that is deployed in Essar environment.

The Result: 5K users from Mumbai location has been successfully migrated to desktop virtualization who can now access their desktop profiles from anywhere/any device on the go. Saving on OPEX is around Rs 10 Crores per annum.

Essar Group

MS Windows Azure Cloud Implementation

The company deployed 20 business applications on the Microsoft Azure public Cloud environment and achieved 70% net savings per month

PROJECT HEAD

Dharmesh Rathod
Project Manager –Enterprise Architecture

PROJECT SPECS

Industry: Communications, Power, Steel, BPO

Internal team Size: 3

Implementation Partner:
MindTree, Microsoft, In-House Team

Deployment Location:
All Essar Locations across the Globe

Tech Used:
Windows Azure, Microsoft SQL Azure, Microsoft .Net, Active Directory

Target Customers: Users across the Essar Group

Best IT Round Cleared: Stage II

The Problem: The Essar Group is a multinational conglomerate and a leading player in the sectors of steel, oil and gas, power, communications and BPO, shipping, ports and logistics, projects, and minerals. The group began its operations in 1969 as a construction company but quickly moved to capitalize on every business opportunity. Essar wanted to develop a Cloud version of some of its applications to increase their appeal. Specifically, it wanted to reduce the capital investment required to run these apps on-premises and at the same time, it wanted to reduce the level of IT maintenance required to manage the apps.

The Solution: Microsoft Azure Public Cloud solution has been identified based on market survey. They have hosted four critical applications in Microsoft Azure Public Cloud. Twenty applications are in testing phase presently for immediate deployment on the Azure platform.

The Result: The company achieved 70% net savings/month by deploying applications on Azure. They have significantly reduced IT management costs and complexity, reduced no of servers & associated TCO, reduced carbon footprint, improved performance and of course the on demand scalability and agile Infrastructure.

Essar Group

Microsoft Hyper-V-Based Server Virtualization

The company went for server virtualization using Microsoft Hyper-V technology which saved them Rs 1.60 Cr annually

The Problem: Going by a rule of thumb, three-year cost of ownership of a server is at least equal to its original purchase cost. This means a business pays 100% of the cost of purchasing and owning servers, but gets only up to 15% of the return on investment. Essar wanted an environment that provide a high level of flexibility to meet its needs, while at the same time is easy to manage and cost-effective to run

The Solution: They deployed Microsoft Windows Server 2008 OS with Hyper-V technology as the foundation. Essar turned to Hyper-V to achieve higher levels of system stability and availability, while reducing floor space requirements. They have already migrated 150 servers in virtual environment while another 75 servers are going to be migrated in Phase III.

The Result: Number of server freed up is 150. Number of rack freed up is 20 and the energy saving is 71%. The percentage of cost benefit ratio is 43.95. Post-Implementation, the company estimated Rs 1.60 Cr of cost saving annually across groups. Five years down the line the savings would mount to Rs 8 crores.

PROJECT HEAD

Gaurang Doshi
Associate Vice President

PROJECT SPECS

Industry:
Manufacturing

Implementation Partner:
Microland

Deployment Location:
Gujarat, Mumbai

Best IT Round Cleared: Stage I

Mahindra & Mahindra Financial Services

MF-Me-Alam

They company designed and implemented an application to better serve its rural and urban customers, which enabled them disburse loans in just 2 hours

The Problem: Mahindra and Mahindra Financial Services, through a vast network of branches, provide personalized finance for the widest range of utility vehicles, tractors and cars, focusing on the rural and semi-urban sector. They had made around 20 million rural individuals across all age group to flourish and achieve their dream to become a successful entrepreneur. They needed a faster loan processing solution to serve their customers better.

The Solution: The company designed, architect and implemented Mf-Me-Alam (Universal Enterprise Apps), one-of-its-kind 360 degree dynamic application for its rural as well as urban customer making their dream come true to serve them at their doorstep in their own multilingual languages. This enabled them make all manual process of business capturing, collection, lead management and issuance of delivery order within 2hrs.

The Result: Post-implementation, they achieved process efficiency making entire business capturing, collection, lead, document management on field right at customer door's step. All filed process is tightly coupled with well-integrated dynamic universal business application called EMLAP (Enquiry Management and Loan Application Processing) improving over internal process efficiency of the organization.

PROJECT HEAD

Suresh A Shamugam
Head IT

PROJECT SPECS

Industry: Finance

Internal Team Size: 48

Implementation Partner: Visiontek, Clancour

Deployment Location:
648+ Branches Across India

Tech Used:
C, C++ , J2ME , Android & SQLite Database, Oracle, MS SQL, Oracle Weblogic, .NET

Target Customers:
Customers, Internal Employees & Management

Best IT Round Cleared: Stage II

Infosys

Infosys Cloudvolution

'Infosys Cloudvolution' —the Cloud initiative of Infosys helped them achieve over 30% Blade consolidation, reduction in cycle time for resource allocation from 2 days to 30 mins

PROJECT HEAD

Muralikrishna K
Sr VP & Head -Computers & Communication Division

PROJECT SPECS

Industry:
IT/ITes

Implementation Partner:
In-House

Deployment Location:
Bangalore, Chennai, Pune, Hyderabad, Australia and US

Best IT Round Cleared: Stage I

The Problem: Infosys internal network spans globally with 150,000+ nodes, which support thousands of IT projects spread across diverse industries, internal & external hosting needs and multitude of computing platforms. With such a complex and varied requirements, efficiently allocating & de-allocating IT resources to ensure optimal utilization is critical. Also, stand-alone desktops & servers allocated to projects lead to additional power & cooling demands.

The Solution: The Global IT team of Infosys, embarked upon 'Infosys Cloudvolution' to connect IT capabilities with business aspirations. MyCloud and CollaCloud are based on Win 2008 Hyper-V. A custom portal, tightly integrated with in-house asset management and project management systems, was built ground up as a wrapper on top of Microsoft System Center Virtual Machine Manager Portal for automated provisioning of virtual machines. Portal enables role based access and is used by administrators as well as end users to perform their tasks. Entire virtual machine life-cycle is fully automated.

The Result: Reduction in cycle time for resource allocation -from 2 days to less than 30 minutes, reduction in OS build time to less than 30 min from 2-3 hours of manual installation time by using agile templates, faster build/re-build time of project environment, optimum utilization of computing resources with efficient asset tracking and compliance are the major benefits.

US Technology International

SaaS Based Email Security Services

Email flow was decreased by 40% using SaaS based email security service, which in turn enhanced productivity and saved money

The Problem: At UST Global, the focus is to provide world class business solutions to a wide range of businesses using cutting edge IT components and this internal project was in line with their internal IT initiative to make sure their security posture is best in class and services. There were multiple issues in current system like threats and downtime. Non-business related emails were eating away bandwidth and there was pressing need for effective filtering at source. The organization was not getting benefits as per ROI and it was getting difficult to manage on premise solution with spams, virus threats, scalability and utilization concerns and no granular control for IT team.

The Solution: Deployment of Email Security Services to replace on premises appliance based solution was done. Email services across organization with 10K users was provided without any downtime and 100 percent email delivery was ensured without any delay. Entire migration took just 48 hours, with this time all services with configurations were rolled out for end users.

The Result: UST Global IT team noticed 40% email flow decreased in numbers as compare to old setup. Unwanted emails were getting stopped in the cloud and this gave huge performance upgradation and bandwidth optimization. Spam rate and threats to system were minimized which resulted in better end user experience.

PROJECT HEAD

Basil Solomon
Infrastructure Architect

PROJECT SPECS

Industry: IT

Internal Team Size: 3

Implementation Partner: In House

Deployment Location:
Trivandrum, India - Single Location, Centralized Setup

Tech Used:
Symantec - Messagelabs cloud Email gateway

Target Customer: Employees

Best IT Round Cleared: Stage II

5 Reasons SMEs Should Adopt Cloud Computing

— Anil Chopra

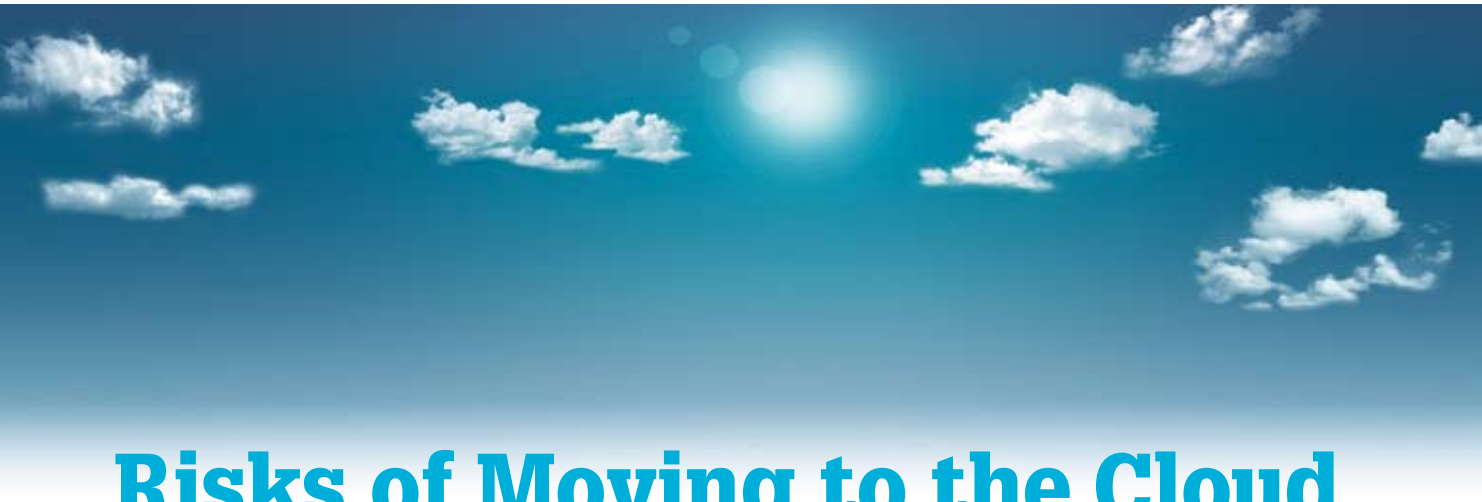
With growing cloud adoption, it's important to understand why SMEs should consider it. Here are five reasons to do so, in no particular order of priority.

1. Anytime, anywhere access from any device: A cloud based solution is accessible from anywhere and nowadays, from any device. This can be a boon for your sales team, as they get flexibility to work from anywhere, and don't necessarily have to come back to office to lodge their daily calls. In one of the IT projects we received, the company took back laptops from its sales force, and gave them smartphones loaded with an order processing app, which was linked to a cloud based application for real-time data processing.

2. Low infrastructure management and manpower costs: If you're using a public cloud based service, you don't need to setup a dedicated IT infrastructure in your own premises for it, thereby saving hardware and licensing costs. Plus, you need lesser IT staff to manage your IT setup, at least for routine tasks like patches and updates. Those are the service provider's headache now. You just need staff who can manage the app and coordinate with the service provider for its customization, maintenance, etc.
3. DR out of the box: If you have your apps running locally, then you have to plan a disaster recovery strategy for it. But when it's on the cloud, the uptime of the hardware is the service provider's job.
4. Greater scalability: As your application is hosted on someone else's infrastructure, it gives you the flexibility to purchase as much compute power as required. So if you're expecting a spurt of traffic on your website, purchase additional processing power to manage the load, and reduce it after the job is over.
5. Try before you buy: There are lots of cloud based solutions to choose from. Most of them offer free trials, while others are completely free.

Lastly, it's important that you compare multiple cloud service providers against these parameters before choosing one. □

A cloud based solution is accessible from anywhere and nowadays, from any device. This can be a boon for your sales team, as they get flexibility to work from anywhere, and don't necessarily have to come back to office to lodge their daily calls



Risks of Moving to the Cloud and How to Address Them

I'm going to focus on the potential risks you need to be aware of before moving to the cloud, and what can be done to mitigate them

— Anil Chopra

The two key risks involved in moving to the cloud are those of data being either lost or compromised. A third risk with higher chances of occurrence, is the potential unavailability of your cloud services due to a technical snag somewhere (disk crash, WAN connectivity issues, ports blocked due to a change of firewall, or something else). None of these risks is affordable for any company. In fact, recently I read an incident where a small business owner had his website and all his customer contacts put up at an ISP's servers and was using a tablet to access all his data. One fine day, the ISP went belly up and shut down, leaving the small business owner completely stranded with no way to retrieve any of his data. Possibly there were many other small business owners who met with a similar fate.

Agreed that chances of this happening with large cloud players like Google, Microsoft, Amazon, etc are slim, but data losses due to disk failures are a reality even with larger players. Moreover, there are also a host of smaller cloud service providers out there as well. What if they go down and take all your data with them? Here are a few things to keep in mind.

The first thing to remember is that it's your data that's hosted at the cloud service provider, so the responsibility of securing and backing it up is also yours. Find out whether your service provider is backing up your data, and how quickly can you get it back if something went wrong?

The first thing to remember is that it's your data that's hosted at the cloud service provider, so the responsibility of securing and backing it up is also yours. Find out whether your service provider is backing up your data, and how quickly can you get it back if something went wrong? If the data is extremely critical and your business depends upon it, then setup automated tasks to backup your data to a local drive. This way, even if something went wrong, you will still have access to your data.

The thought of data loss or theft scares a lot of small business owners away from the cloud. But, come to think of it, cloud computing may not really be the technology to be blamed. Suppose it wasn't there, then would data loss or theft stop? No. It would still happen--laptops do get stolen, PC and server hard disks still crash, and there are break-ins to an office. So, instead of getting scared by technology, do proper background checks of the cloud service provider, and ensure you've taken enough measures to backup your data. There's no other shortcut! □

The Hidden Costs in a Cloud-Based Service

While cloud computing does offer significant cost savings over a traditional setup, it doesn't mean that there are no hidden costs involved. We interacted with several SMEs to uncover some of the hidden costs in moving to a cloud-based service

— Anil Chopra

You have to be careful about the hidden costs while choosing a cloud-based service. "Yes, there are hidden costs in the additional functionality. The plain vanilla SaaS offering is never enough." said one of the SMEs we spoke to. That itself says a lot. A cloud-based service provider might advertise a very low cost service, but when you get down to using it, you find that most features that were being promoted come at an additional cost. Here are a few hidden costs you need to watch out for when choosing a cloud-based service.

Check renewal costs

You might close an attractive deal with a cloud service provider at a very good price point, only to find that the cost of renewing the service is atrociously high. So "Check the approximate renewal cost", says Aabid A. Khambati, DGM-IT, Concept Pharma, a company that has already deployed cloud-based email and web hosting services. Once you've taken a cloud based service, it would be very tedious to shift to another, but you may not have a choice and end up paying a hefty renewal fee. So find out the renewal pricing structure beforehand so that you're not caught by surprise.

Read the fine print

"The add-on costs, fixed costs and recurring costs should be well defined. All the 'ifs and buts' should be put in bold in the contract and not in astrix.", said Dheeraj Chawla, CIO at Shib Dass and Sons, a small company with less than 100 employees. This clearly indicates that you should check the fine print in the contract that might lead to additional cost for you later. It's better to discuss upfront with the cloud service provider about the likelihood of other costs coming up later. These could be costs related to further customization of services, additional features, or upgrades of the back-end hardware. It could even be support related.

Monitor SLAs judiciously

The greatest nightmare for any company after moving to a public cloud-based service would be downtime or service unavailability. Outages do happen, but are you covered by the cloud service provider in any way against them? If so, how adequately are you covered? What types of outages will the service provider take responsibility for and what types will not be considered? Some cloud service providers leave it to customers to monitor their SLAs or to report outages. Is this clearly communicated by your cloud service provider? It shouldn't happen that your customers know about the outage before you do, and you end up paying out of your nose to the CSP to rectify the outage. Plus of course, there would be serious loss of credibility for your organization, so you have to ensure two things. One, you know who's responsible for monitoring and tracking the SLAs and service availability and what kind of outages are you protected against; and two, ask the cloud service provider for tools that let you monitor the service levels.

"There is a lack of monitoring tools to enable organizations to check whether the service has met their SLA. Servers, storage, sites and applications in the cloud are each governed by their own pricing formula," says Vivek Dharia, CIO, KNP Securities. The company has already deployed a host of cloud-based services, including email, cloud-based payroll system, web hosting, cloud-based invoicing, backup and replication, as well as cloud-based storage.

Other associated costs

Besides the hidden costs, you also have to worry about training your employees to use and manage the cloud services", says Dhiraj Barpujary, Deputy Director-IT at The Institution of Engineers. "There's also costs associated with network support services offered by the Cloud Service Provider", adds Barpujary. There would also be the cost of procuring additional Internet bandwidth and using security software to secure it.

As you can imagine, you may not be able to reap the benefits of cost savings by moving to the cloud if you're not careful. □

Which Cloud for SMEs - Public or Private?

A private cloud brings all the benefits of virtualization technology-fewer servers in the data center, greater hardware utilization, lower power and cooling costs, and more space saving in the data center

— Anil Chopra

Typically, when you hear the word cloud computing, it usually implies a public cloud. This might change in the near future, because of the action happening around private clouds lately. So much so, that a private cloud might gain equal if not more prominence. But is a private cloud really viable for SMEs? Let's analyze its pros and cons.

First, the advantages.

Private cloud is supposed to make your traditional IT infrastructure more agile. You can scale it upwards or downwards as per your business need. For instance, in a traditional IT setup, if you had to put in a new server or roll out a new application, the process would take several weeks, from procurement of hardware and software to installation, configuration, beta testing, and final roll-out. With a private cloud, you can do all this in hours if not minutes. You can disband the setup just as easily. It's all under your control, giving you greater level of customization than a public cloud.

A private cloud brings all the benefits of virtualization technology-fewer servers in the data center, greater hardware utilization, lower power and cooling costs, and more space saving in the data center

A private cloud brings all the benefits of virtualization technology-fewer servers in the data center, greater hardware utilization, lower power and cooling costs, and more space saving in the data center.

As compared to a public cloud, it would provide higher degree of performance, because you're not sharing the servers with a dozen other companies. It would be more secure, because you're not hosting your data on a service provider's setup. It's behind your own corporate firewall, meaning your data and apps remain under your own control. This can be great for companies that have to meet regulatory compliance norms, like those into financial services. Lastly, you're not tied down or locked into a cloud service provider's setup.

Now let's look at some of the disadvantages.

If you've not done virtualization, then your setup may not be mature enough to move to a private cloud setup. It does require higher initial investment, i.e. CapEx, as against a public cloud, which is primarily OpEx driven. You also need in-house skills or a third party vendor to manage it, because it is more complicated to setup than a public cloud. So the cost of maintenance and management must be factored in, because it's higher than what you'll pay in a public cloud. Its scalability is limited to the hardware you put in it, whereas in a public cloud, the scalability is much higher.

Private cloud therefore may not really be suitable for small organizations as they may not have the skills to set it up. Moreover, if you don't really need that level of speed for commissioning new hardware or apps, you may not need to go for a private cloud setup. □

Personal Cloud: Can It Offer More Than Public Cloud?

With offerings such as Google Drive and Microsoft Skydrive providing free public cloud storage, why would you need to move to a personal cloud? We explain the concept of personal cloud, and the key differences between the public and personal cloud so that you can make a decision about what's right for you!

— Srinivasan Viswanathan

Cloud computing needs no introduction. You may not know, you are probably using the "cloud" if a separate entity is hosting your data, but you are the owner of the data. While companies like Google and Microsoft entice you to utilize their free cloud services, wouldn't you feel safer if your data was within your arm's reach? This is where the concept of personal cloud comes in.

Personal Cloud: why should you go for it?

Instead of outsourcing your cloud storage needs to third-party vendors, why not build your own cloud in your own home? With some personal cloud hardware and a network connection, this becomes a distinct reality.

According to Michael Gartenberg (Research Director, Gartner), "Consumers will define their own sets of personal cloud services with regard to communication, collaboration and media consumption, despite vendors trying to control the digital ecosystem." A personal cloud can be setup by using hard-disk and sharing it over a secured network, such that only the user with the right credentials will be able to access the data through any personal device, from a PC to a smartphone. Usually, the personal cloud will provide a web interface, so it can be accessed from any device with a web browser and data connectivity. We have a look now at some key differences between a personal and public cloud solution.

1) Security of data

Public cloud providers do not totally disclose the security protocols guarding your stored data, because the security used may be proprietary to them. Many of these service

providers also disclaim any liability to your data if it is compromised, as stated in the legal agreement with the user. Whether these providers snoop through your personal data is also a shady area, with ample discussions on the web about popular providers facing lawsuits for selling personal info to advertisers. However, with personal cloud, one knows exactly the level of security protecting one's data. Also, knowing the physical location of your sensitive data is a huge plus for a lot of people, as it enables additional control.

2) Cost in the long run

It's clear that cloud computing is here to say. Within the next couple of years, we may even be booting our operating systems from the cloud! Hence, the personal cloud may be the best way to invest for the future. For example, according to our research, a year-long subscription to Google Drive for a 1TB storage space is approximately US$600. On the other hand, a personal cloud solution, like Iomega's Home Media Network Hard Drive, costs just US$170! Hence, if you are an intensive cloud storage user, it obviously makes economical sense to go for the personal cloud solution!

3) Speed of access

This is one area in which the public cloud could be a clear winner. Companies like Amazon and Google are equipped with fast commercial connections, while most people's home network connections are nowhere near as fast. This makes it particularly frustrating to download or stream large files from outside your home, as it will put an enormous strain on your home network's bandwidth capability. Streaming that HD video show through a personal cloud just got a little bit tougher, didn't it?

4) Draining the power

Another advantage with a public cloud solution is that the user does not need to concern themselves with power usage or downtime of the provider's data centers. However, running a personal cloud demands attention to energy usage, unless you are ready to be extremely liberal in terms of your electricity bill. Personal cloud solutions will involve some kind of hardware that you will need to keep powered on 24/7, probably along with your PC, if you wish to have 24/7 access. This may prove cumbersome for folks who are concerned about energy usage at home. Although it's not really like running a full-fledged data center, it is something to consider.

Go personal, or go public?

While both have their sets of pros and cons, the personal cloud may be a better option for someone very concerned about the security of their data. Although Google does encrypt data between the host machine and its servers, the data remains unencrypted on their servers. This may be something undesirable for people who wish their data to remain encrypted 24/7. On the other hand, a public cloud solution means that you can leave the maintenance of servers and technical know-how to the guys at the provider's end. You will not have to mine through manuals to set up or maintain the personal cloud. Hence, it really is up to the individual if they wish to trade off a certain level of insecurity for the convenience of public cloud storage. In our next segment, we will present a DIY guide to implementing your very own personal cloud. □

3 Free Personal Cloud Solutions Worth Checking Out!

Now that you are aware of the benefits of personal cloud, it is time to get started on your own personal cloud adventure! We share three personal cloud solutions that will enable file sharing from your system in a matter of minutes!

— Srinivasan Viswanathan

1) Tonido Desktop

Desktop Clients: Windows, Mac, Linux
Mobile Clients: iPhone, Android, iPad, Windows Phone, BlackBerry, BlackBerry PlayBook
Website: http://www.tonido.com/index.html

Tonido is a desktop application that allows you to use your local drive as a cloud storage, allowing access from any web browser. The speed of set up for Tonido impressed us greatly, as we were able to install and run the Tonido server within just 5 minutes! We also downloaded the Android app, that allowed us to browse our entire file system after logging in. Tonido's user interface is web-based, meaning it can be accessed through any browser. Tonido also offers the feature to provide guest access, so friends can login to access shared files easily. There is even Tonido Sync, which allows you to download a sync client to your desktop that syncs up to 2GB of data between various devices. The basic version is free, and so has a limited set of functionality. With the paid versions, user can do advanced tasks like accessing Tonido server as a virtual drive, streaming media content and syncing of data up to 100 GB. Tonido has clear disclaimers that it hosts none of your data, but only connects servers to clients through its own relay servers. Overall, the ease of setup for the client on the desktop was very impressive. The plethora of platforms it supports is another solid reason to try out Tonido!

2) PocketCloud by Wyse

Desktop Clients: Windows, Mac
Mobile Clients: iPhone, Android
Website: http://pocketcloud.com/

PocketCloud is another personal cloud solution offered by Wyse. It comes as a simple GUI application that lets you set some simple settings. The unique thing about PocketCloud is that instead of setting credentials on the server end, it enables you to make the cloud server discoverable by connecting to your Google account. This can be problematic in the corporate environment when the Google servers it's trying to access are blocked. The only workaround then is to perform some advanced manual configurations, as outlined on this site: http://bit.ly/TbEXbu. Given that we couldn't connect to Google talk servers in office, we found Tonido to be a far easier setup. On your mobile device, you can then download PocketCloud Explore that lets you browse the files on your system, once you have logged in with your Google account for authentication. The advantage with PocketCloud (over Tonido) is that folders that are shared can be accessed directly, without the time-consuming drill down needed in the Tonido app to access needed files. But a distinct benefit of using Tonido is its availability on such a wide variety of platforms, that are not available on PocketCloud. Another big disadvantage on PocketCloud is that streaming is limited to 30 seconds at a time, but there is no such restriction in Tonido.

3) Bdrive

Desktop Clients: Windows
Mobile Clients: Android, iPhone, iPad
Website: http://www.bdrive.com/en/

This is another option for the personal cloud enthusiast that works well. After installing the server version of Bdrive on your Windows or Mac, it provides you with a BID that serves as a unique identifier for your server. You can use this BID tag to connect from other computers as well as your mobile devices. As you set up Bdrive, it lets you login with your Facebook ID or create a new Bdrive account. One of the unique features of Bdrive is that it offers context menu options in Windows. Hence, if you want to share a folder or file, you can just right click and "Send via Bdrive" shows up as an option, directly sharing files and folders. However, a disadvantage is that you need to install the client Bdrive app to view shared files from other PCs, unlike in Tonido, where you can directly use the web interface to view shared files. Also, your friends will have to install Bdrive in order to access shared folders from your server device. There is also an Android and iOS app available to access files on the go. The Android app has a clean interface, and connects quickly to your host server once you login with your Bdrive credentials. Only the folders that you share with your own devices show up in the app, and this provides better access control than Tonido, where you can access your entire system without having to exclusively share it. We also tested streaming of videos, and it worked very smoothly using Wi-Fi. A premium feature offered in Bdrive is the ability to mount shared folders as virtual drives in the computer, so that they can be used like local drives in the file explorer. This valuable feature is offered free of cost on Bdrive, but offered as a paid feature in the other solutions. □

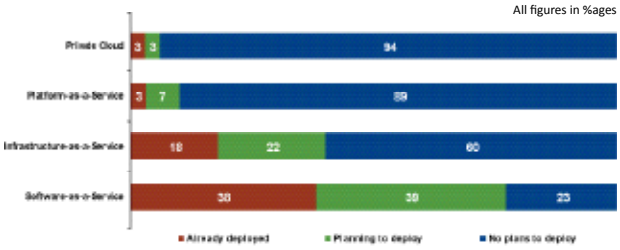
Cloud Adoption Trends in SMEs

PCQuest did a survey of 200+ organizations across seven industries having Rs. 20 to 500 Cr turnover to understand their current cloud services usage, future preferences, and their perceptions about the vendors in this space. Here's the complete story in graphs for a quick read.

— Anil Chopra

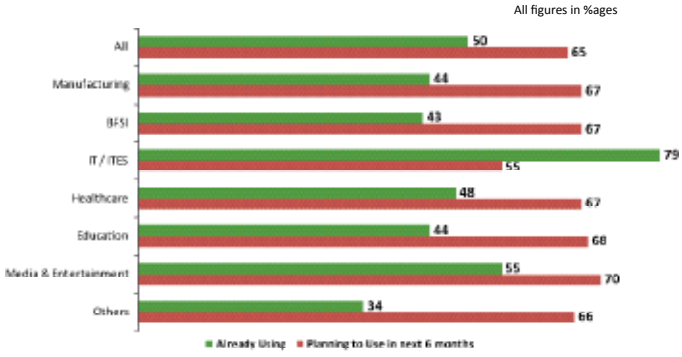
Overall State of Cloud Computing Usage

Deployment of Cloud Computing



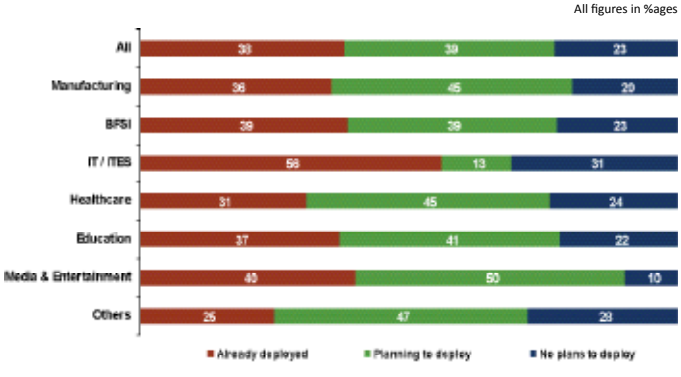
Most of the companies utilize Cloud firstly for software-as-services and secondly for Infrastructure-as-services. Surprisingly, the split between those already using SaaS and those planning to deploy is almost equal. Only 23% of the respondents were not likely to deploy SaaS. Second favorite cloud computing service is Infrastructure as a Service, or IaaS, with about 22% of respondents likely to deploy it, while 18% already using it. A whopping 60% of the respondents however, had no plans for the same. Private cloud and Platform as a Service is not a high consideration for the majority of organizations in this space.

Planning and usage of cloud computing applications



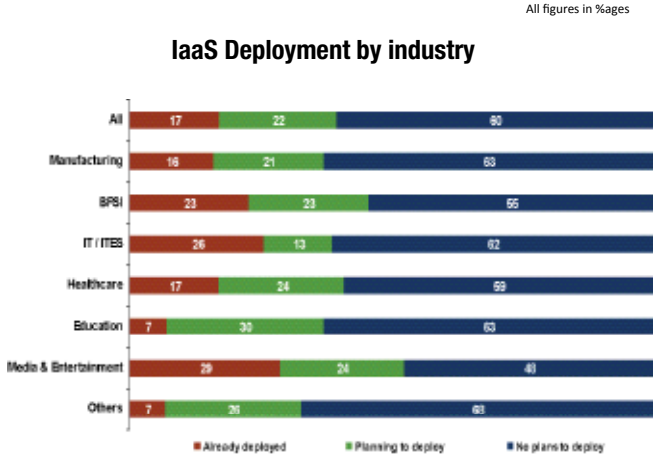
The good news is that most industries are likely to adopt cloud computing applications in the next six to eight months. 50% or more of the respondents from all industries surveyed said this.

SaaS Deployment by industry



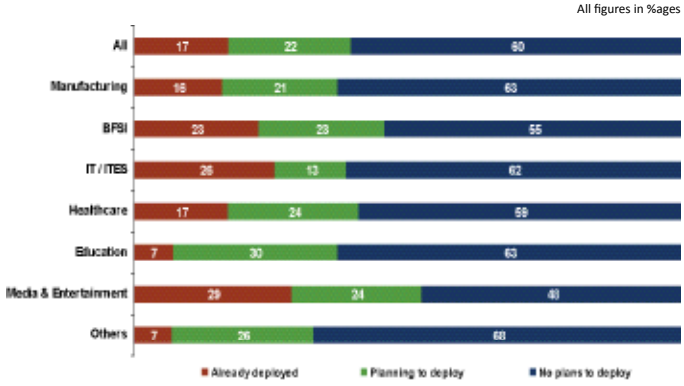
Highest level of SaaS usage is by the IT/ITeS segment, while the remaining industries have similar adoption levels. More than 35% of the respondents across all industries (except IT/ITeS), are likely to adopt SaaS.

IaaS Deployment by industry



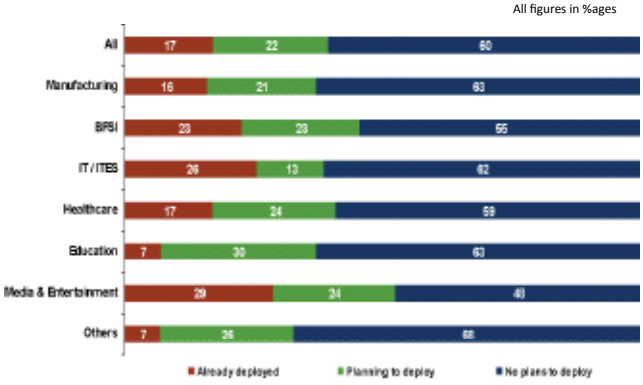
The largest likely adopters of IaaS are from the education sector. The IT/ITeS segment is largest existing adopter of the technology, just as they were in SaaS.

PaaS Deployment by industry



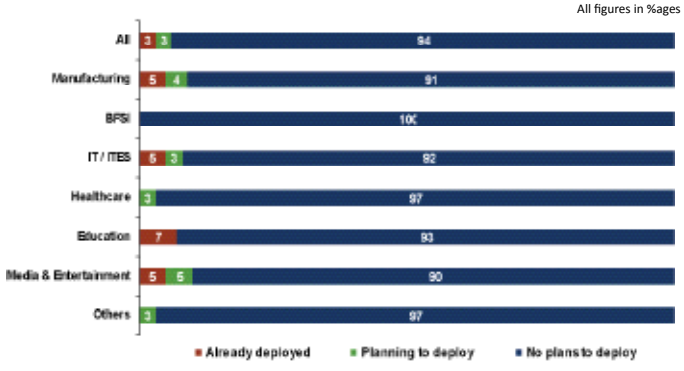
The overall adoption plans for PaaS are low, but amongst those who are likely to deploy, maximum responses came from the education segment.

IaaS Deployment by industry



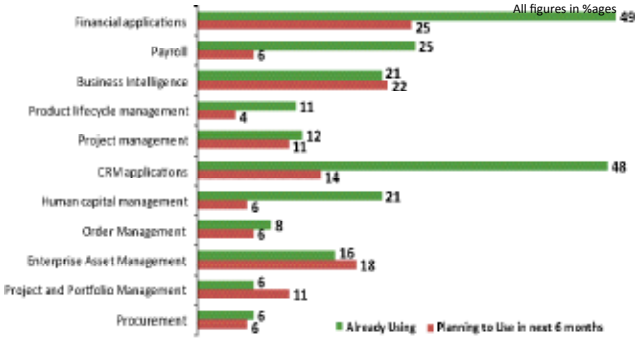
The largest likely adopters of IaaS are from the education sector. The IT/ITeS segment is largest existing adopter of the technology, just as they were in SaaS.

Private Cloud Deployment by industry



BFSI and education segments have no plans to adopt private cloud, and the responses from healthcare and industries classified under others are negligible. Media and entertainment industries had the highest responses for private cloud adoption for the future.

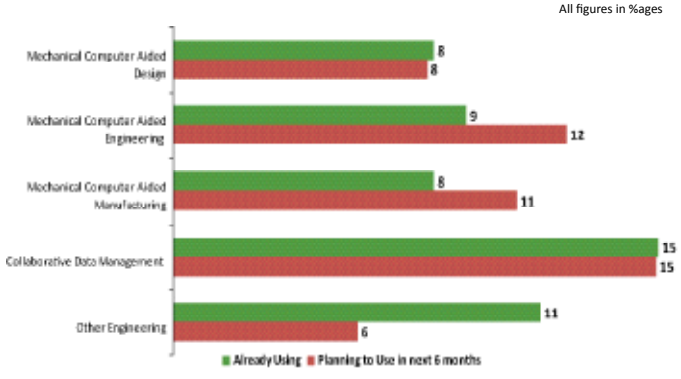
Plans for Cloud Based Applications Deployment



The highest usage of cloud computing is visible for financial applications and CRM solutions. Cloud based financial applications, Enterprise Asset Management and Business Intelligence applications are the highest on the consideration list for future among 11 application choices we gave to our respondents.

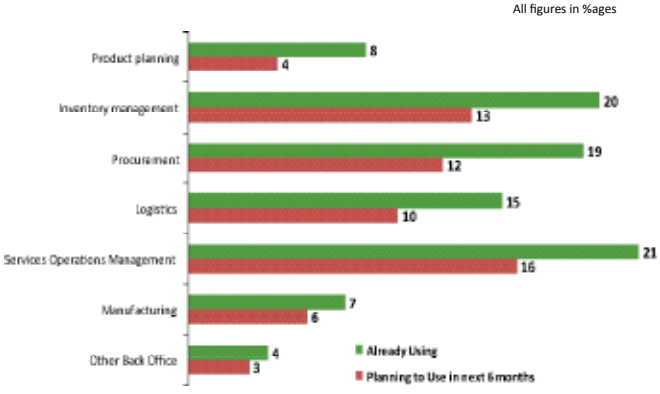
Plans for Cloud Based Applications Deployment

Engineering Applications Usage



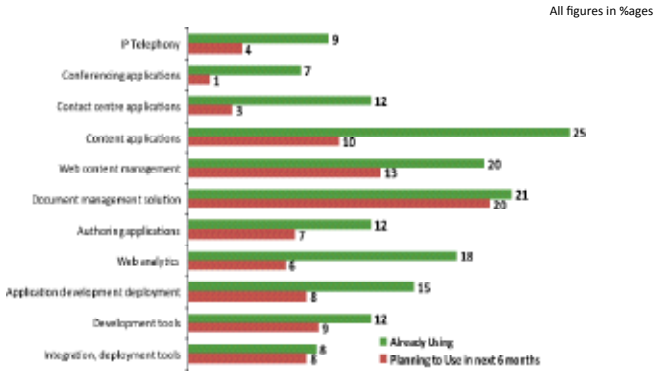
Among Cloud based engineering applications, Collaborative Data Management is mostly used; For future also it leads the pack.

Plans for Supply Chain Management related apps



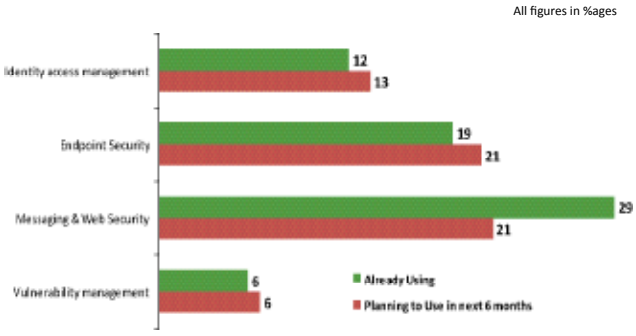
In this segment, Operations Management is highest used cloud based app, and also being planned to be used in future.

Collaboration and Messaging Applications



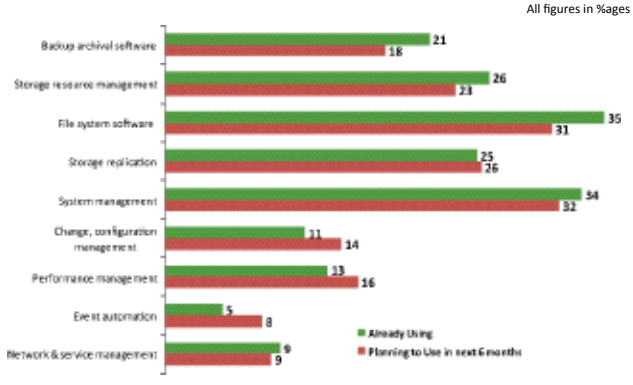
Among Cloud Based Collaboration and Messaging Applications, Content Applications are mostly used, while for the future, majority of organizations are considering Document Management Solutions.

Security Management Applications



A majority of organizations are already using cloud based messaging and web security applications, followed by endpoint security. For the future also, these two are highest on the SMEs' consideration list.

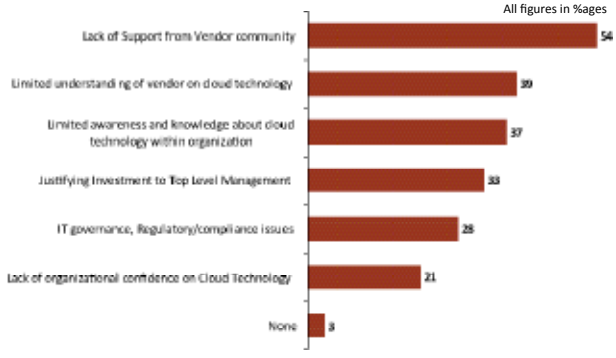
Cloud based Storage Management



Standard file storage services and system management are the most common cloud usage scenarios with 30% of the respondents already using the services. Future considerations are also high for these two uses.

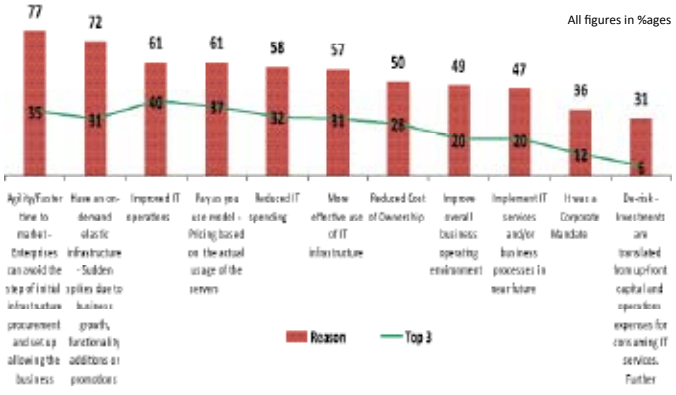
Challenges and Triggers for Cloud Adoption

Challenges Faced in Cloud Computing



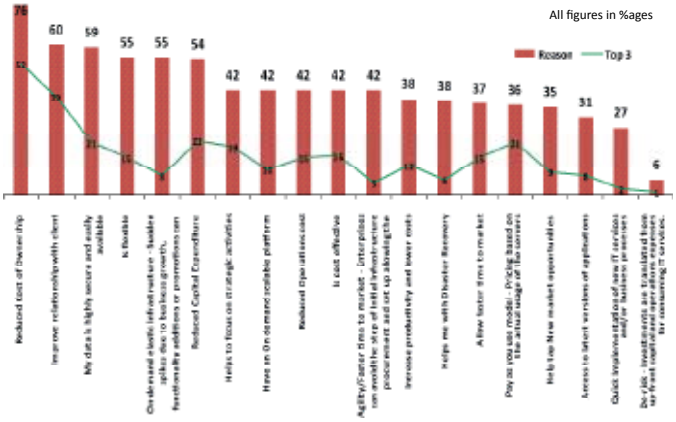
Support from the vendor community is a key concern area when it comes to planning for move to cloud computing for a majority of respondents. Limited understanding of vendor on cloud technology was the second biggest challenge.

Trigger for Cloud Technonology



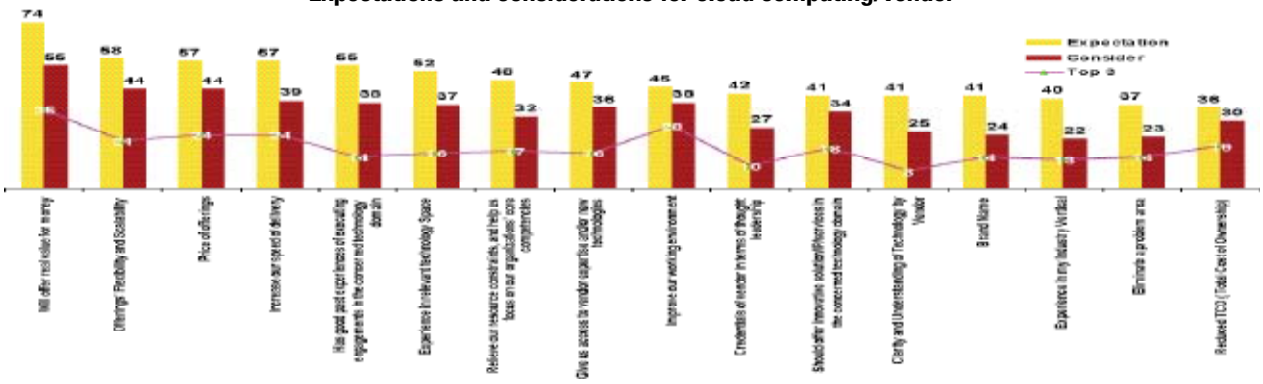
Agility/faster time to market are key reasons companies have adopted cloud services, as it reduces time taken for initial infrastructure setup. Improved IT operations is considered among the top three triggers for cloud services by maximum respondents.

Reasons for future adoption



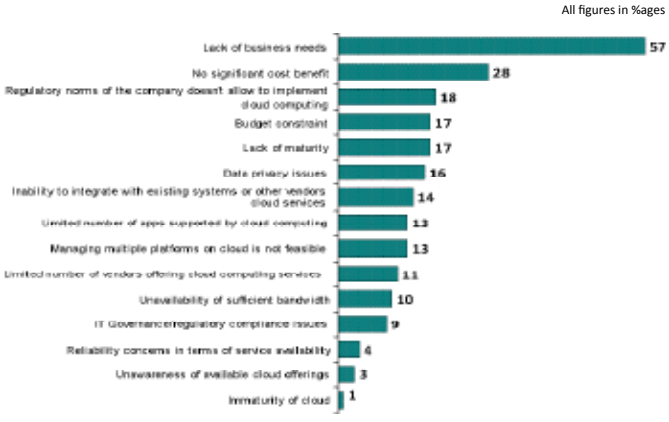
Reduced cost of ownership is the biggest reason for planning to adopt cloud technology in the future.

Expectations and considerations for cloud computing/vendor



Most of the respondents would consider cloud computing vendors who offer real value for money.

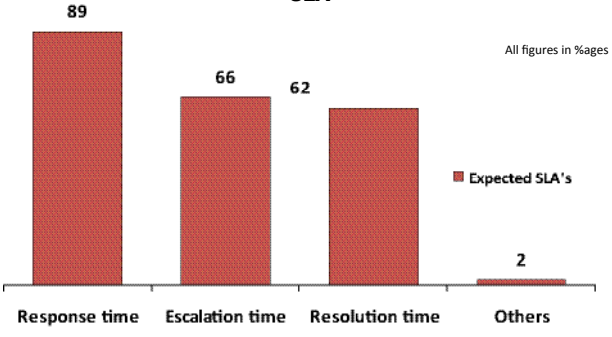
Reason for not adopting



Interestingly, the reason for not adopting cloud computing is that a lot of organizations don't feel the need for it.

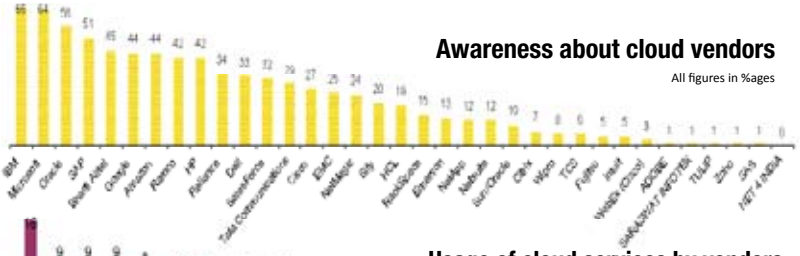
Cloud Services Vendor Awareness, Usage, and Planning

SLA



Response time is the key SLA that a majority of the respondents felt strongly about when engaging with a cloud computing vendor.

Awareness about cloud vendors



IBM, Microsoft, and Oracle were the top three vendors that a majority of the respondents were aware of, followed by SAP, Bharti Airtel, and Google. Airtel's case is interesting, considering it's a late entrant in the market and has already created awareness about its services.

Usage of cloud services by vendors

The highest used cloud service is from Cisco's WebEx, followed by Microsoft and Oracle.

Planning to use cloud services by vendor

This is an interesting outcome, with a majority of respondents likely to choose Bharti Airtel as their future cloud computing vendor, which is a fairly new entrant in the cloud computing services space.

Cloud Computing Terms

Cloud computing: It is the use of computing resources (hardware and software) that are delivered as a service over a network, typically the Internet. Cloud computing entrusts remote services with a user's data, software and computation.

Cloud Provider: A service provider that offers customers storage or software services available via a private (private cloud) or public network.

Managed Cloud: All infrastructure is maintained by the Cloud Provider who acts a virtual IT support team. A Managed cloud can exist on dedicated infrastructure or a multi-tenancy environment.

Multi-tenancy: Cloud-hosted apps where multiple customers share a single application, even though they only have access to their own data. Salesforce.com is an example.

Software as a Service (SAAS): Software services available over the Internet to organizations' workers such as CRM databases thus removing the need for the apps to be purchased, installed, and run on the customer's own computers.

Private Cloud: An internal cloud that sits behind an organization's firewall. The cloud can be managed by that company's IT department, which can then offer cloud services to workers.

Public Cloud: A cloud computing environment that is open for use by the general public, for example Gmail, Outlook Mail, Facebook, etc.

Hybrid cloud: A networking environment including more than one integrated internal and/or external providers.

IaaS: Infrastructure as a Service refers to access to an IT infrastructure (servers, storage, network equipment, and software) via a virtualized environment delivered as a service over the Internet by the solution provider.

PaaS: Platform as a Service refers to provision of an underlying computing platform (operating system and associated services) as a service over the Internet by the provider.

Cloud storage: A service that allows customers to save data by transferring it over the Internet or another network to an off-site storage system maintained by a third party.

Cluster: A group of linked computers that work together as a single computer, for high availability or load balancing.

Elastic computing: The ability to dynamically provision and de-provision processing, memory, and storage resources to meet demands of peak usage without worrying about capacity planning and engineering for peak usage.

Middleware: Software that sits between applications and operating systems, consisting of a set of services that enable interoperability in support of distributed architectures by passing data between applications. So, for example, the data in one database can be accessed through another database.

Pay as you go: A cost model for cloud services that encompasses both subscription-based and consumption-based models, in contrast to traditional IT cost model that requires up-front capital expenditures for hardware and software.

RIA: Today's web browsers have fast script engines and rich graphics and plug-ins, such as Adobe Flash, to extend their capabilities. A rich internet application has applications running in the browser that have rich graphics and sophisticated user interface. The term was made popular by Adobe for applications using its Flash plug-in, but it is also sometimes used to describe advanced HTML applications.

Virtualization: Emulating computer hardware in software, so that one or more emulated computers can run simultaneously on a single physical computer.