

Cloud Computing Market Driven By Exploding Digital Universe



Cloud computing has been witnessing increasing market traction within major geographies across the globe. In India, the market for cloud based data storage services is currently in growing phase due to their rising adoption in large business setups as well as small and medium size enterprises (SMEs). Cloud computing technology offers tremendous cost benefits over traditional in-house systems for data storage. However, migrating to cloud is marred with its own set of challenges such as incompatibility with legacy systems and data security issues. However, the adoption of cloud computing services in India is gaining attraction, with increasing participation expected to be witnessed from both private as well as government sector. Furthermore, cloud vendors are increasingly devising innovative pricing modules to cater to a wider consumer segment. However, cloud services are likely to face stiff challenges pertaining to data security, vendor lock-in period and less availability of quality IT hardware infrastructure in semi-urban regions across the country. DT has gathered vast resources for partners to highlight vast opportunities and challenges for this market.

Growth Story

Today, Cloud Computing is revolutionizing IT by making it possible to run IT-as-a-Service to drive maximum efficiency. This transforms IT departments from a cost center that reacts to business demands, to a revenue center that drives business agility and competitive edge. The shift to cloud computing is being driven by the exploding Digital Universe. As per EMC IDC Digital Universe study, digital bits captured or created each year in India are expected to grow from 127 EB to 2.9 ZB between 2012 and 2020. At the same time, gap between Digital Information generated and available storage capacity will grow from a third in 2012 to a ninth by 2020. This is driving cloud adoption among Indian enterprises. **Anantharaman Balakrishnan** Country Head, EMC Global Services India at EMC IT Solutions India Private Limited, says, "Our own study estimates that by 2020, 42% of the digital universe in the country will in some way be "touched" by the cloud i.e. stored, transmitted, or processed. Interesting, cloud adoption is gaining momentum amongst midmarket and



Mr. Anantharaman Balakrishnan
Country Head, EMC Global Services India

SMB as well. As per AMI partners, expenditures on cloud-computing within India SMB ICT portfolio which is 10% currently is predicted to increase by a CAGR of 23% over the next five years. We recently conducted a survey with CxOs across the world to gauge IT's role as an enabler of business change during the shift towards the mega trends of cloud, mobile, social and Big Data. We found that 76% of respondents identified a need

for joint public and private cloud services – hybrid cloud – as a means for greater agility and security."

The IT industry is observing a paradigm shift in the technology space today. The cloud phenomenon, which enables an automated and optimized performance, is majorly driving the shift.

According to **Sunder Muthevi**, VP Product Strategy & IT, Pi DATACENTERS, "The growing cloud market in India with an estimated CAGR of 32 % over the years 2013-2018 stands as a proof for the same. Gartner's Cloud Adoption Survey in January 2015 revealed 53% of organisations were already using cloud services and another 43% in the same survey indicated planned adoption by end



Mr. Sunder Muthevi
VP Product Strategy & IT, Pi DATACENTERS

of year. It also states that by 2018 public cloud spending in India will reach nearly \$2 billion, from \$638 million in 2014. A 400 % growth in the cloud spend from 2012 to 2016, as predicted by Forrester reflects the trends. The market's current growth rates and significant potential paved the path in earning India its 8th rank."

With the government taking huge strides to digitize India, the merits of cloud technology are poised to leave a deeper impact. **Nilesh Goradia**, Head Workspace Services & Government Business, Citrix, adds, "According to Gartner's latest cloud adoption survey, 61 percent of respondents in India indicated that they are currently using cloud services, and additional 31 percent plan to use cloud services by the end of 2015. The IT efforts in India are considered to be on power with



Mr. Nilesh Goradia
Goradia, Head Workspace Services & Government Business, Citrix

their global counterparts and keen on reflecting best practices. However, awareness levels still need to elevate for a mature and full-fledged transformation."

Vishal Parekh, Marketing Director, Kingston Technology – India, explains, "India's digital footprint is growing at a faster pace thereby in-



Mr. Vishal Parekh
Director, Kingston Technology- India

creasing the potential for cloud computing services. There are more user segments adopting this evolution and hence there is an opportunity for the technology to emerge as a new paradigm for hosting and delivering services over the Internet. The cloud based data storage services in India is getting popular with Enterprise, Corporate, government and even SMB/SME segments. In the coming year, we will see many more corporates and enterprises investing in cloud computing to scale operations. Prospects in India for cloud computing seems bright as the companies are looking forward to scale up operations with us."

Inhibition Factor

One of the pressing concerns with respect to cloud adoption is data security and privacy. Although CIO's have welcomed the shift, adoption levels in India are not as full-grown as developed markets.

Nilesh Goradia adds, "Furthermore, factors like lack of understanding how the cloud functions hinders the shift. Apart from the cost effective factor that cloud provides, CIO's need to fully weigh their options in terms security and compliance."

The potential for Cloud Computing market in India is vast, however the adoption is slow, due to various reasons. **Lakshminarasimhan**

Rajabather, Vice President – Platform & Technology, Maveric Systems, says, "Cloud Services offerings in India largely consist of IaaS and SaaS services. PaaS and BPaaS service offerings are rare and when available, will drive the higher value chain in the cloud computing market. Lack of understanding of the benefits to be derived from cloud computing, relatively poor connectivity, and security concerns are the barriers inhibiting adoption of cloud computing."

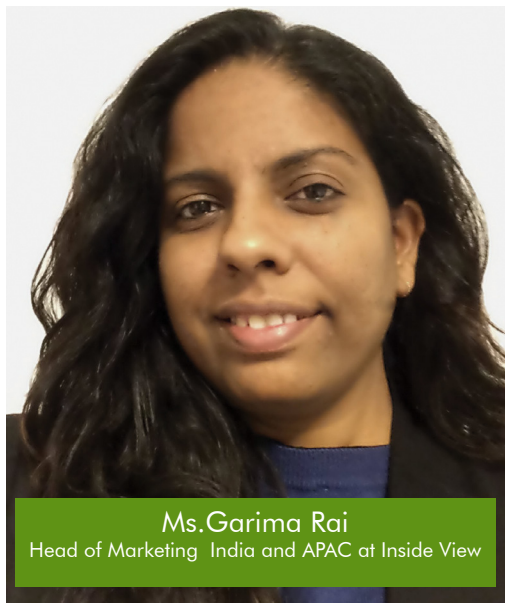
Though the potential of cloud is a long known fact, lack of proper understanding and knowledge, on right choice of solution is inhibiting the full scale adoption. "While the trends in future investments are more inclined towards cloud adaption, the already existing on premise datacenters for some of the large enterprises ham-



Mr. Lakshminarasimhan Rajabather
V P , Platform & Technology, Maveric System

per the swift transition. This signifies the role of a service provider in not only providing the solution but also educating the customers as a trusted partner," insists, **Sunder Muthevi**.

Cloud computing does offer tremendous benefits, there are some concerns regarding cloud adoption that can stall its growth if not dealt with priority. According to **Garima**



Ms. Garima Rai
Head of Marketing India and APAC at Inside View

Rai, Head of Marketing – India and APAC at InsideView, "Prime among these are concerns regarding privacy and security of content, and integrability with legacy systems. Security and privacy risks can be mitigated to a great extent by use of by use of data encryption and back-up, better SLAs from cloud service providers, and due diligence from users.

Choice of your cloud partner is also of paramount importance as trust plays an important role here. Integrability and seamless interaction with other systems / apps is something that app vendors need to ensure for widespread adoption of their apps."

Adoption of the cloud is definitely on the rise. Due to lack of awareness and vision there was reluctance earlier but with all the interest and participation from business sectors now the barriers are more than halved. **Mr. Parekh** reveals, "Most companies are developing the architecture for creating infrastructure while others are still figuring out how to architect a robust cloud-based

system. I think it will take a while to adopt the technology and implement the plans. Also, the Government initiatives to improve overall infrastructure has improved adoption in leading data centres across India and have helped setting a benchmark."

Irrespective of Size

Cloud today aims to transform the way businesses are run. It proves to be a competitive advantage for every company, for the more economical, faster, portable and safer solutions it provides. Organisations today, aim to optimize costs and get more for less. This holds true for organizations of any size.

The cost reduction at every stage of the technology life cycle leads to a significant increase in productivity, profitability and there by business efficiency. The 'on the move' feature enhanced by cloud, eases out the limitations of physical presence and requirements for any firm. **Mr. Muthu** further adds, "The benefits spoken of, hold good to organizations of all sizes, making cloud a mainstream technology tool. The cloud phenomenon enables all organizations to compete in equal terms of infrastructure and efficiency by creating an even platform of quality. For the economic limitations faced by small and medium businesses, this proves to be a more pocket friendly and efficiency enhancing choice. The benefits reflect in keeping of shoe-string budgets of the organizations. The cloud is not only a cost optimizing tool but also a strategic choice towards smart business. This proves that while the cost benefits are upfront realized by small and medium size organizations, for the efficiency it brings in large organizations are no exception for the need of cloud."

Whether it is a startup or a Commercial organization or a Large Enterprise, there is a place for IT to be in the Cloud. Elaborating more on the size, **Balakrishnan** says, "A startup could choose the Cloud to cater to agility, a Commercial organization could choose IaaS or PaaS as a platform on the Cloud, whereas a Large Enterprise could adopt a Hybrid Cloud approach to cater to sea-

sonality of business demand, new projects, compliance related to data privacy. More importantly, any Large Enterprise with multiple subsidiaries could look at a Hybrid Cloud to provide a Shared IT Service which could help keep the necessary compliance related organizational data in a private Cloud and the other shared applications like HR, Expenses, employee portals etc in the Public Cloud."

According to **Nilesh**, the small and medium businesses were the first to adopt cloud computing, given the inherent advantage of getting to use world-class infrastructure without actually purchasing any hardware or maintaining any IT support staff. He says, "Even today, it is small and medium businesses who benefit from cloud models the most, especially by using the pay-as-you-go model which giving the option of on-demand computing. This has enabled high levels of agility and flexibility, allowing businesses to grow when there is increased demand and reduce capacity in case of reduced demand. Overall, enterprises irrespective of size are deciding to migrate their IT framework to cloud servers given the benefits this model yields including; flexibility in resource utilization, cost effectiveness and reduced risk."

Going forward cloud should be part of every business' IT strategy. It's a staple food for growth of any business operating in today's digital world. **Garima Rai** highlights, "one size fits all principle certainly does not apply here, and every business must have a cloud adoption plan that suits its unique requirements. Whether deciding between private, public, or hybrid cloud, or choosing between cloud-based app vendors, every decision should involve a structured decision-making process that evaluates every aspect of each proposition."

Data Security

Maintaining control over data in cloud is important for the success of cloud computing adoption. While the data is logically in the control of the enterprise, it physically resides in a public infrastructure. "Security concerns over data is the primary inhibitor for businesses from making a move to cloud. Hybrid and private clouds for sensitive data environ-

ments provide localized solutions to data security challenges. Encryption, Database Audit Protection, Security Information Event Management, Access Control have emerged as key mechanisms to ensure the security of data in cloud environments," **Lakshminarasimhan** further adds.

Enterprises must make sure their service provider adheres to highest standards of infrastructure and cyber security. The controls required to ensure the adherence to same, should be in place. According to **Sunder Muthevi**, "Enterprises should be completely aware of the service provider's performance standards and the practices in place, to confirm a safe keeping and functionality of their data. A nuanced analysis is a must, as a part of strategy for any enterprise, while choosing the right solution for their environment. With the data sovereignty challenging the status quo of the industry, the enterprises also need to be cognizant of the locality of their data and the laws & regulations around it. A judicious choice of the provider with the compliance and security concerns in mind would help."

Admitting the high risk, **Garima Rai** says, "Let's admit that 'data security' needs to be tackled better to be able to realize the full potential of cloud computing. The onus lies equally on vendors as well as consumers of cloud. While anytime, anywhere, device agnostic access to key information enables your business' stakeholders, it also opens newer points of entry into your cloud infrastructure for attackers. This is where businesses themselves need to take every possible measure to mitigate potential risks. Controlling data access based on user context, using encryption and other advanced security measures to ensure data security, restricting access to authorized devices, and end-to-end tracking of every user's activity are few measures that can help mitigate security risks."

Whereas EMC is closely working with EMC's federation company RSA, to make the cloud environment secure, irrespective of the nature of the cloud being deployed. **Balakrishnan** says, "Leveraging RSA's security expertise

and EMC's leadership in virtualization and cloud enables you to obtain broad-based security assessments for virtualized environments and new services. This allows you to secure virtual desktop infrastructures and use RSA best practices and established safeguards to build secure, virtualized, and private cloud environments through technology, policy, and program development. If you look at VMware's NSX and the latest version of the product, it will provide micro segmentation and security for both VMs and container workloads in both the private and public clouds."

Cloud Partners

As you make your move to the cloud it's extremely critical to choose the right cloud partner. According to **Garima Rai**, "Trust is a key factor here. Not just better SLAs but trustworthiness that ensures adherence to those SLAs is what matters. However, elasticity and scalability to address your evolving requirements, security, privacy, performance, latency, and reliability are important considerations when evaluating vendors."

For traditional apps, which are high on data and analysis, the partner should be chosen with utmost diligence. The factors that would play key role are partner compatibility, ease of access and cost efficiency. **Sunder Muthevi** adds, "The partner should be able to architect to enable an effective and cost efficient maintenance of updates, tech-refreshes, back-ups. Compatibility with latest versions and customizability to the requirements need to be taken into consideration. Enterprise client must ensure that the cloud partner is certified by the respective technology vendor. The experience and expertise of the cloud partner in enabling a seamless migration and hosting the client environment would play a key role while choosing. The cloud provider should demonstrate the capability of Enterprise class cloud infrastructure, Service Delivery and Capability with compliance in place."

Applications such as ERP, CRM and industry/domain specific applications are the backbone of enterprise and it is important to evaluate and select a cloud services provider. Main considerations would be: industry experience, customer ownership, security, reliability and scalability.