

Pivoting to the Hybrid Multi-Cloud Future



Businesses running legacy systems are gravitating towards a hybrid multi-cloud world that combine private and public cloud services and their respective benefits

The cloud market in India was at an inflexion point last year, as organizations started gravitating towards a retrofit hybrid multi-

cloud strategy, as they entrusted the cloud service providers for their agility, transformation, and fast-paced growth objectives, which were simply not possible in an on-prem

or even a single-cloud world. Unlike those new-age businesses which were born on the cloud, even the government, traditional and large-and-small-scale businesses are also well past the dreaded dilemma of to be or not to be on the cloud. Businesses are spending more on cloud infrastructure than they are on on-premise infrastructure. As per IDC estimates, the cloud spends are 4.5 times than the traditional IT spends.

Businesses have been consuming cloud in their unique ways based on their existing IT investments, regulatory requirements, and solution requirements. Public cloud has remained a convenient option for businesses compared to the on-premises options and hence has seen good growth so far. Gartner says that the public cloud services in India reached \$1.9 billion in revenue in 2018.

As per DQ estimates, driven by an increasing IaaS and SaaS spending, the cloud market in India grew at around 32 percent to become a \$2890 million market in FY 2019.

ENTERING A HYBRID MULTI-CLOUD ERA

But the promises of public cloud



services will only be fully realized in a hybrid model - where public and private cloud environments of any type and size are fully integrated and interoperable, says the Nutanix Enterprise Cloud Index. The report says that the adoption of hybrid cloud workloads in India will more than triple from 13 percent to 43 percent in 2019 while Gartner forecast says that 70 percent of enterprises will run on a multi-cloud strategy by 2019.

As businesses move forward in their cloud journey, hybrid multi-cloud is becoming the order of the day. For businesses running legacy systems, but keen to incorporate modern applications into their operations- choosing a hybrid multi-cloud strategy can help them

avoid the migration woes and get the best of all worlds. Businesses can store data and run applications on the environment best suited for them. They can also avoid vendor lock-in to some extent, and get the best price-performance ratio by using their infrastructure optimally. But the complexity of designing, implementing, and managing a hybrid multi-cloud world can be a challenging task for many.

"As per IDC's Cloud view Survey 2018, organizations in India are looking at multi-cloud for key benefits including improved time to market and/or expand into new market segments, giving business units independence in sourcing IT solutions along with moving away from capital expenditure. Many

Leading vendors
• Amazon Web Services (AWS)
• Microsoft Azure
• IBM
• Oracle

organizations deploying a mix of clouds to overcome the challenges associated with IT governance and security as well," said Rishu Sharma, Principal Analyst, Cloud & AI, IDC India.

"Companies have started leaning towards multi-cloud and cloud-native strategies to avoid lock-in and achieve hyper-agility and portability. There is also a steady shift from

Where will Workloads run (2018 vs 2020)

What percent of workloads run/will run from the following?

Today vs 2020
(Somewhat/Extremely significant)



public cloud to hybrid environment to overcome security concerns and align cost to consumption," said Abbas Godhrawala, Partner, Advisory Services, EY India.

Another advantage of having a multi-cloud architecture is the cloud arbitrage across public clouds (dynamically shifting workloads across clouds to leverage relative price and performance advantages).

Michel Paulin, CEO, OVH said, "It's not a good idea to put all your eggs in one basket. Hence, businesses must consider the reversibility factors very well for their multi-cloud strategies. Because, multi-cloud is not just about being on different clouds, it is more about having the ability to make arbitrage between the clouds. If you are on five different clouds, but you can't move anything dynamically, because reversibility is

the cost or a technical barrier, then it's not good for customers."

TRACTION FOR SAAS, PAAS, IAAS

SaaS, PaaS, IaaS are the three ways of delivering cloud services depending on the requirements of businesses.

Software as a Service (SaaS) or cloud application services is the most utilized cloud option. SaaS eliminates the need to download and install applications on individual computers and can be accessed through web browsers using an internet connection.

Platform as a Service (PaaS) or cloud platform services provide platforms for software creation via the web. The developers can focus on building the software without worrying about runtime, middleware, operating systems, infrastructure, or virtualization.

Infrastructure as a Service (IaaS) or cloud infrastructure services provides compute, storage, networking, virtualization, etc.

Majority of cloud service revenue (close to 40 percent) still comes from SaaS, followed by IaaS (close to 15 percent), and PaaS which has been catching up slowly. A significant cloud consumption happens for Business Process Services (BPaaS) and a growing Cloud Management and Security Services.

Nearly half of the revenue comes from SaaS, followed by IaaS, and PaaS. IaaS and SaaS are the popular choices for the cost benefits they offer in terms of upfront investments in infrastructure along with the flexibility of an easily scalable environment. However, the demand for PaaS is also catching up faster among the organizations for a considerably

Adoption: SaaS vs IaaS vs PaaS



lower time to develop and market software. Cisco Global Cloud Index (GCI) indicates by 2021, 73 per cent of the total cloud workloads and compute instances will be delivered through SaaS.

Alex Li, General Manager, Alibaba Cloud, South Asia said, "Migration of application and workloads from on-site data centres to the cloud, as well as the development of cloud-ready and cloud-native applications, are fueling growth in cloud space. This means that there will be increased usage of SaaS and PaaS."

As per NASSCOM forecast, the Indian IaaS market is poised to grow to grow at 25 per-cent rate to become \$2.4 billion in 2022, while the SaaS is poised to grow at 36 percent rate to touch \$3.4 billion by 2022.

ENTERING THE ERA OF INTELLIGENT CLOUD

Cloud has been evolving faster with the growing demands for edge computing, server-less, around artificial intelligence (AI), blockchain, Internet of Things (IoT) and has become critical underpinnings for digital innovations.

All the major cloud providers are now working on key technologies that are moving beyond the first-generation cloud technologies. The current focus is more on making AI more accessible 'as-a-service'.

Edge computing is also coming up in a big way, as devices become more powerful, enabling local data processing and AI capabilities.

Vikas Arora, IBM Cloud and Cognitive Software Leader, IBM India/South Asia said, "We believe the continued convergence of IT and telecommunications will bring edge

computing to the forefront in 2019. In such a scenario, businesses will be empowered to increasingly drive innovation, expand automation and reduce response time in low-bandwidth locations. Hybrid cloud platforms will use edge networks to provide improved visibility and the ability to analyze, protect and harvest valuable data across devices."

The journey towards the Cloud 2.0 also focuses on scaling the blockchain ecosystem to develop new use cases. For instance, Blockchain cloud storage solutions address data-privacy concerns in an unforeseen way. The data and user files aren't fully controlled or accessible by a single third party. Because it takes the user's data and break it up into small chunks. Then it adds an additional layer of security and distribute it throughout the network. Thus, encrypted fragments are spread across multiple nodes controlled by keys that the users hold.

MARKET OUTLOOK

Cloud adoption in the country has been rapidly accelerating driven by increasing innovation, need for agility, and government's move towards Digital India.

Migration from on-premise to cloud is also motivated by the data scalability requirements that are an intrinsic characteristic of AI, ML, IoT- which now have become an integral part of the IT. "The Personal Data Privacy Bill mandates Data Localization which means every Cloud Service Providers(CSP) will have to create at least one cloud pod operating in India for every service delivered to users in India. Leading

Indian Tele-communication Service Providers are engaging with major CSPs to overcome implementation barriers such as high-speed internet connectivity, bandwidth, power supply and localized data centres," said Abbas Godhrawala of EY India.

As the market move towards a multi-cloud environment, there is a demand for newer innovation and delivery models as well. "As the cloud is becoming the core foundation for digital transformation, it is no longer centralized; the platforms are being distributed to the point of need. The existing platforms need to be revamped to ensure newer ways of delivery from datacenters to end-user devices," said Rishu Sharma of IDCIndia.

As customers shift business-critical solutions and data to the cloud, the demand for a trusted cloud provider that has deep security capabilities and a clear policy on privacy is becoming more important.

Meetul Patel of Microsoft India said, "Customers are beginning to evaluate the local and global security, compliance, and ethical policies of vendors as much as the technical and support capabilities. They are looking for more than transactional vendors and seeking partners who can give them platforms that are compliant across markets, and embedding security into all facets of their platform."

Businesses are going to spend increasingly on cloud in the coming years, as the cloud is considered to be the bedrock of the next wave of tech disruption. But it will increase the management, integration and security challenges for the customers further. The spiralling cost of cloud

consumption and shortage of quality cloud skills can also be a deterrent to an otherwise growing market. The growing affinity towards the hybrid multi-cloud will also require proven expertise in designing, building, and operating hybrid clouds as well as an array of comprehensive hybrid solutions from the vendors.

VENDOR PERSPECTIVE

Balakrishnan Anantharaman, VP and MD – Sales, India and SAARC, Nutanix said, "India is now set to lead the world in hybrid adoption, as traditional three-tier hardware architecture is increasingly replaced by a software model. A pattern further validated as acquisitions and transitions by traditional tech continue and more and more public cloud companies embrace hybrid to offer their customers."

Shalender Kumar, Regional MD, Oracle India said, "Hybrid cloud operates as a change agent rather than just an enabler. It is an easy way for organizations to extend their IT capabilities cost-effectively. Organizations can integrate the hybrid cloud infrastructure with its existing infrastructure to provide new capabilities to their end-users while re-ducing cost. Not just that, hybrid clouds are also capable of managing current business needs and future growth simultaneously."

BS Nagarajan, Senior Director & Chief Technologist, VMware India said, "The market, in general, is headed largely in the direction of hybrid clouds. The rate of adoption for hybrid cloud will probably be highest as compared to public and private clouds. Initial fears about security have been addressed by

the major solution providers and many companies are using public clouds extensively for their test, development and less critical workloads. However, for business-critical applications like SAP, Core banking, etc. organizations still prefer running those in the private cloud."

"Enterprises today look to leverage an increasingly diverse portfolio of intelligent and automated services and infrastructure platforms to improve their cloud experience. A hybrid cloud strategy enables them to launch new products and services faster and immediately demonstrate operational excellence through agile development and cloud-native technologies for continuous innovation. The true hybrid cloud solution brings unique value to IT with bi-directional data and application workload mobility, multi-cloud flexibility, unified hybrid management, and the choice to

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consume hybrid cloud as-a-Service," said Rajesh Dhar, Senior Director, Hybrid IT, HPE India.

Trideeb Roy, Head, Data Center Sales, Cisco India said, "Cloud has evolved from an emerging technology to an established engineering solution that has gained widespread acceptance and deployment. Due to its ability to scale, save costs and agility in innovation, it has become lucrative for Indian SMEs and enterprises to become significant consumers of cloud. Within the enterprise segment, database/analytics and IoT will be the fastest-growing applications."

Meetul Patel, COO, Microsoft India said, "The cloud is becoming more intelligent and extending all the way to IoT endpoints. It is exploding with tools and services that can help businesses rapidly develop innovative new solutions that were simply not possible in an on-prem world. Customers are spending less on maintaining infrastructure and focusing more on innovation. And many are even developing entirely new business ideas that are only possible through their cloud platform."

Vikas Arora, IBM Cloud and Cognitive Software Leader, IBM India/South Asia said, "With blockchain services over the cloud, enterprises can embark on the path of decentralization to deploy the same way anywhere – on public, private or own premises clouds. Similarly, with cloud, enterprises including small and medium businesses (SMBs) can integrate AI capabilities, as the investments and risks become lower. They get access to the latest technologies and can choose the services they need."