ENABLING SMALL BUSINESSES IN INDIA TO SCALE UP WITH SECURE CLOUD COMPUTING SOLUTIONS
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Abstract

As an OpEx model where payments for enterprise applications and data storage need to be made only as per usage, cloud helps SMEs in making significant cost savings. Start-ups that have a strategy for growth can keep scaling up their venture by leveraging the cloud to manage their IT resources. Moreover, with increased efforts for streamlined security and data privacy, this platform is emerging as an ideal technology platform for businesses.

Introduction

The core idea of cloud computing may be traced back to the 1960s when John McCarthy had predicted that “computation may someday be organised as a public utility.” However, it was only in the late 1990s that the world first saw the adoption of cloud as a resource for network infrastructure.

Today, telecom operators have helped businesses in taking their data and enterprise apps to the cloud, helping them access stored information or use applications from anywhere in the world. Organisations using the cloud benefit from economies of scale, and because their responsibility stops at the edge of the cloud, they don’t need to worry about how any collaboration will be routed: this is the onus of the telecom service provider.

Another advantage of the cloud is that it brings a quicker time to benefits. While most of the legacy IT infrastructure components have been built on a Capital Expenditure (CapEx) model requiring significant investments upfront, the cloud model stands on an Operating Expenditure (OpEx) model. With radical changes in an enterprise’s IT infrastructure, the cloud can help it bring new products to markets and reach new markets faster. It also reduces the total cost of ownership and builds a better user experience.

The most typical concern of businesses contemplating cloud computing adoption is security. Organisations, especially in India, need an assurance that their data and apps are safe in the cloud. They want to make sure that no unauthorised entity gets access to the assets that they do not store on-premise. Security is an added apprehension in public clouds where hardware, storage and network devices are shared with other organisations. What they then need is a secure way to connect to their cloud space and, possibly, a privatised segment within a public cloud.
Cloud Computing for Indian SMEs

Initiatives such as Make in India, Startup India and Mudra Loan Yojana have built the culture of entrepreneurship in the country. In the past few years, we have seen the initiation and growth of brands coming up with unique business ideas. Some of them have also innovated the manufacturing and delivery of conventional products and services.

As per a report published in the online edition of the Economic Times, financial technology, enterprise software/SaaS, online and social media and E-commerce ventures are the hottest current sectors for start-ups in India.

While they are ready to test new ideas and experiment with their business prowess, a priority of start-ups and small and medium enterprises (SMEs) is the efficient utilisation of the limited funds they have for initial capital investment.

When it comes to setting up their infrastructure for business operations, the cloud can help in significant cost savings. It also delivers standardisation, flexibility and business model innovation, transforming the competitive business landscape within a vertical and lowering the barriers for new entrants.

Even though the number of SMEs adopting cloud computing solutions has been growing in India, there is still a long way to go. This is because many smaller organisations are still largely unaware of cloud’s cost benefits and the full range of services that it can offer, besides being a ‘virtual data centre’.

Scaling Up Business and Reducing Associated Costs with Cloud

Efficient scalability is one of the most significant benefits the cloud delivers over an in-house data centre. Cloud computing enables an organisation to scale its resources on demand seamlessly. They get the performance and storage capacities they need, whenever they need. Because it is a pay-per-usage model, there is no need to pay for applications that are not used in a certain period.
The cloud gives an organisation the flexibility to support its customers through its growth and changes while helping to keep costs controlled.

When a business has its IT assets in the cloud, it no longer needs to pay multiple vendors in buying, installing and updating different software systems, apps, email services and servers. Also, it does not need to create backups of data in separate locations. The maintenance of IT infrastructure migrated to the cloud is the responsibility of the cloud vendor.

Businesses using cloud computing can consolidate their increasing bunch of application requirements into one primary multi-application cloud computing solution. A cloud account can include email, calendar scheduling application, document apps, presentations, spreadsheets, web conferencing services, VoIP apps, photo editing or website design tools and other software applications used by an organisation. The payment is made on a per user account basis.

Another way in which the cloud helps businesses to save costs is by enabling them to cut back on some of the hardware. The file storage, data backups and software systems that occupy much space on servers and individual computer drives can be stored on a virtual server maintained by the cloud service provider. This also frees up space for mission-critical apps that businesses want to save on their internal systems.

Cloud computing technology can also simplify the integration of IT tools, technologies and practices. This facility helps businesses to link their data, applications, software systems and the entire IT environment. They can eliminate IT silos and create a single, ubiquitous environment where enterprise apps and data can be accessed and used more seamlessly.
Lastly, cloud apps are updated regularly, and businesses do not need to spend their money and time in procuring new versions of the apps they have been using. They get the advantage of always having access to the latest features and functionalities of the apps used.

The savings that enterprises make by reducing their costs on IT infrastructure management can also be used to invest in other resources for business expansion and growth.

**Variety of Functional Benefits Afforded by Cloud**

While cost saving is a significant incentive for SMEs to adopt cloud deployments, it is also good for them to understand the different IT functions that this technology will help them with.

**Some of the important ones include:**

**Infrastructure as a Service (IaaS)**

IaaS solution brings configured software and hardware on a virtual interface. The standard services provided by IaaS encompass storage, servers and networking and security elements. Businesses can use it for website hosting, data backup and recovery, high-performance computing that involves variable and complex computations and data analytics.

IaaS is a cost-effective cloud solution that eliminates capital expenditure for on-premise hardware and data centres.

**Platform as a Service (PaaS)**

PaaS offers its subscribers an environment to build Internet apps and services – from basic to sophisticated business applications. It is a good option for software and web development companies. With PaaS, they can get all the services provided by IaaS along with an extra layer of middleware, development tools, business intelligence services and database management solutions.

With PaaS, developers can bring down the coding time and work with more flexibility and agility. It also enables collaboration between remote developers working on the same application.
Software as a Service (SaaS)

The typical examples of SaaS solutions include email services, calendars, project management tools, web conference services and regular office applications such as documents, spreadsheets and photo editors, among others.

SaaS applications can be used in any office for processes such as sales tracking, accounting, billing, performance monitoring, internal communication and management. Businesses pay only for the apps used by their employees, and they can get access to advanced software for a variety of functions without buying and administering them separately.

Disaster Recovery as a Service (DRaaS)

DRaaS employs cloud resources to secure applications against disruption and loss caused by sudden incidents including cyber attacks, power outages and physical damage to computing devices. With DRaaS, organisations can ensure business continuity because any system that goes down will be back up and running soon, and any data associated with it will also be retrieved.

Major Impediments to Adoption of Cloud Services

A survey by Tata Tele Business Services (TTBS) in April-May 2018 revealed that data privacy, shifting from legacy IT systems, the vulnerability of data to hackers, vendor lock-in concerns and anxiety over the transition from private to public technology are the top concerns of businesses that are yet to use cloud computing.

<table>
<thead>
<tr>
<th>Concern</th>
<th>Overall</th>
<th>*Leadership Team</th>
<th>*IT Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Privacy</td>
<td>44%</td>
<td>53%</td>
<td>93%</td>
</tr>
<tr>
<td>Shifting from IT Legacy systems</td>
<td>30%</td>
<td>27%</td>
<td>40%</td>
</tr>
<tr>
<td>Data vulnerable to hacks &amp; attacks</td>
<td>26%</td>
<td>33%</td>
<td>53%</td>
</tr>
<tr>
<td>Vendor lock-in</td>
<td>26%</td>
<td>33%</td>
<td>47%</td>
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<tr>
<td>Anxiety over transition from Pvt. to public technology</td>
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<td>27%</td>
<td>40%</td>
</tr>
<tr>
<td>No Concerns</td>
<td>20%</td>
<td>27%</td>
<td>20%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>Nil</td>
<td>Nil</td>
</tr>
</tbody>
</table>
Let us examine these with some more elaboration.

Privacy and security of data:

Unsurprisingly, data privacy tops the list of concerns that prevent companies from adopting cloud solutions. Of the businesses surveyed, 44% marked it as a big red flag. They feel that cloud service providers are targets of data breaches and expect companies to have advanced risk mitigation strategies and methodologies, including data encryption principles, before they migrate their enterprise data to this virtual platform.

Shifting from legacy IT systems:

Notably, 30% of the survey respondents were apprehensive about moving from the legacy IT systems that they have been using for operations and data storage. Businesses feel that they will lose control over the applications and data that move to the cloud. It’s the service provider who will decide how and where these assets are stored, how often they are backed up, how encryption is applied to them (if at all the service provider uses encryption), which of the employees get access to the data and several other aspects around the administration of enterprise applications.

Vendor lock-in

The fear of depending on a single vendor for so many critical needs also prevents many organisations from opting for cloud computing services. If the cloud service provider (CSP) fails to meet its service level agreements (SLA) or incurs a data breach, the organisation will have to rethink its relationship with it. There is also a risk of the CSP going out of business. Furthermore, the complexities and costs of switching over to a new CSP also prevent IT managers from approving of cloud solutions.

Some organisations are also concerned about compliance with their industry regulations if their data is in the cloud. Any security breach that results in non-compliance with a legal mandate will put them in trouble with fines, business reputation loss, lawsuits and even criminal penalties.
Other concerns:

Lack of their employees’ knowledge and expertise in the cloud is another impediment cited by businesses. A significant number of IT professionals also lack the skill sets required for cloud computing. Moreover, senior managers are expected to have the financial know-how on cloud computing models and negotiation abilities to get the maximum benefits from a cloud vendor’s SLA.

The fear of compromised accounts and internal threats too prevents enterprises from going for cloud solutions. What if the accounts managed by a SaaS vendor get compromised, or if some of their employees poked around with information owned by the enterprise? The planning of threats by insiders can be far more sophisticated than otherwise understood by the IT department.

The Solution: A Secure Connect to the Cloud

Security is a concern when it comes to any technology, especially for SMEs that put their limited resources at stake to build products and services, to win more customers and to progress on a path of growth while competing with more prominent players in their industry.

In terms of cloud computing, the thought of entrusting critical enterprise apps and data to a vendor’s care is naturally daunting. Nevertheless, if security and data privacy are the chief hurdles preventing businesses from adopting the cloud, they should not be.

With an increase in the number of businesses adopting cloud solutions, vendors today manage hundreds of applications for each client and are governed by laws to ensure that no data breaches occur. Any security breach can not only lead to loss of revenue and repute for the vendor but also put it in serious legal trouble. Therefore, it takes the most stringent measures for security, including control over its own employees’ rights to access any client’s data. The provisions are documented in comprehensive SLAs.

A responsible cloud vendor not only ensures high levels of security but also helps its clients in meeting the compliance requirements of their industry more effectively. Reviewing the changes in compliance and regulatory terms and abiding by them with immediate effect must be a norm.

The problem of vendor lock-in can be addressed with Containerisation – a form of virtualisation that enables the creation of lightweight partitions inside the same operating system instance.
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The portability of workloads between various service providers delivers true “market-based” multi-sourcing with the advantages of price/value competition and elasticity.

TTBS leverages advanced Internet connectivity technologies such as multiprotocol label switching (MPLS) to help businesses connect securely to the cloud. We also use a variety of tools for automated monitoring of a client’s cloud environment security profile.

We offer customised solutions that enable a Secure Connect to the cloud and help in encrypting business data. With our integrated identity and access management tools enterprises can manage their user access roles, deploy multi-attribute authentication and organise their encryption keys. The devices under Secure Connect are tightly coupled into the enterprise’s virtual IT infrastructure giving it seamless management and control on its employees’ privileges and access to critical data.

The idea is to privatise a public cloud environment by creating strong and multiple layers of security. This is exactly what Secure Connect does. It gives businesses their own, reserved section on the platform that can only be accessed by their authorised users.

Consistent penetration testing is also critical for data privacy and the security of applications. We help businesses in testing their user groups, APIs and other interfaces on applications. Cloud computing solutions by TTBS are attuned to globally recognised security standards and certifications in this domain. We also participate in efforts to continually make cloud infrastructure future ready and more secure against evolving threats.

SMEs that are still indecisive about the adoption of cloud computing should consider the new measures that make this platform safer and more robust. Security is improving by leaps and bounds, and the cloud’s strategic support in scaling small business gives them a rationale to leverage them technology.
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