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India Inc.'s need for Cloud Computing in the New Normal & Beyond

A Study Report by:
MothersonSumi INfotech & Designs Limited (MIND)

Based on interviews with senior IT leaders and cloud technology
stakeholders from key industries

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Executive Summary

The current pandemic fortified the immense value and certainty of cloud computing to the global economy. In the absence of cloud technologies like SaaS applications, tools and services, transitioning to the remote work environment and combating the unforeseen adversities of the recent pandemic would have been a distant dream. Furthermore, the power of the cloud ensured that businesses could realign their operating models swiftly to the pandemic-induced restrictions and did not disrupt the global supply chains.

These uncertain times also exposed the edge that cloud-enabled businesses had over the rest. According to us at MothersonSumi INfotech & Designs Limited (MIND), the already experienced cloud advantage will continue to spike the adoptions in 2021 and beyond owing to the accountable business value, it delivers.

Since there is no better time to focus on cloud transition and adapt to the digital economy, we initiated this research study to understand the current cloud adoption trends emerging from the Indian business sectors and how they have leveraged cloud technologies in the new normal. With the assistance of our research partner Research NXT, we connected with many IT transformation leaders and cloud custodians from Enterprises, Mid-Sized Businesses, Start-ups, ISVs from the K12 focused Education, Government, and the NPO sector in India and discovered the top trends, challenges, and thought processes that decide the cloud strategies.

The report revealed that 80% of the organisations in India are currently using some form of cloud technologies, and 62% of the remaining ventures plan to adopt it by 2021. This increase in demand for cloud computing leapfrogged due to the much faster digitization of businesses in and post the pandemic.

We are sure that these peer insights will be valuable for new cloud adopters and provide an ideal analytical platform for existing cloud users.

Top 5 Findings

80% Organisations in India are currently using some form of cloud technology.

40% Market share is commanded by AWS in India, followed by Azure and Google Cloud

33% Businesses in India use Windows-based Applications

28% Organisations use Microsoft SQL Server Database

29% Businesses identified Cost optimization as the primary cloud adoption/usage challenge

Research Methodology and Survey Demographics

Methodology

Target Business Model
Both B2B & B2C
(Across Sectors)

Geography
Pan India

Report Subject
Cloud Technology Adoption

Target Audience
- Education & K12 focused ISVs
- Government/NPOs
- Large Enterprises
- SMBs
- Startups

Data Input Mode:
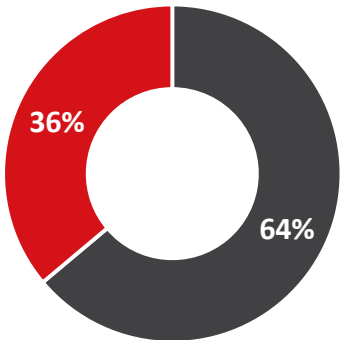- Email
- Social Media
- Web Research
- Tele channels

Research Methods:
- 80% Primary Data
- 20% Secondary Data

Expert Insights:
- 70 plus Surveys
- 4 IT Leader Interviews

Survey Demographics

Business Type

36%

64%

■ B2B ■ B2C

Job Functions

9%   3%

10%

16%

36%

10%

15%
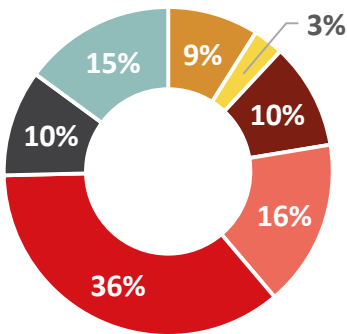
■ CIO   ■ CTO   ■ VP-IT
■ GM-IT   ■ IT Head   ■ IT Manager
■ Others

India's Evolving Cloud Computing Landscape

Cloud Computing
Adoption Trends in India

Adoption Trends -
By Current Demand and Supply Landscape

Digital transformations in the Indian business sector are fueled by three digital technologies - cloud computing, cybersecurity and big data analytics. Invaluable data insights stored and retrieved in real-time from the cloud for business decision-making are essential to meet the digital-native customer expectations. At its core, cloud infrastructure provides businesses of all sizes access to a huge repository of technical resources, the ability to scale at will, cost optimization advantage, and ensure uninterrupted business continuity.
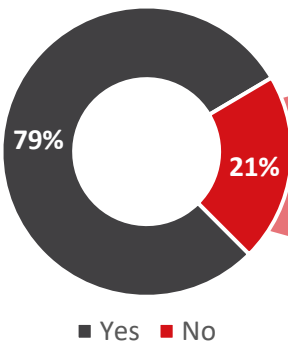
Current Usage of Cloud Computing

Adoption Forecast for 2021

79% 21% 60% 40%

■ Yes ■ No   ■ Posotive ■ Negative

Fig. 1.0   Fig. 2.0

Source: Research NXT's 2021 India Cloud Computing Survey

Top Cloud Providers in India

41% 25% 11% 23%

AWS (Amazon Web Services)   Azure   Google Cloud   Other

Fig. 3.0

Source: Research NXT's 2021 India Cloud Computing Survey

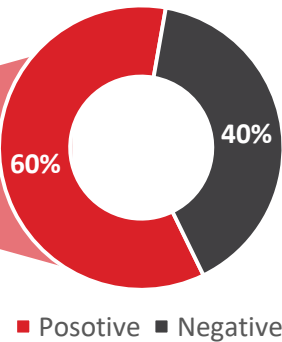**Nearly 80% of the 72 Indian organizations we surveyed currently use some form of cloud technology.**

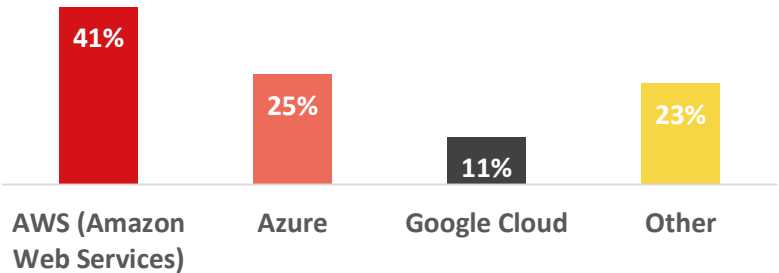**However, there is a strong indication that adoption rates will rise by 21% annually in 2021.**

AWS is by far the cloud leader in India, followed by Azure and Google Cloud.

Adoption Trends -
By Current Application Landscape

Most Indian businesses tend to prefer Windows-based applications over Linux for their cloud computing needs. This may be primarily due to the compatibility of the existing application and legacy systems.

Top 5 Cloud Applications

Application	Percentage
Widows based applications	33%
Linux based applications	24%
Off-the-shelf ERP (e.g. SAP, Oracle)	18%
Custom ERP	13%
Advanced Software Applications (eg: Analytical Tools / Gaming / Graphics)	12%

91% of surveyed businesses use a min of four cloud-based applications.

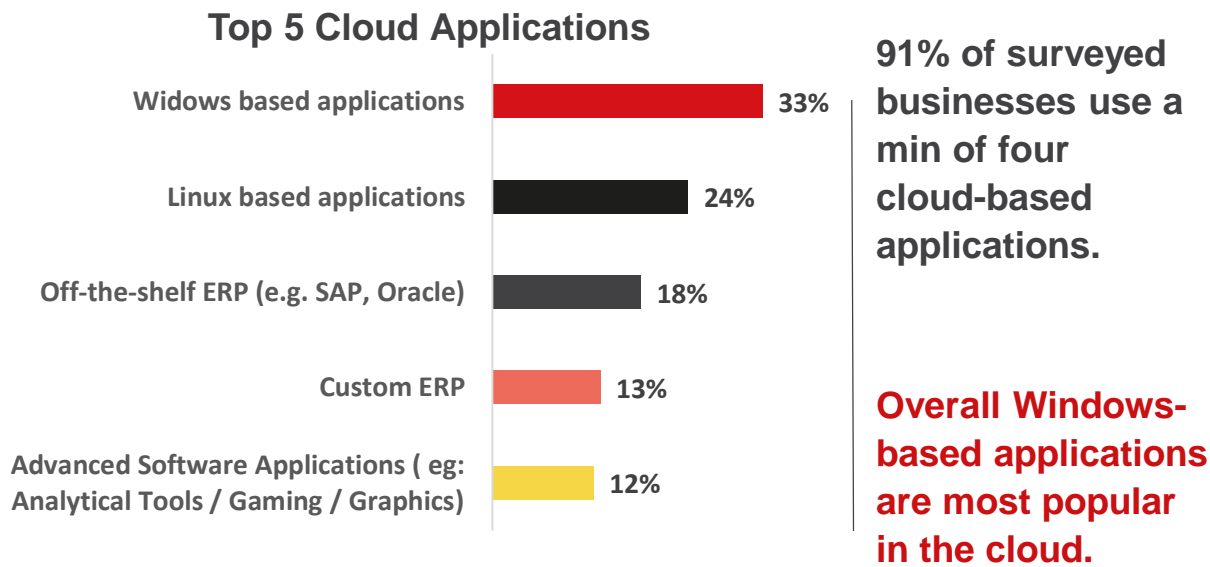**Overall Windows-based applications are most popular in the cloud.**

Fig. 4.0
Source: Research NXT's 2021 India Cloud Computing Survey

Robust network infrastructure support with a solid layer of security are the building blocks of cloud transformation.

- Arup Choudhury - CIO at Eveready Industries

View Entire Interview

Adoption Trends -

By Databases and Virtual Server Instances

Most enterprises on the cloud use either on premise database or Database-as-a-Service (DBaaS) based on their business capability. However, our survey respondents show that more than 54% use Microsoft SQL Server, followed by MySQL and Oracle.

Top Databases in the Cloud

Fig. 6.0

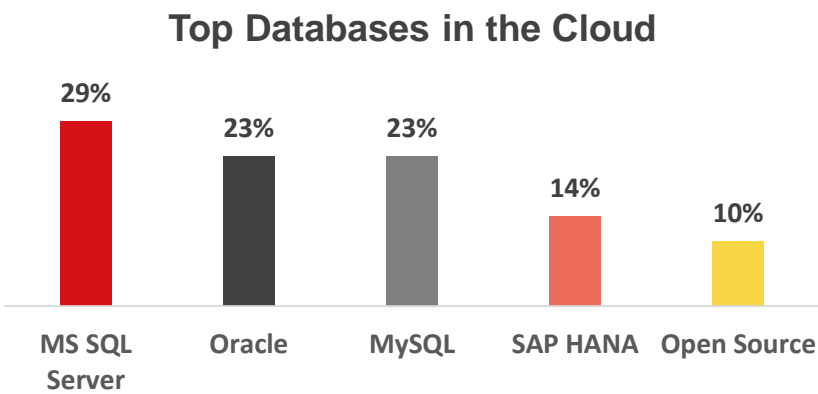*Source: Research NXT's 2021 India Cloud Computing Survey*

More than 29% of businesses use Microsoft SQL Server Database.

Average Instances (Virtual Server) Migrated

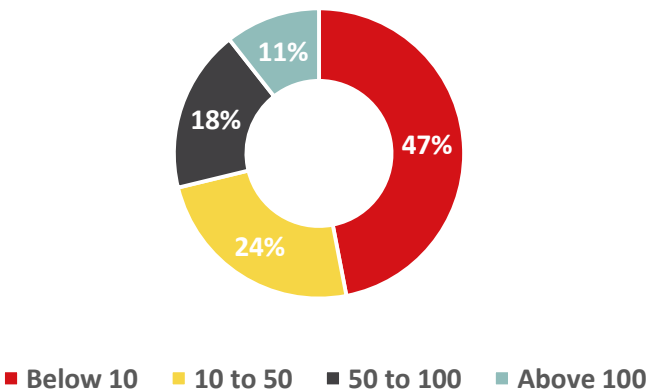■ Below 10 ■ 10 to 50 ■ 50 to 100 ■ Above 100

Fig. 7.0

Source: Research NXT's 2021 India Cloud Computing Survey

Most Indian businesses have migrated less than 10 virtual server instances to the cloud as of date.

Adoption Trends -
By Cloud Model Deployment Types

We could spot in our survey that the number of virtual server instances migrated to the cloud is mostly very low (10 or less). This is because Indian businesses invest heavily in owned IT infrastructure for their data security and in-house requirements. This can be further attributed to the fact that private and on-premise cloud usage is more in India than public cloud.

However, of late, the trend is shifting towards leveraging a hybrid cloud environment as we advance in 2021 *(32% of Research NXT 2021 Cloud Computing Survey respondents have plans for adopting a hybrid cloud setup in 2021)*. They are doing it to primarily scale their on-premises infrastructure to match the robustness of the modern-day application. Moreover, Hybrid cloud allows on-premises IT, private cloud and public clouds to interact seamlessly within optimum costs.

The manufacturing sector will see a rise in mixed IT infrastructure with some applications on the cloud and the rest on-premise.

- Abhrajit De, SVP & Head of Information Systems at Genus Power infrastructure Limited

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Adoption Trends -

By Cloud Model Deployment Types

Widely held cloud deployment types within various sectors in India

Hybrid Cloud

- 63% of Indian businesses stepped up investments in the hybrid cloud to mitigate the risk of Covid-19. Globally the investments were at 46%. *(Source: IANS India)*

- Most workloads in Indian businesses still reside on-premise and on legacy IT infrastructure. Migrating to the public cloud is challenging, and private cloud is investment heavy. Hence, a Hybrid cloud is an obvious choice offering security, scalability and best cost-effectiveness.

Public Cloud

- Small and Medium Indian businesses with fewer than 500 employees opt for Public Cloud as it offers a cost advantage, is maintenance-free, and is scalable on demand.

- Less regulated industries like manufacturing, professional services and retail tilt towards Public Cloud.

- The public cloud market in India is estimated at $4.4 billion by 2021. *(Source: Gartner)*

Private Cloud

- Large Indian enterprises (500+ employees) prefer Private clouds as they can afford robust security infrastructure and in-house maintenance teams.

- Regulated industries like BFSI, telecom, Govt. and healthcare prefer Private Cloud.

- The private cloud market in India is estimated to be $7 billion. *(Source: Zinnov Management Consulting)*

India's Cloud Computing Priorities

Sector-wise
Consumption Trends
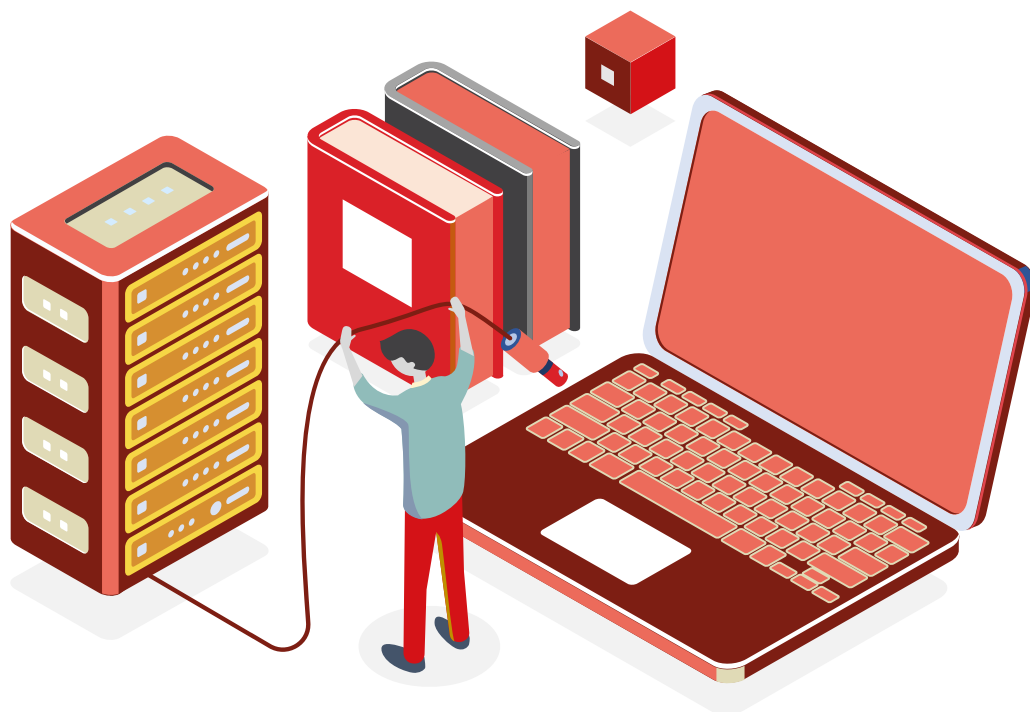
Cloud Consumption Trends -
For Education / K12 focused ISVs & EdTech

With over 4K EdTech startups in India offering app-based services on the back of cloud computing technologies, the Govt. of India is pumping in more than **INR 1 Lakh Cr** in an initiative called RISE (Revitalizing Infrastructure and Systems in Education) that focuses on leveraging modern-day technologies such as cloud computing, AI and VR within the education system.

Challenges in the Indian Education Ecosystem:

Intermittent Curriculum: The Indian education system is faced with an intermittent curriculum that is not at par with global developments. A FICCI-EY-NASSCOM study says that by 2022, 37% of the young Indians will face jobs with non-acquired skillsets.

Lack of Resources and Funding: Unavailability of quality education in remote areas, lack of investment in rural schools, and inadequate teaching staff are grave concerns.

Rudimentary Tech Usage: Need for tech enablement in the education and skilling ecosystem for seamless collaboration of teacher-student-parent and regulatory components.

How can Cloud Computing be leveraged in Education:

- Up-to-date course material could be made accessible in real-time throughout the ecosystem in the cloud for seamless curriculum upgrades.

- In addition, Cloud technology-enabled online classrooms can overcome challenges associated with fund issues associated with physical schools and teaching staff shortage.

- Finally, the cloud provides a platform for efficient administration and collaboration across the skilling ecosystem by maintaining large data sets of students' academic performances. It can also streamline admissions, teacher recruitments, parent-teacher collaboration.

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Cloud Consumption Trends -
For Government and Non-Profit Sector

The Government of India launched the GI Cloud initiative (named MeghRaj) in 2014 to embrace and leverage cloud computing in the public sector. Under this scheme, the government uses cloud computing technologies to accelerate its e-governance services while optimizing ICT spending. The National Informatics Centre, NIC, is providing Cloud services under the initiative MeghRaj.

Challenges in the Indian Government and Non-Profit Sector:

Limited Reach: With the higher population in rural areas, the govt. relies on Panchayats for governance. However, reaching such a vast ecosystem of society at scale is a major challenge.

Central Revenue Loss: The world's second-largest Rail network always faces operational monetary losses due to the low-tech.

Climate Change: Huge crop losses occur every year due to weather changes, floods, insect pests, diseases and weeds, leading to social and economic unrest in the agricultural sector.

How can Cloud Computing be leveraged in Government and Non-Profit Sector:

- The government is leveraging cloud technology to power the ePanchayat scheme to optimise communication, transaction and redressal through an internet-enabled interface.

- Cloud computing up hauled the ticketing system through unique QR checking, and Wi-Fi enabled GPS devices to maintain the safe routing of trains.

- With the introduction of a cloud-based agro portal, "Kisan Suvidha", farmers are provided with detailed information on the most relevant crops, weather predictions, soil information, and expert consultation on fertilizers, pesticides, machinery, dealers, and IPM practices.

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Cloud Consumption Trends -
For Large Enterprises

The Indian cloud computing market is expected to reach $7.1 billion by 2022 (NASSCOM). Barring the SaaS businesses, most cloud adoption in India is attributed to large enterprises. Cloud technology empowers and accelerates digital transformation, ensuring innovative service delivery and healthy competition to integrate digital technology into the business.

Challenges in the Large Enterprises:

Inability to be Agile: Large organisations in India find it difficult to adapt to enterprise-wide agile changes prompted by the dynamic market shifts due to their size.

Non-flexible SLAs: Enterprises want customised SLAs focused on security, performance and cost optimisation of the large workloads on the cloud.

Security Concerns: Indian enterprises traditionally invested heavily in owned IT infrastructure for security reasons and more control of their data. Hence, they prefer the business-critical work (the core applications) on-premise or private cloud.

How can Cloud Computing be leveraged in Large Enterprises:

- Cloud technologies enable enterprises to experiment with business ideas in an agile environment seamlessly. This enables them to stay on top of the changing market conditions with on-time insights on customers, vendors, market and regulations.

- Private Cloud environments with bespoke SLAs are still less costly, improve workforce productivity, and are operationally resilient by letting teams work from anywhere in times of crisis.

- Retaining data and keeping compliance in check is a deviation from the core business functions. Secure cloud platforms allows data security, compliance, and scalability as per business needs.

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Cloud Consumption Trends -
For Mid-Size Organisations

There is a huge untapped opportunity for the cloud in India's small & medium businesses (SMBs) segment. While most (60%) of the SMBs have adopted some form of cloud (Source: NASSCOM), not many optimally leverage cloud technologies' possibilities. Nonetheless, the pandemic induced market conditions have fast-tracked cloud adoption by SMBs.

Challenges in the Mid Size organisations:

Cost Savings: Managing costs associated with routine IT operations, applications, data, and cybersecurity is a major concern for SMBs.

Mobility: Growing businesses need to have employees productive on the go and be able to work from anywhere

Budget Restrictions: Business-critical application hosting, upgrades, and management is a tedious task that medium businesses struggle with owing to budget and resource restrictions.

Dynamic Scaling: This segment is always in a growth mode and has a dynamic need to upscale or descale technology usage based on the business needs.

How can Cloud Computing be leveraged in Mid-Size organisations:

- The public cloud makes it possible for SMBs to save costs and align applications optimally for the dynamically evolving computing needs.

- Cloud offers applications and data access from anywhere, enhancing mid-size businesses' mobile capabilities.

- Mid-sized businesses could use the public cloud with SaaS models to access multiple applications at optimal costs.

- Cloud makes dynamic scaling through elastic compute to match the right instance to the workload, thereby controlling usage costs.

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Cloud Consumption Trends -
For Start-ups

It is estimated that cloud computing can slash a startup's IT costs almost five times across all industries. Since startups thrive on faster go-to-market opportunities, they need highly flexible and cost-effective infrastructure that can scale up or down as per market requirements at will. The power of cloud computing makes it possible for startups to grow sustainably.

Challenges in the Start-ups:

Go-to-Market Speed: The fast-paced startup environment that thrives on competitive margins cannot afford slow IT setup, upgrade or downtime and require technical resources on-demand for speed of operations.

IT Infrastructure Affordability: Most startups struggle with affordability while planning the workload capabilities of the servers.

Security and Compliance: Strong cybersecurity is essential to keep pace with regulatory compliance laws and secure business and customer data.

How can Cloud Computing be leveraged in Start-ups:

- Cloud computing offers all required resources and more all in one place, improving agility and time to market.

- Cloud infrastructure as a service can provide the virtual servers at minimum investments while providing options for scaling up as the business grows. The usage storage can also be predicted and dynamically adjusted based on the business needs.

- Cloud computing simplifies this challenge while meeting compliance requirements. Cloud storage keeps the data on reliable servers with encryption and periodically creates backups to securely manage all the data no matter how complex they are.

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Top Cloud Computing Trends in India in 2021

Cloud Computing Challenges and Adoption Trends 2021

Top Cloud Computing Challenges Across sectors

Challenges are part of any growing business and are crucial to be addressed. The pandemic has made businesses realise that the shift to the cloud is inevitable for thriving in the digital age. Hence, rather than finding faults in the cloud computing technologies, the adoption challenges mentioned below are important parameters that cloud transformation leaders should consider while in their transitional phase. We identified the top 7 apprehensions and challenges that Indian organisations anticipate or have faced in their cloud adoption journey.
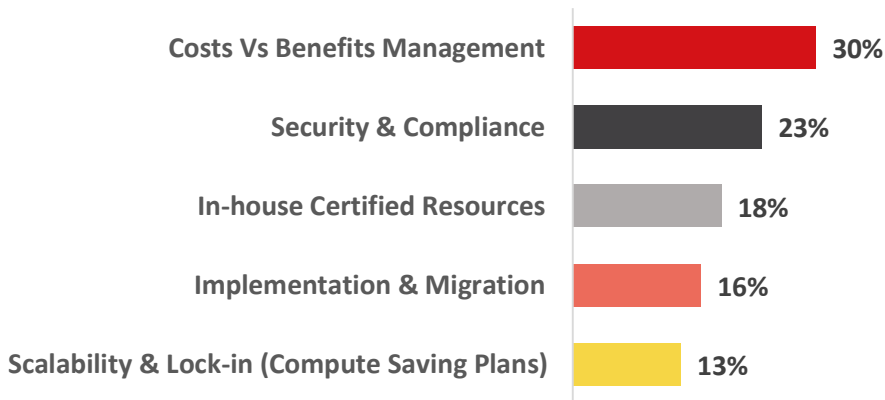
Top Cloud Computing Challenges 2021

Challenge	Percentage
Costs Vs Benefits Management	30%
Security & Compliance	23%
In-house Certified Resources	18%
Implementation & Migration	16%
Scalability & Lock-in (Compute Saving Plans)	13%

Fig. 8.0

Source: Research NXT's 2021 India Cloud Computing Survey

Dynamic scaling ability and customer data privacy needs make cost optimization and security the top two cloud adoption challenges.

The scarcity of certified In-house cloud talent and their retention is the third top cloud usage challenge.

A hybrid system that combines local and batch processing on the cloud is ideal for the manufacturing sector.

- Devang Mehta, CIO at Blue Star Diamonds

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The New Normal Implications in India

Top 5 Cloud Adoption Trends in 2021

1 **The shift towards hybrid cloud environments has grown owing to usage flexibility and cost optimization needs. (32% of Research NXT 2021 Cloud Computing Survey respondents have plans for adopting a hybrid cloud setup in 2021)**

2 **Indian SMBs with fewer than 500 employees opt for Public Cloud as it offers a cost advantage, is maintenance-free, and is scalable on demand.**

3 **The need to reduce the load on on-premise servers and free up bandwidth for optimum application performance pushes businesses to migrate to the cloud.**

4 **2021 will see businesses build multi-cloud strategies to mitigate the risks associated with a single cloud provider and reduce downtime or data loss.**

5 **24% of the surveyed organisations plan to use cloud services with embedded AI capabilities for better business decision making.**

Source: Research NXT's 2021 India Cloud Computing Survey

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Credits & Disclaimer
List of Survey Participants

- 10TV
- ABB India Limited
- Accor Hotels
- Acme Formulation Pvt. Ltd.
- Aditya Birla Group
- Agilent Technologies
- Alembic Pharmaceuticals Limited
- Ambica Steels Limited
- Apollo Tyres Limited
- Avantha Industries and Technologies
- Badve Autocomps Private Limited
- Bannari Amman Group
- Batlivala & Karani Securities India Pvt. Ltd.
- Bechtel India Private Limited
- Berger Paints India
- BFW Machine Tool
- Bhilai Engineering Corporation Limited
- Bijak
- Birla Corporation
- BlackNGreen
- Bombay Stock Exchange Limited
- Brakes India Private Limited
- Britannia Industries Limited
- Blue Star Diamonds
- Capgemini Technology Services India Limited
- Centre for Railway Information Systems
- Clariant Chemicals (India) Limited
- CRISIL
- D B Corporation
- Delux Bearings Ltd.
- Dhoot Transmission Pvt. Ltd
- DTDC Express Limited
- Empire Industries Limited
- Ethos Watch Boutiques
- Eveready Industries
- GKNM Hospital
- Gujarat Sidhee Cement

- Genus Power
- Hamdard
- HBL Power Systems
- HDFC Bank Limited
- Hikal Limited
- Indian Acrylics Limited
- Ivl Dhunseri Petrochem Industries Private Limited
- Karvy Stock Broking Limited
- Kay Jay Forgings
- Kerala State IT Mission
- Krishna Maruti Group
- Magma Fincorp Limited
- Mahindra And Mahindra Financial Services Limited
- Mazda Colours Limited
- National Informatics Centre
- National Law School of India University
- Netafim Irrigation India Private Limited
- PCF
- PeeKay Steel Castings (P) Limited
- Phillips Carbon Black Limited
- Premier Limited
- Reliance General Insurance Company Limited - Reliance Group
- S M Sehgal Foundation
- Sakthi Finance Ltd. / ABT Industeies ltd
- Serum Institute Of India Private Limited
- Shakti Pumps (India) Limited
- Sheela Foam
- Shemaroo Entertainment Limited
- Sutherland Global Services
- TVS Electronics
- Unimoni Enterprise Solution Pvt Ltd
- World Wide Fund For Nature-india

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To know more visit www.mind-infotech.com

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