



# FUTURE OF CLOUD COMPUTING AND COGNITIVE IN INDIA

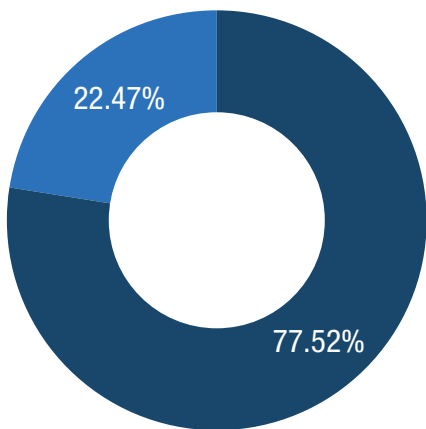
Cognitive Computing is rapidly transforming the paradigm of cloud environment across industries such as manufacturing, BFSI, retail, healthcare, e-commerce among others.

The survey was administered by IDG on behalf of IBM. The total number of respondents were 89, comprising of CIOs, Directors-IT, VP-IT and Head-IT. Majority of these respondents belonged to large organizations (250 employees or more) from various sectors such as IT/ITeS, retail, manufacturing, logistics etc.



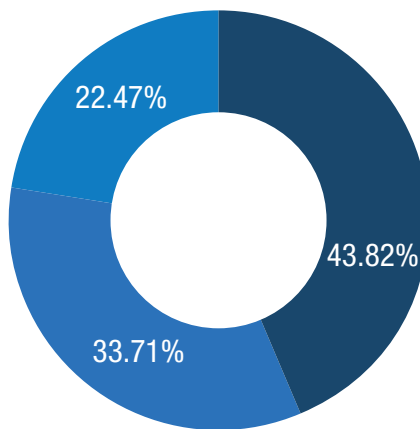
# Demographics

### Role



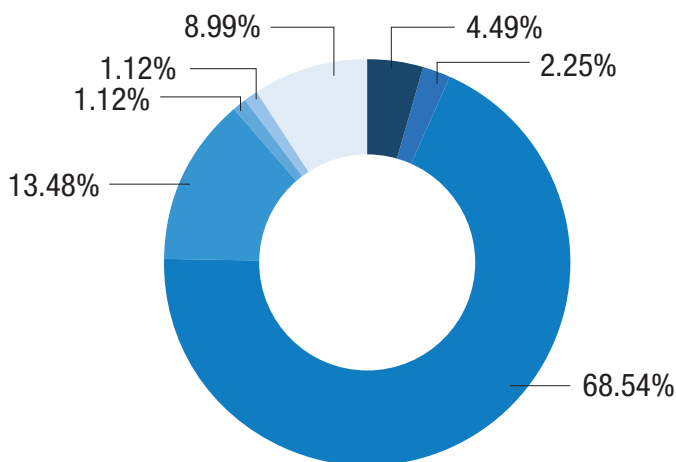
- CIO/CTO/VP's/VP-IT/Head-IT etc.
- Others

### Target Segment



- Commercial
- SMB
- Start up

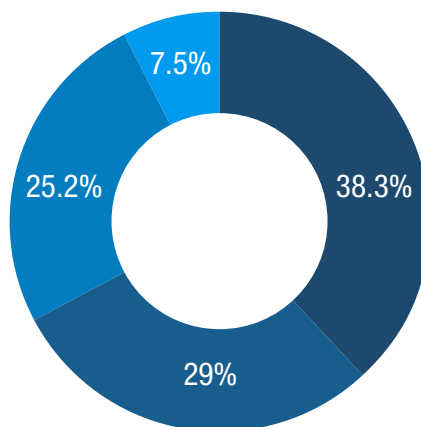
### Organization size



- Individual expert
- Industrial association
- Large company (250 employees or more)
- Medium sized company (<250 employees)
- Public Administration
- Research/academia/university
- Small Company (<50 employees)

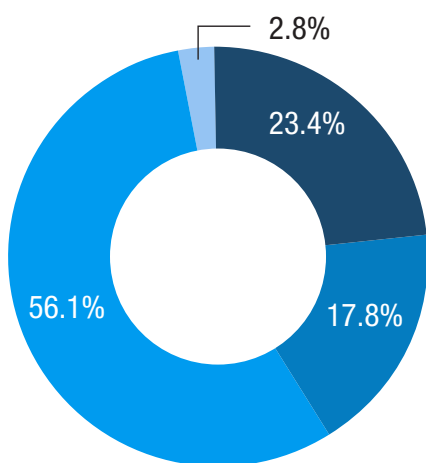
## 1. Single cloud service solution is dominant

**38.3%**  
 Respondents are currently using single cloud service solution in their organization



- One cloud service solution
- Two cloud service solution
- Three or more cloud service solution
- If three or more, please specify the number of solutions currently in use

## 2. Hybrid is here to stay

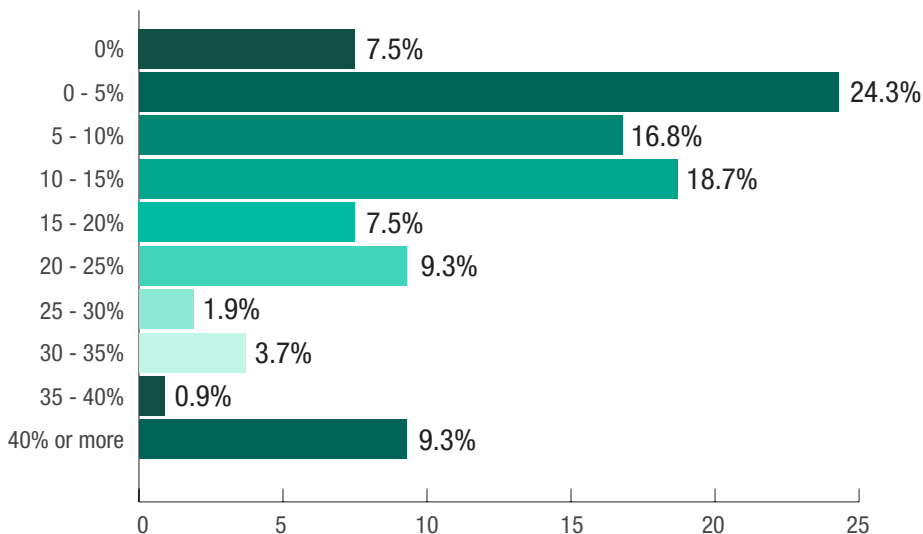


- Private Cloud
- Public Cloud
- Hybrid Cloud
- Other (please specify)

**56.1%**  
 Respondents have indicated a preference towards hybrid cloud for their cloud computing infrastructure

### 3. Cloud spend less than 5% of IT budgets

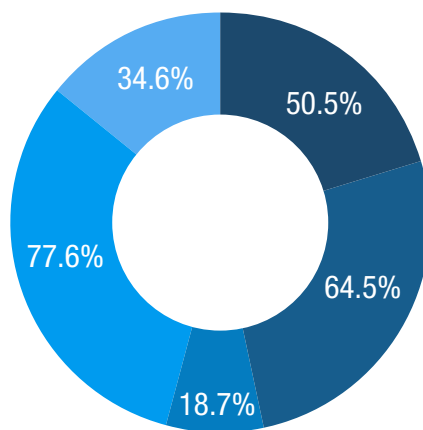
**24.3%**  
 Respondents have reported a cloud spend of less than 5%



### 4. Major drivers: Scalability and Flexibility

**77.6%**  
 is increased scalability  
 and flexibility

**64.5%**  
 shift from capital  
 expenditure to  
 operational expenditure



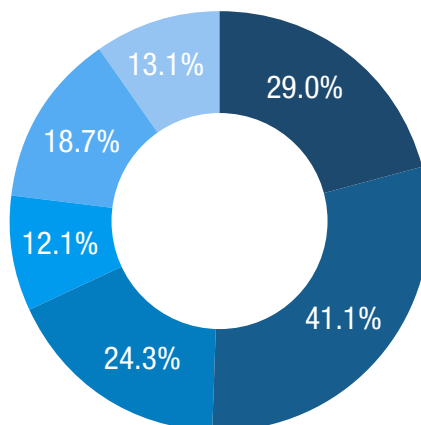
- Reduction of IT costs
- Shift from Capital Expenditure (CAPEX, e.g. investment in hardware) to Operational
- Core process executed in standard way
- Increased scalability and flexibility
- Providing new services across your organisation

## 5. Cloud transition: Are you ready?

**41.1%**  
 Respondents have foundations for core capabilities

**24.3%**  
 Respondents have a converged infrastructure stack to accommodate scalability and responsiveness

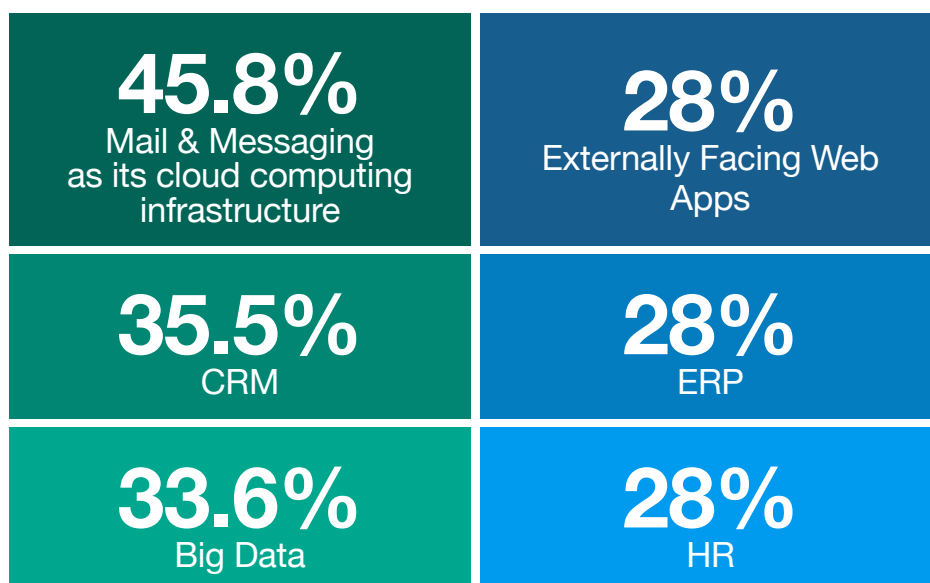
**29%**  
 No capabilities for cloud computing



- We don't have any such capabilities
- We have foundations for core capabilities such as elasticity, multi-tenancy, self-service, and chargeback
- We have a converged infrastructure stack, including predictive SLAs

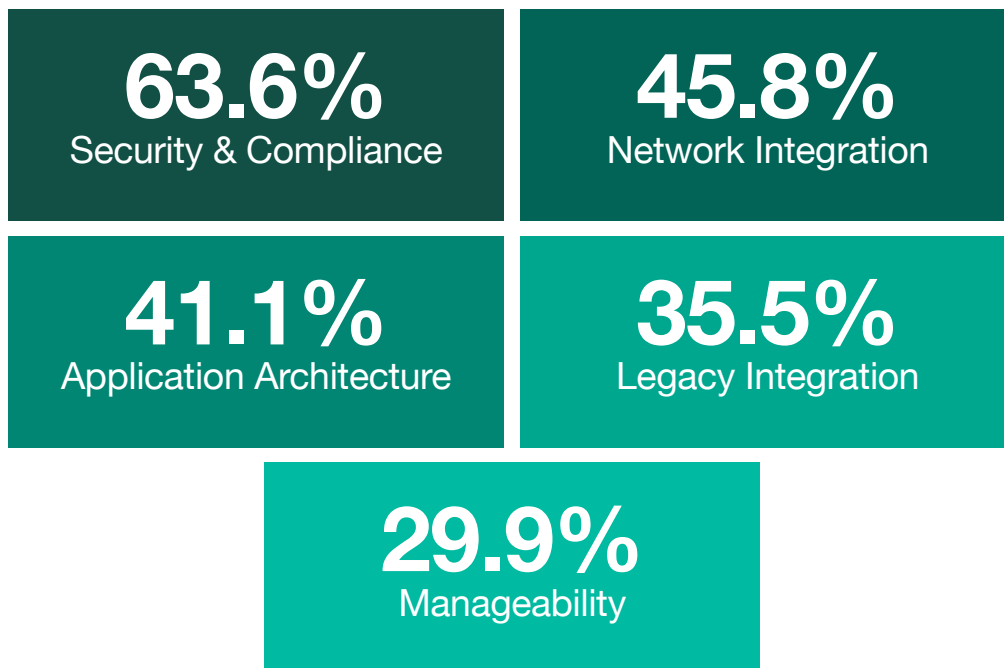
## 6. Top six workloads on public cloud

Mail and messaging, CRM and Big Data remain top workloads on public cloud



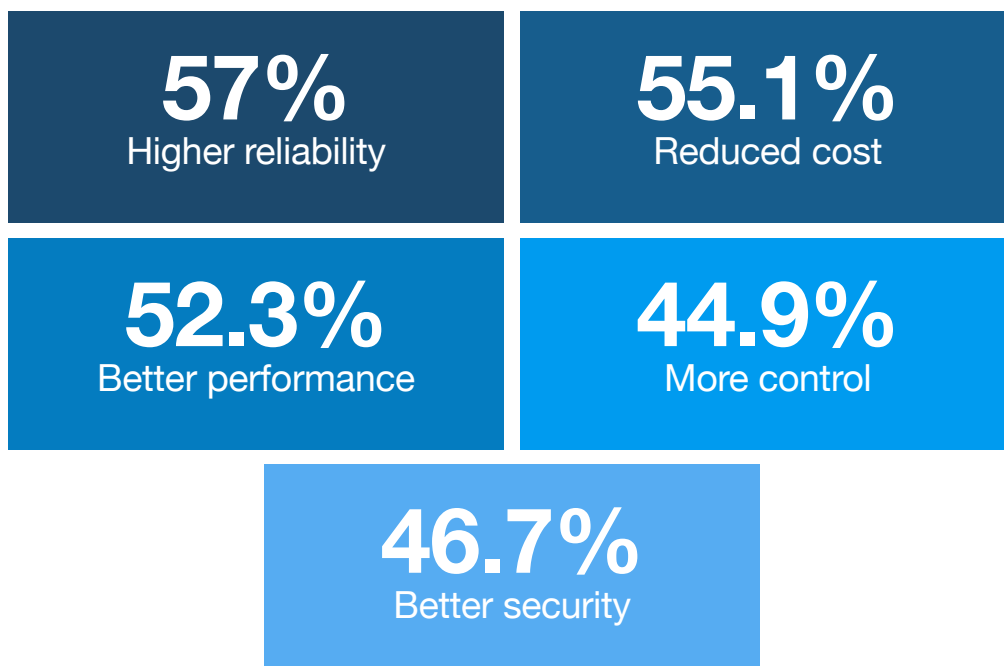
## 7. Five big challenges of hybrid strategy

Security & Compliance, Network Integration remain as top challenges



## 8. Benefits of hybrid cloud

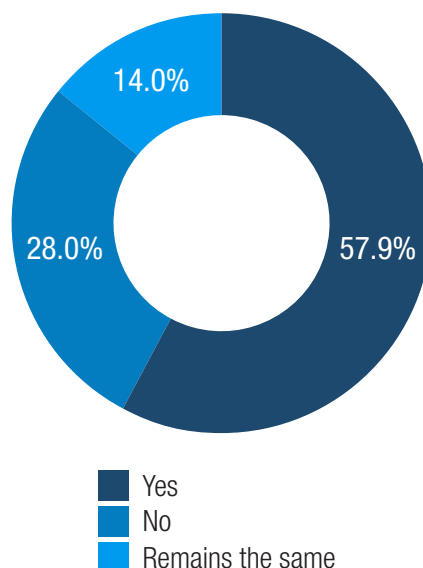
Higher reliability and reduced cost are major benefits of hybrid cloud



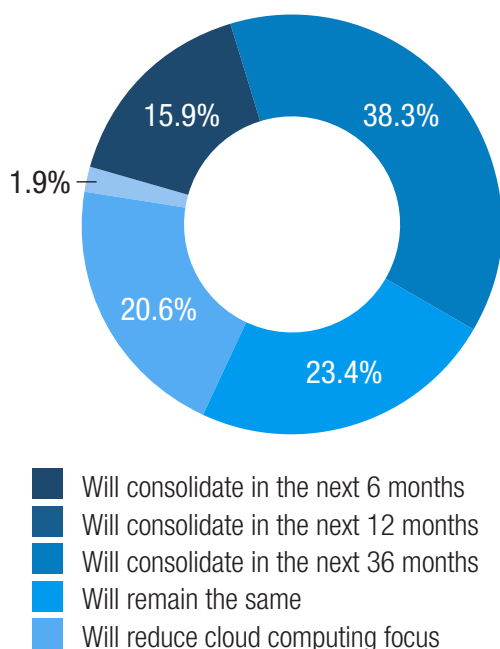
## 9. Impact on IT expenditure

Majority of the respondents found an increase in expenditure after adoption of Cloud Computing services

**57.9%**  
 Respondents have experienced an impact on overall IT Expenditure as a result of adopting cloud computing services in their organization



## 10. The road map to cloud: consolidation

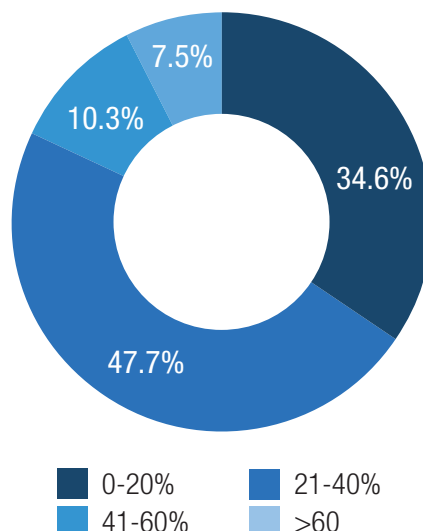


**54.2%**  
 Respondents are planning to consolidate their cloud computing in the next **12 months**

## 11. Increase in unstructured data

Majority of the respondents observed unstructured data in their organizations

**47.7%**  
 Respondents have observed unstructured data in their organizations ranges between **21%-40%**



## 12. Majority are considering to shift to cognitive

**31.1%**  
 Respondents have indicated their current cloud environment cognitive computing ready

**35.5%**  
 Respondents have indicated their current cloud environment cognitive computing not ready

**51.4%**  
 Respondents are not sure that their current cloud environment is cognitive computing ready



### 13. Key cognitive buckets for digital

Machine learning, AI & deep learning still top the list

Answer Options	Plan to Use	Experimenting	Fully Running	No. of Responses
Machine Learning	66%	28%	8%	92
Artificial Intelligence	67%	30%	5%	81
Deep Learning	74%	24%	4%	70

### 14. Investment in cognitive computing to increase

**36%**

Of respondents are planning to invest in cognitive computing over next **12 months**

**50%**

are not sure of investing in cognitive computing over next **24 months**

Answer Options	Yes	No	Maybe	No. of Responses
Next 12 months	36%	34%	30%	64
Next 24 months	30%	19%	51%	57
Next 36 months	29%	17%	55%	42

## 15. Three catalysts for cognitive on cloud

Driving operational excellence, managing data and enhancing customer experience remain on top

**57.0%**

Driving operational excellence through advanced levels of IT automation

**52.3%**

Manage massive volumes of data

**43.9%**

Enhance customer experience through real time actionable insights

**42.1%**

Better security

**39.3%**

Collaboration between enterprise units

## 16. Perceived value of cognitive in cloud infrastructure

Context based search remains highly valued

**62.2%**

Context based search

**61.7%**

Active learning and decision support

**42.1%**

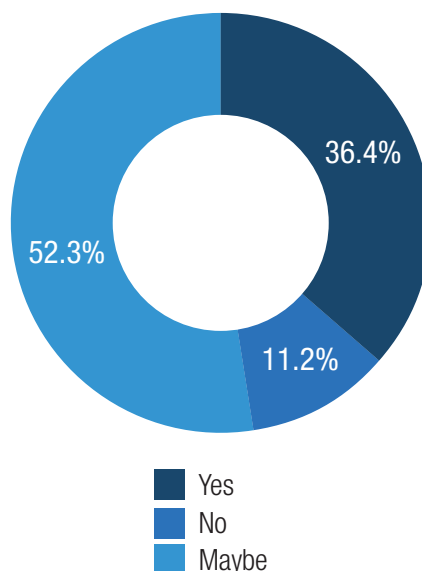
Posing questions in natural language

## 17. Big bets on cognitive

**36.4%**

Believe adopting cognitive capabilities to have critical impact on your business in next **3 years**

More than **52.3%** of respondents are hopeful of cognitive impact on their IT Infrastructure



## 18. Evaluation of cloud vendor (cognitive)

Portfolio remains the top most determinant

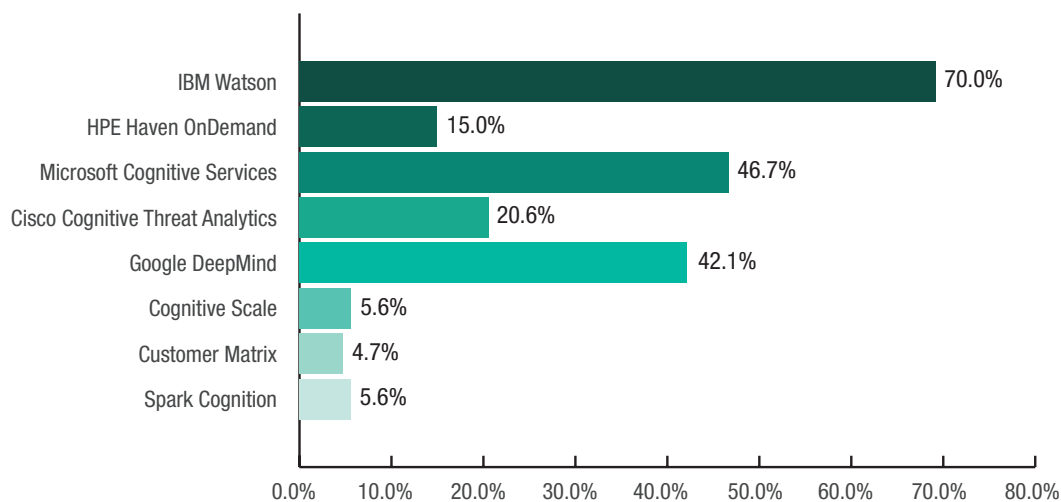
**28.0%**

Best of breed/end-to-end technology stack or portfolio

Answer Options	Responses
Best of breed/end-to-end technology stack or portfolio	28.0%
Established case studies in the relevant industry	27.1%
The vendor's ecosystem and long term go-to-market strategy	9.3%
Benchmarks and performance reports of the solutions	15.9%
Implementation capabilities and support to your IT/LOB teams	19.6%

## 19. IBM Watson awareness is significantly higher

**70%**  
of the respondents are aware of IBM Watson



## Executive Summary

As Indian enterprises and the SMBs are moving to the cloud and experimenting with different models, some of the primary workloads that have moved, by design, to the public cloud are **Mail and Messaging, CRM, Big Data, external facing Web apps, ERP and HR applications**. These have witnessed a fair amount of **success in terms of adoption**.

On the hybrid cloud strategy front, **security and compliance** still remain **top challenges**, besides network integration, application architecture and legacy integration. As disruption in business and IT is compelling, organizations have to now look beyond cloud computing as a mere shift or as a point of concern. There is a need to take serious steps towards not merely shifting to the cloud, but also consolidating the cloud roadmap and reviewing scalability of the existing infrastructure like never before. **Cognitive computing is rapidly transforming the paradigm of cloud environment across industries** such as manufacturing, BFSI, retail, healthcare, e-commerce among others. This implies that the data can be structured or unstructured, and can be optimized to derive business outcomes and maximize internal and external stakeholder experience using new age deep dive cognitive tools.

## Trends and Opportunities

Some of the **key drivers** for IT leaders looking at investments in cognitive capabilities are **driving operational excellence, managing mass volumes of data and enhancing customer experience through real-time actionable insights**.

The value that organizations believe will be derived from investing in sound cognitive computing capabilities such as **machine learning, deep learning and artificial intelligence** are in the **three broad areas of context based search, active learning and decision support** and in posing questions in natural language.

Among the **key factors** to choose a cloud vendor for cognitive investments, IT leaders actively look for the vendor's **best of breed, end-to-end technology stack, established case studies** in the relevant industry, and **implementation capabilities** to support their IT and LOB teams.

So, while there is awareness to invest, it is imperative that over the **next 12-36 months**, enterprises look at **scalability models, cloud-readiness**, benefits arising from the cloud as well as the cognitive capabilities in order to **build transformational digital businesses of the next decade**.