FUTURE OF CLOUD COMPUTING & COGNITIVE IN INDIA

How organizations are exploring cognitive on cloud

The Cognitive Era is here

As Indian enterprise and the SMB are moving and have moved to the cloud, 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, and these have witnessed fair amount of success in terms of adoption.

On the hybrid cloud strategy front, security and compliance still remain one of the top challenges besides network integration, application architecture and legacy integration. Given the disruption around us, organisations are compelled to look beyond just shifting to cloud and have to consolidate the cloud roadmap and review scalabilty 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. New age deep dive cognitive tools will allow internal and external stakeholder to optimize and derive business outcomes and maximize experience from structured or unstructured data.

Some of the key drivers for IT leaders to look at investments in cognitive capabilities are towards driving operational excellence and enhancing customer experience through real-time actionable insights.Context based search, active learning and decision support and in posing questions in natural language are the three broad areas which are the business drivers that are leading them to invest.

So, while there is awareness to invest, it is imperative that over the next 12 -36 months, enterprise looks at, with speed and alacrity, at its 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.

Executive Summary

What if your company could become the first mover advantage to outdo competition using machine learning? Have you considered adopting artificial intelligence and real analytics to grow your business substantially? Does your organization foresee the collaboration between business units becoming more cohesive?

The cognitive is becoming a reality across the enterprise world to help companies achieve the results to the above scenarios and much more. Cognitive computing on cloud is driving operational excellence through advanced levels of IT automation, enhance customer experience through real time actionable insights and cloud model to manage massive volumes of data.

The future of cloud computing and cognitive in India survey administered by IDG on behalf of IBM was conducted in March & April of 2017. A total number of 89 respondents largely comprised of CIOs, Directors-IT, VP-IT and Head-IT of Indian organizations. Majority of these respondents belonged to large organizations (250 employees or more) from various sectors such as IT/ITeS, retail, manufacturing, logistics etc.

The top three key considerations for adopting cloud computing services over past couple of years remain the same however their percentage changes as the cloud technologies attains maturity and becomes more mainstream.

In the IBM IDG survey of 2017, more than three fourth adopt cloud because its helps them increase scalability and flexibility of their IT infrastructure. The shift from Capex to Opex – in today's tight-IT budget environment for CIOs – remains the second most favorite consideration of the respondents – to the tune of 65% of respondents. And the reduction of IT Costs was a key issue for almost half of the respondents.

While almost half of the respondents said that they will be consolidating their cloud computing roadmap in the next 12 months, 40% of the respondents believe that adopting cognitive capabilities will have a critical impact on their business in the next three years.

However the survey indicates that India Inc. is warming up to cognitive as a mere 13.1% of the respondents believe that their current cloud environment is cognitive ready. However one third believe that they would be certainly investing in some sort of cognitive capabilities over the next 12 months as most of them consider driving operational excellence through IT automation as one of the main drivers for adopting cognitive capabilities in their IT infrastructure in the modern era.

The Cloud Check : Cloud computing redefined the infrastructure of the entire IT industry, creating one of the biggest disruptions in enterprise IT. Research analyst firm Gartner, predicts that by 2020, "a corporate 'no-cloud' policy will be as rare as a 'no-internet' policy is today" with almost all technology innovations being cloud-centric.
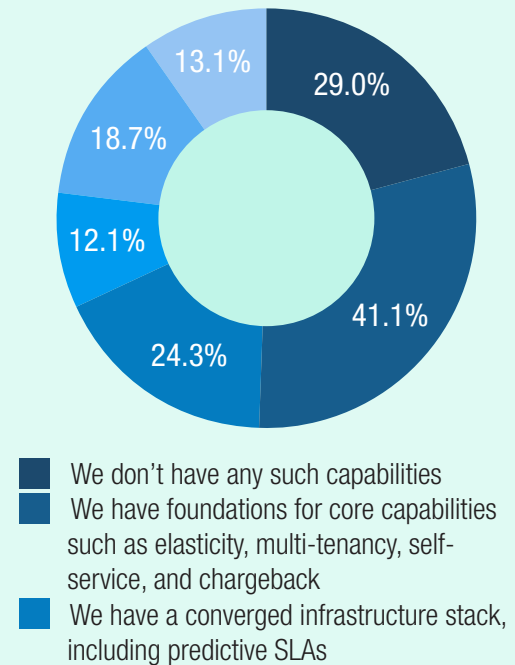
The IBM – IDG study 2017 pointed out that India Inc. is on the brink of cloud adoption at large. Cloud computing is a complete paradigm shift on how IT is bought or consumed , managed and monitored than the tradition IT infra purchase. Some verticals especially the SMBs and start-ups are hence more receptive to cloud because on no / legacy IT infra. Many enterprise to large enterprises like hospitals, manufacturing, BFSI to name a few are leveraging cloud too in India.

Almost of the companies have the foundations for core capabilities for cloud such as elasticity, multi-tenancy, self- service, and chargeback.

Infact close to one-third of the respondents to the survey are yet to move on the cloud journey from ground zero.

Figure 1

Ready for Cloud

- 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

Source: The IBM – IDG Study 2017

The Cloud Spend : Today's companies are seriously allocating IT budgets for cloud computing in different degrees depending on their business type and the related benefits. Almost two third of the respondents indicated that they have IT budgets allocated for cloud in the range of one to fifteen percent. One fourth of the respondents have a cloud budget in the range of less than 5% while many of them have more budgets in the bracket of 5 - 20%.

Almost one –tenth of the respondents to the study had a healthy budget for cloud which was more than forty percent of their overall IT budgets. These companies were mainly from the start-ups who are more adaptive and open to cloud. Also SMBs were seen to invest more IT spend on the cloud computing technologies.

More than half (around 60%) of the respondents said that they experienced an impact on overall IT expenditure as a result of adopting cloud computing services in their organization.

Figure 2

Companies are allocating budgets for cloud

The Budget for Cloud
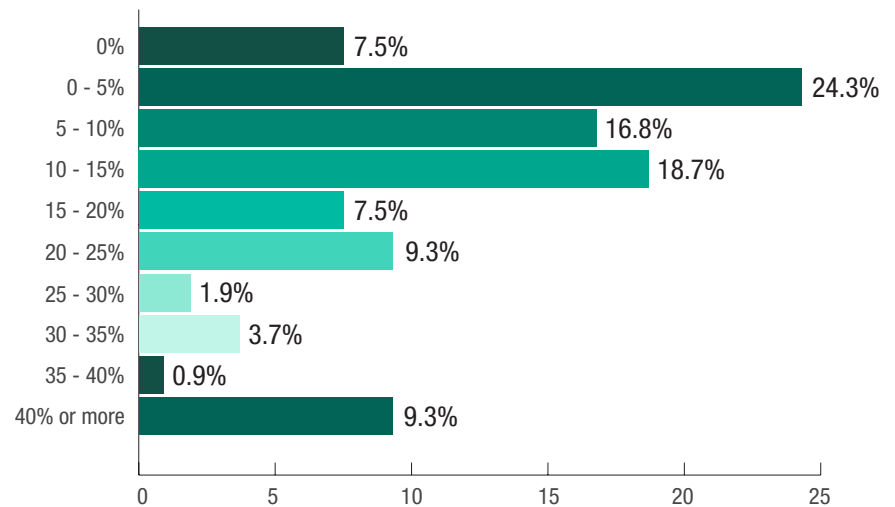
Source: The IBM – IDG Study 2017

Power of One Cloud: Cloud being a new business model and a technology shift has led to the companies exploring different cloud vendors and their services as per the business needs. Different workloads and applications require the expertise from particular cloud vendor in most cases.

Single cloud service solution is dominant across the respondents. More than one third (38.3%) of the companies surveyed indicate that they are currently using single cloud service solution in their organization.

However the companies using more than one cloud service solution is quite high. Almost half of the respondents indicated in the study that they use two or three cloud service solutions. Though integration and interoperability might be an issue sometimes across the different cloud services, the companies are exploring the 'best-fit' cloud for their businesses.
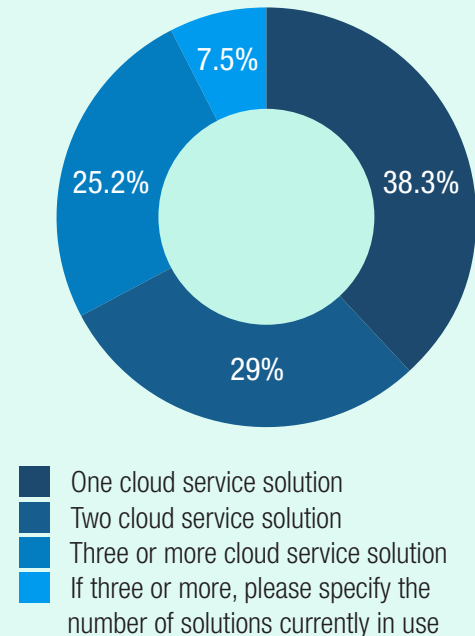
As IT gets more synced across the BUs of the companies and the available technology platforms, there will be a move in future to have all the cloud related services and solutions from a single technology vendor.

Infact, more than seven percent of the companies surveyed indicated that they use more than three solution services for cloud at present.

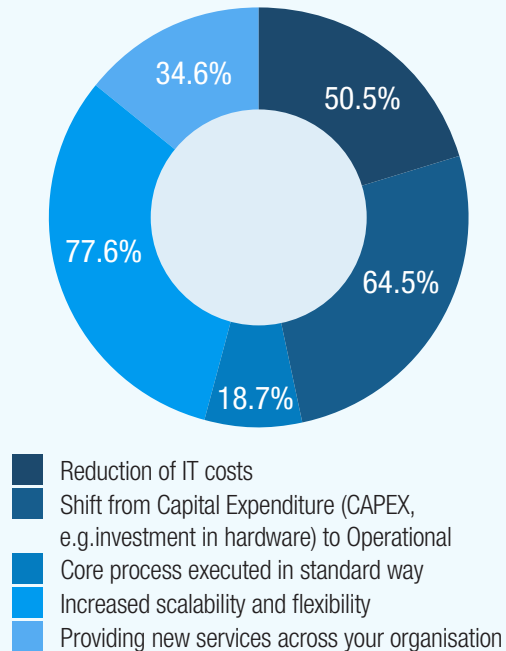**Figure 3**

Organizations exploring multiple cloud services

The Number of Clouds

7.5%
25.2%
38.3%
29%

- 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

Source: The IBM – IDG Study 2017

Figure 4

Companies indicate top reasons to go cloud

- 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

Source: The IBM – IDG Study 2017

The Catalysts: Cloud offers multiple benefits to the modern companies and their IT infrastructure. The top three drivers for the organizations to adopt cloud as per IBM IDG study was the fact that cloud helped increase the scalability and flexibility of the IT infra, the shift from hardware expense or Capex to Opex model and the reduction of IT costs.

One third of the respondents indicated that cloud was a great catalyst for their company to provide new services across your organization. Another accelerator for the companies to look at cloud was that this model helped the company's core processes to be executed in a standard manner. The on premise purchase of hardware and software solutions is more ad-hoc and non-standardized in most cases.

77.6% indicate that cloud increased scalability and flexibility
64.5% said that cloud accelerated the shift from CAPEX to OPEX
50.5% mentioned that cloud helped in the reduction of IT costs

Source: The IBM – IDG Study 2017

The Hybrid World: Public and Private cloud models are steadily increasing footprint across various industries. Mail and messaging, CRM and Big Data remain top workloads on public cloud as per The IBM-IDG Cloud Study 2017. And ERP,HR and external web facing Apps too are amongst top workloads on public cloud said the respondents.

But hybrid cloud model still remains a favorite with India Inc. More than fifty percent of the respondents have indicated a preference towards hybrid cloud for their cloud computing infrastructure. Private cloud was the next preferred cloud model (almost 23% of the respondents) and seventeen percent indicating public cloud to be good for their business.

Higher reliability and reduced cost are major benefits of hybrid cloud. Many of the respondents mentioned that hybrid offers them more control of IT infra and also this model delivers better performance.

However, on the hybrid cloud strategy front, security and compliance still remain one of the top challenges besides network integration, application architecture and legacy integration.
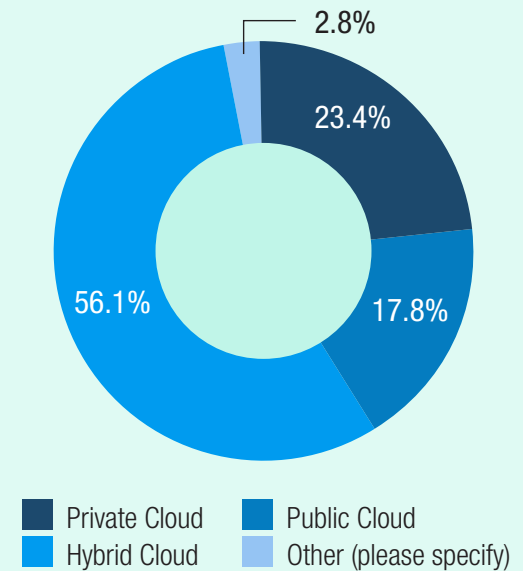
Top 5 challenges with Hybrid Cloud

63.6.% - Security and compliance
45.8% - Network Integration
41.1% - Application Architecture
35.5% - Legacy Integration
29.9% - Manageability

Source: The IBM – IDG Study 2017

Figure 5

Companies prefer hybrid over private and public

Hybrid to Stay

Private Cloud   Public Cloud
Hybrid Cloud   Other (please specify)

Source: The IBM – IDG Study 2017

Figure 6

Companies readying for cognitive on cloud

The Cognitive Roadmap

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

Source: The IBM – IDG Study 2017

The Cognitive Roadmap: The explosive growth of data continues across enterprises as the sources of data become omni-channel. The monotonous data dissemination path a decade ago has not magnified and multiplied across social, endpoints, mobiles, IoT to name a few. And most of the data received into IT infra for a company is in unstructured form. A sizeable number to the tune of 48% of the respondents from IBM IDG survey have observed that 21-40% of the overall data in their organizations is in unstructured form.

34.6 % have observed unstructured data in their organizations ranges between 0%-20%

10.3 % have observed unstructured data in their organizations ranges between 41%-60%

7.5 % have observed unstructured data in their organizations ranges above 60%

The growing data especially unstructured one needs to be streamlined into a manner that it can be utilized for real time insights and analytics. The data analyzed by technologies like cognitive computing have proven to be of immense value to the companies. Infact for a real time analysis and unparalled customer experience, cognitive on cloud promises much more value to the companies.

The huge amount of unstructured data notwithstanding: over 50% of the respondents remain unsure if they would be investing in cognitive capabilities over the next 24 months.

Cognitive on Cloud: Cognitive on cloud is becoming a reality across India Inc. mainly retail, ecommerce and largely B2C companies. Driving operational excellence, managing data and enhancing customer experience remain on top drivers for the companies to explore cognitive on cloud as per IDG – IBM survey.

Context based search remains highly valued for of cognitive in cloud infrastructure as per the study. The next two perceived value for this model remains active learning and decision support and posing questions in natural language.

5 catalysts for cognitive on cloud

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
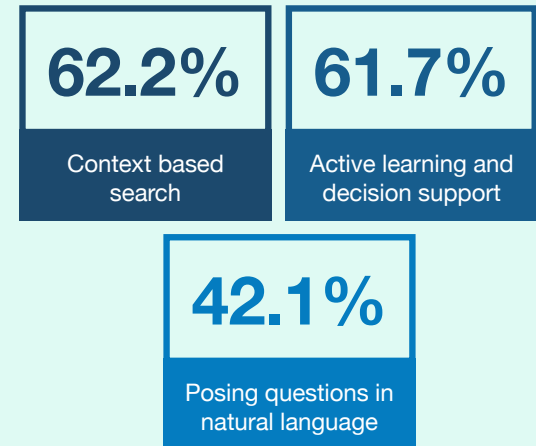**42.1%** - Better security
39.3% - Collaboration between enterprise units

Source: The IBM – IDG Study 2017

Figure 7

Companies readying for cognitive on cloud

The Value of Cognitive

62.2%
Context based search

61.7%
Active learning and decision support

42.1%
Posing questions in natural language

Source: The IBM – IDG Study 2017

Choosing Right vendor: New technology or concept like cloud, IoT, cognitive demands a well-entrenched technology vendor for the organizations to depend upon. Being one of the few new platforms, cognitive too requires the technical expertise, long term blueprint and R&D budgets of a tech provider.

Portfolio remains the top most determinant for selecting the right vendor for cognitive roadmap for companies as per IBM IDG Study. More than one fourth of the respondents said that they would prefer a cognitive vendor who encompasses best of breed, end-to-end technology stack or portfolio.

Evaluation of cloud vendor (cognitive)

28.0% - Best of breed / the end-to-end technology stack

27.1% - Established case studies in the relevant industry

19.6% - Implementation capabilities & support for IT/LOB teams

15.9% - Benchmarks and performance reports of the solutions

9.3% - The vendor's ecosystem and long term go-to-market strategy

Figure 8

Companies prefer hybrid over private and public

Watson is Popular
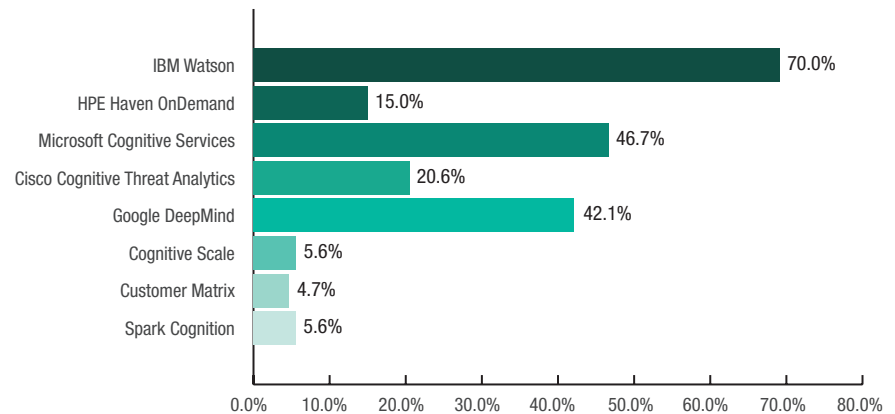
Source: The IBM – IDG Study 2017

Into the Future: The IBM – IDG study 2017 interestingly points to the cloud computing getting an accelerated push by Indian companies over the next three years. More than half of the respondents are planning to consolidate their cloud computing infrastructure in the next 12 months. Almost 24% of the respondents plan to keep the cloud computing focus as it is at present.

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.

Figure 9

Many companies to consolidate cloud over 12 months

The Consolidation Blueprint

15.9%
1.9%
38.3%
20.6%
23.4%
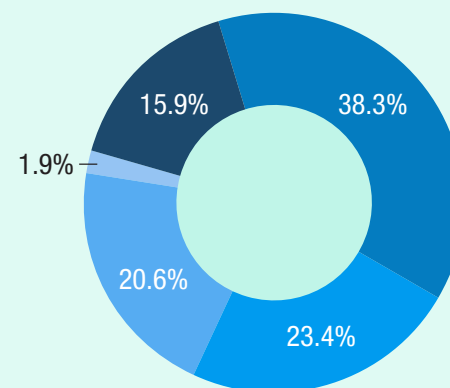
- Will consolidate in the next 6 months
- Will consolidate in the next 12 months
- Will consolidate in the next 36 months
- Will remain the same
- Will reduce cloud computing focus

Source: The IBM – IDG Study 2017

Research Methodology:

The total number of respondents for 'The Future of Cloud Computing and Cognitive in India' 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. The survey was conducted in March/April of 2017 by IDG in association with IBM.
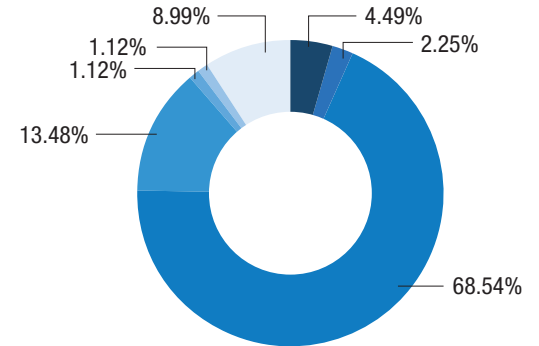
Figure 10

Target Segment

Organization Size

22.47%

43.82%

33.71%
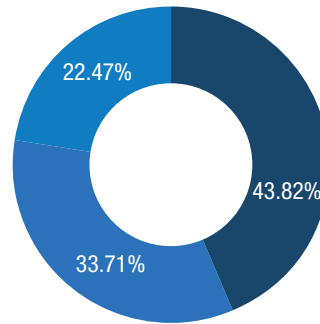
■ Commercial
■ SMB
■ Start up

8.99%

1.12%

1.12%

13.48%

4.49%

2.25%

68.54%

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

Source: The IBM – IDG Study 2017