Deconstructing disruption: Impact of future technologies

Enterprise IT trends and investments 2017
Contents

1. The upcoming quake --------------------------07

2. Major trends/ Key priorities------------------13

3. Potential future: disruptive-------------------23
technologies

4. Cyber maturity------------------------------29

Conclusion: processes in-------------------------- 31
the digital age

Survey approach and analysis-----------------------33
Foreword

CIO KLUB

As we enter the 10th year of existence of the CIO Association (CIO KLUB), it gives us immense pleasure to present the 9th annual survey report on information technology trends and enterprise IT investment trends. The CIO KLUB, an initiative of the CIO Association, is one of the largest associations of chief information officers (CIOs) in India. The enterprise IT investment survey was initiated by the CIO KLUB in 2009 in association with EY. This year we have garnered the highest ever representative response from all over India and at the same time maintained all possible confidentiality measures of the member responses, which were accessed only by the EY team for the aggregate survey analysis.

The objective of this survey is to provide insights to CIOs on technology priorities. We hope the findings of the survey are useful for CIOs and help them benchmark their organization’s technology roadmap with that of the peers, enabling them to keep their businesses ahead of times.

EY, our knowledge partner, assisted the CIO KLUB to prepare the relevant questionnaire, collate responses and analyze the responses. Being an independent professional services firm with wide experience in advisory, EY was uniquely positioned to provide this assistance. Undoubtedly, the CIO KLUB-EY LLP survey report will be a useful and reliable document with respect to Indian enterprises.

We are glad to see overwhelming participation from the KLUB members. We express our sincere thanks to all the members for their support. We also express our sincere gratitude to the team from EY LLP, which has been working on this initiative for the last three months and supporting the CIO KLUB for the last nine years.

Shirish Gariba
President CIO KLUB

Radhakrishna Pillai
Vice President CIO KLUB & Survey Coordinator
The world is at the cusp of the fourth industrial revolution. Given recent innovations in technology, it is not hard to imagine a future where consumers commute in driverless vehicles, shop by leveraging augmented reality, use conversational bots in place of mobile apps and order produce through their connected refrigerators that interact with online grocery stores. These examples do not sound like science fiction anymore as these technologies are at a prototype or early-adoption stage today. Indeed, the exponential rate at which technology is advancing suggests that this disruption in consumers’ lives is only set to increase going forward.

Are organizations leveraging disruptive technologies to reimagine their future as well? The answer is a resounding “yes.” Technology is helping companies navigate an increasingly interconnected and complex world. For instance, cognitive analytics and machine learning are enhancing companies’ ability to analyze transactional data and predict their consumers’ likely behavioral outcomes. Some e-commerce companies, for example, are leveraging new technologies to not only digitize labor-intensive activities such as cataloging and warehousing, but also predict fashion trends and buying behavior. At the same time, the Internet of Things (IoT) is improving the connectivity of devices and collection of source data. By connecting sensors, actuators and computing devices, companies are able to generate performance analytics of a product from production to consumption in real time. When deployed with blockchain technology, which offers tamper-proof ledgers, companies could reliably manage trade finance transactions across the supply chain. A few leading companies have already completed successful pilots and are now preparing for large-scale transformations of their supply chains. Indeed, technology is no longer a mere efficiency enabler but a critical differentiator.

Naturally, CIOs seem to be keen on spreading the risks while implementing these technologies by outsourcing their implementation (36%) or deploying plug-and-play solutions (27%). It is here that “Everything-as-a-Service,” or XaaS, has the potential to become an efficient tool for IT transformation.

Other key findings from the report include:

► The top three priorities identified by CIOs for their IT function are: Improving business processes, Digital transformation and reducing cost to business
► 72% of the respondents indicated that “digital transformation” is a key expectation from the IT function.
► 62% of the respondents indicated that cognitive analytics and machine learning will be of great relevance to their companies over the next two years.
► While 67% respondents identified IoT as a key investment area within the next two years, 46% specifically identified machine-learning enabled solutions as a focus.
► Cybersecurity continues to be a concern area; 68% of the large companies are implementing cutting-edge security practices to protect themselves against attacks.

We hope that the trends and insights in this report will equip CIOs to appreciate the various IT initiatives being undertaken by their peers and enable them to make better decisions regarding their own IT investments.

As we release the ninth edition of this report, we would like to acknowledge and thank the CIO KLUB for its continued support. We would also like to thank all the participating CIOs for taking the time to share their views with us.

Deconstructing disruption: Impact of future technologies

EY

Neville Dumasia
Deputy Advisory Leader, EY

Nitin Bhatt
Partner - Advisory Services and National Risk Advisory Leader, EY
Deconstructing disruption: Impact of future technologies
A. Evolution beyond MACS

Innovations have changed the way IT services are being delivered. IT has seen multiple phases of evolution, from the mainframe era, to the personal computer and client server era, to the internet era and now the more recent SMAC era. Last year’s survey revealed that companies have increased focus on “Mobile” as compared to “Social.” As a result, we saw a change in priority from S-M-A-C to M-A-C-S. One of the reasons for this change was the impact of Mobile on IT as well as business processes, allowing business activities to be carried from anywhere, even from handheld devices. Analytics, Cloud and Social were very much there on the priority list of the CIOs, with priority in that order.

The phases of evolution have also led to a paradigm shift in the role of the CIO. From a role confined to maintenance of IT infrastructure, CIOs now find themselves in the midst of improving business processes, managing digital transformation, reducing cost to business, innovating and managing the cyber security posture. Clearly, CIOs are going to play a much bigger role in business than ever before.

In our previous survey, we highlighted how SMAC technologies are a game changer for the future and can be crucial in enabling organizations to transform their business environment to optimize and make them digital. They are not simply a support instrument but have the potential to shape the future. The survey covered the most essential factors that help organizations understand the current business scenarios and take decisions accordingly. This view is supported by this year’s survey result, with 80% of the respondents indicating that they have invested in SMAC-based technologies and solutions and reaped significant benefits out of it. The key benefits are optimization of business processes (34%), change in IT landscape (25%), creation of new products and services (12%) and increased revenues (9%).

Core expectations of the IT function

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving business processes</td>
<td>83%</td>
</tr>
<tr>
<td>Digital transformation</td>
<td>72%</td>
</tr>
<tr>
<td>Reducing cost to business</td>
<td>68%</td>
</tr>
<tr>
<td>Business innovation</td>
<td>57%</td>
</tr>
<tr>
<td>Managing cyber security</td>
<td>55%</td>
</tr>
</tbody>
</table>
The convergence of Social, Mobile, Analytics and Cloud were pioneering business technologies and acted as an enabler for the next generation of technology trends. SMAC hit the scene a few years ago and was broadly applicable and highly disruptive to enterprise IT. The new waves of disruptive technologies are also broadly applicable; however, a major difference is that they are highly disruptive not only to enterprise IT, but also to business models and processes. SMAC technologies are now becoming the building blocks of a new platform for digital business initiatives. Together, these technologies can be used to create a powerful platform to provide digital business outcomes.

After the initial phase of SMAC, we might be in the second wave of digital disruption in the technology space. The following technologies have piqued the interest of CIOs:

**Internet of Things (IOT):** IOT has the potential to generate enormous volumes of data. This can enable organizations to gain better insights into consumer behavior and position themselves to drive customer satisfaction.

**Robotic process automation (RPA):** RPA can significantly reduce labor costs, along with reducing error rates, improving process flows and improving the management of repeated tasks.

**Blockchain:** Blockchain can potentially be at the heart of core banking operations by decentralizing the trust role that banks have had for several decades.

**Predictive analytics/artificial intelligence (AI):** AI can be leveraged for intelligent decision making in various processes, which could eventually lead to significant cost reductions.

**Virtual reality/augmented reality/mixed reality (VR):** Augmented and virtual reality have the potential to significantly benefit the real estate, education and healthcare sectors.

According to CIOs, cognitive analytics is currently the top technology that organizations wish to implement, with 62% of the respondents saying that cognitive analytics and machine learning will be among the top 3 key technologies of great relevance. New contenders include VR at 50% and RPA at 43%. Banking and financial services (Banking and financial services sector), however, lean toward blockchain and conversational bots at 51% and 43% respectively.

### Impact of SMAC (Social, mobile, analytics and cloud)

<table>
<thead>
<tr>
<th>Impact Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimized processes/increased efficiency</td>
<td>34%</td>
</tr>
<tr>
<td>Increased revenues</td>
<td>9%</td>
</tr>
<tr>
<td>Changed the IT landscape/approach</td>
<td>25%</td>
</tr>
<tr>
<td>Created new products/services</td>
<td>12%</td>
</tr>
<tr>
<td>Not been implemented</td>
<td>15%</td>
</tr>
<tr>
<td>Not had any visible significance/impact</td>
<td>5%</td>
</tr>
</tbody>
</table>

The table above shows the distribution of responses regarding the impact of SMAC technologies. The data indicates a significant interest in optimizing processes and increasing efficiency, with other areas such as increased revenues and changing the IT landscape also garnering considerable attention.
Digital is the need of the hour. In order to derive the benefits of disruptive technologies on the horizon, CIOs have to digitize their business processes – an avenue in which CIOs have achieved moderate success. While CIOs continue to combat the challenges associated with technologies (such as skill gaps and agility), the technologies continue to evolve thereby rendering CIOs split for choice. Hence, there is a continuous need to assess new technologies and judge their importance to the companies’ needs and business profiles. CIOs must carefully navigate their choices in consideration with the challenges they currently tackle, and thereby make the smarter choice while embracing disruption.

The existing disruptive technologies do not appear to be a destination but rather a foundation for further emerging and maturing ideas. The IoT, analytics and cyber security will play a major role for organizations in growing their businesses and building sustainable competitive advantages in years ahead. All in all, the new emerging technologies can add further value and competitive advantage for digital business initiatives. A combination of these technologies can help optimize the blend of human-machine participation and interaction within business processes for the digital future.
B. Disruptive technology: Industry expectations

As the adoption of newer technologies gains pace, enterprises are realizing the need to identify the business functions that will derive the greatest value from them. CIOs have shown the willingness to invest in new technologies and identify these technologies with immense value and potential. Our survey results highlight this trend, with 83% of the respondents saying that they wish to invest in technologies of the future.

In the current business environment, implementing a combination of technologies seems to yield much better value than implementing a single technology. For example, without the right analytics tools, it would be impossible to analyze the GBs of data churned out by IOT-linked solutions. Hence, in order to derive maximum value out of IOT, robust analytical tools are required to understand the trends and support in decision making. This is also the case with artificial intelligence and conversational systems. In fact, Gartner predicts that by 2020, there will be 26 billion IOT-connected devices. The dramatic increase in smart machines such as chat bots, virtual personal and consumer assistants will create major shifts in business practices and customer behavior. Operational excellence and improved customer experience are the two main business objectives for industries today. This is consistent with the responses in the survey, where CIOs have identified operations and customer interactions as their main focus areas; at the same time they have identified IOT, artificial intelligence and conversational systems as their key technologies to achieve this objective.

Disruptive technologies are significantly enhancing the performance potential of businesses. Aptly put, ‘Technological disruption is an abruption of operational mediocrity and an eruption of digital excellence’

-Abbas Godhrawala, Executive Director (Advisory), EY India
In order to utilize these technologies, there are two ways to go about it: outsource it to a specialist, thereby share the risk with an external vendor, or buy and manage it, develop it in-house or acquire it. Most of the respondents chose the second option, with 48% indicating that they would want to either buy the solution, develop it in-house or acquire it; 35% preferred the outsourcing option.

While we see the benefits of IOT, AI and conversational systems to achieve operational excellence and customer satisfaction, the biggest risk enterprises perceive is security. With potential GBs of raw data, security is at stake. For an organization to be able to effectively manage the risks of its ecosystem, it needs to clearly define the limits of that ecosystem. This way, the enterprise will be able to derive maximum value out of these disruptive technologies to achieve its business objective and manage its risks in an effective fashion.

### Use of disruptive technologies and ideas for different business functions at the organization

Considered by industry in one or multiple operations

<table>
<thead>
<tr>
<th>Technology</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOT</td>
<td>78%</td>
</tr>
<tr>
<td>Artificial intelligence</td>
<td>67%</td>
</tr>
<tr>
<td>Conversational system</td>
<td>63%</td>
</tr>
<tr>
<td>Robotics</td>
<td>58%</td>
</tr>
<tr>
<td>AR/VR</td>
<td>57%</td>
</tr>
<tr>
<td>Blockchain</td>
<td>48%</td>
</tr>
<tr>
<td>3D Printing</td>
<td>41%</td>
</tr>
</tbody>
</table>
A. The strengths and challenges of disruptive technology

Technology, which was once just an operational requirement, has moved to becoming the key enabler for today’s businesses. It is the most important differentiator in today’s time of online social presence and the ever-changing market.

Disruption is the latest buzzword in business today, and disruptive technologies are shaping new directions. Organizations are looking at disruptive technologies to enable new growth opportunities and to be relevant in the competitive market.

Though the disruptive technologies we see today have great potential, only a select few may ultimately be seen as value addition to businesses. We observed that 65% respondents, across sectors, rated analytics and analytics-based solutions such as machine learning to be of great relevance in the next two years. Further, the majority of respondents have great expectations on the potential of VR and RPA, at 50% and 43% respectively.

However, with the expectations around these technologies and their ever-growing relevance, they have become both the solution and the problem. With the increasing pace of technology transformation, organizations and IT functions are facing difficulties in imbibing these new technologies. Investing in the right technology to solve the right problems would be the key priority of IT functions.

Organizations are looking at becoming more efficient through technology, but, in the interim, they are facing challenges in implementing them. Respondents across sectors have been unanimous in choosing the top 3 issues that they foresee in technology implementation at their organization; “higher cost of investment,” “skill gap in maintaining technology,” and “agility in imbibing new technology.”

Top 4 issues CIOs will face in the next two years (All industries)

- Agility in imbibing new technologies: 75%
- Skill gap in maintaining current technologies: 74%
- Existing technologies are becoming obsolete: 68%
- Higher cost of investment for IT technologies: 74%
However, respondents from each sector ranked these challenges differently. Organizations in technology, media and telecommunication sectors, which have huge investments in technology and infrastructure, cited “higher cost of investment” as the major challenge. While organizations in the Banking and financial services sector cited “agility in imbibing new technology” as the key issue, organizations in the industrial, infrastructure and consumer products sector cited “higher cost of investment” and agility in imbibing new technology” as their key challenges.

We also observed that large companies (with annual revenue above INR100 billion) cited higher cost of investment” and “skill gap in maintaining technology” as a major issues while maintaining and adopting technology. This can be understood as they have a large portfolio of IT systems. For such organizations, change in technology is not only costly but also slow compared to the pace of transformation in the technology landscape.

### Top 3 issues CIOs will face in the next two years (companies with revenue > INR 100 billion)

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill gap in maintaining current technologies</td>
<td>70%</td>
</tr>
<tr>
<td>Existing technologies are becoming obsolete</td>
<td>70%</td>
</tr>
<tr>
<td>Higher cost of investment for IT technologies</td>
<td>79%</td>
</tr>
</tbody>
</table>

### Mapping of sectors from survey to report

<table>
<thead>
<tr>
<th>In Report</th>
<th>In Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking &amp; Financial services</td>
<td>Banking &amp; Financial Sector</td>
</tr>
<tr>
<td>Technology, Media &amp; Telecommunication</td>
<td>IT &amp; ITES</td>
</tr>
<tr>
<td></td>
<td>Media &amp; Entertainment</td>
</tr>
<tr>
<td></td>
<td>Telecommunications</td>
</tr>
<tr>
<td>Industrial, Infrastructure and Consumer Products</td>
<td>Automotive</td>
</tr>
<tr>
<td></td>
<td>Life Sciences</td>
</tr>
<tr>
<td></td>
<td>Retail and Consumer Products</td>
</tr>
<tr>
<td></td>
<td>Infrastructure and Real Estate</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
</tr>
<tr>
<td></td>
<td>Mining &amp; Metals</td>
</tr>
<tr>
<td></td>
<td>Power &amp; Utilities</td>
</tr>
<tr>
<td></td>
<td>Transportation &amp; Logistics</td>
</tr>
<tr>
<td></td>
<td>Hospital &amp; Leisure</td>
</tr>
<tr>
<td></td>
<td>Industrial Products</td>
</tr>
</tbody>
</table>
Medium-sized organizations (with revenue between INR0 and INR10 billion), with their light IT portfolio (annual IT budget less than or equal to 4% of total revenue for 71% respondents), stated “agility in imbibing new technology” as their biggest concern.

The commonality in trend shows that there are similar concerns for building a better business case for new and disruptive technologies. The challenge remains for CIOs to maintain current IT systems and invest in adopting and integrating new technologies. While preparing to adopt new technologies, CIOs in both large and small organizations also need to show a credible value proposition to the management for adopting new technologies.

**Top 3 issues CIOs will face in the next two years (companies with revenue < INR 50 billion)**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agility in imbibing new technologies</td>
<td>77%</td>
</tr>
<tr>
<td>Skill gap in maintaining current technologies</td>
<td>75%</td>
</tr>
<tr>
<td>Higher cost of Investment for IT technologies</td>
<td>77%</td>
</tr>
</tbody>
</table>

With technology transformation moving forward, organizations are making way to adapt their current IT systems with the new technologies relevant to their business strategies. While there is drive inside all industries, 64% respondents from various sectors stated that the most important factor to deploy disruptive technologies is “a better business case” to present to the management. While Banking and financial services sector and Industrial, infrastructure and consumer products sectors cite advancements in current technology and plug and play solutions as factors to adopt disruptive technology, Technology, media and telecommunication sector cite awareness of potential of technology as a major factor.

While CIOs are hopeful of the positive impact of technology disruption to their businesses, they are steadfast in their approach to imbibe the new possibilities. However, with ever growing challenges of current IT systems and reluctance of the management to see technology as the key driver of businesses, CIOs would continue to face difficulties in pitching for technology transformation. Thus, CIOs need to integrate the implementation of disruptive technology with their business strategy to assist them in enhancing value in the way they differentiate or lead in their markets.

**Top 3 factors important to deploy disruptive technologies (technology, media and telecommunication sector)**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A better business case</td>
<td>67%</td>
</tr>
<tr>
<td>Greater awareness of the possibilities</td>
<td>49%</td>
</tr>
<tr>
<td>Availability of the plug and play/ off-the-shelf/ easy-to-customize solutions</td>
<td>51%</td>
</tr>
</tbody>
</table>
Companies understand, view and seize disruption differently. While it materializes in the forms of technology, such as 3D printing, IOT and RPA, it is essentially a low-cost-high-efficiency enabler that helps companies get an edge in a sector. Even these aforementioned technologies are viewed with differing interpretations across industries.

Disruptive technologies do help in enabling organizations meet their business objectives. However, when boards and CIOs see an ever-changing IT landscape threatening how operations are conducted, such changes are not looked upon favorably.

A look at how organizations structure their budgets, as stated in the Industry Expectations section of this report, is reflective of this. While in a normal distribution, smaller companies expend more on their growth compared to larger firms, which favor consolidating their position/systems and security, the expected trend is not exhibited in our survey. This displays that companies are expectant of disruptive technologies but do not have high confidence in them. This is further illustrated in the manner respondents have been surveyed.

### Top 3 factors important to deploy disruptive technologies (banking and financial services sector)

- Wider variety of standard software solutions/platforms (47%)
- A better business case (56%)
- Further advancements of the technology (44%)

### Top 3 factors important to deploy disruptive technologies (industrial, infrastructure and consumer products sector)

- Wider variety of standard software solutions/platforms (43%)
- A better business case (64%)
- Further advancements of the technology (42%)

B. Corporate Imagination vs Reality

The disruption reality - how are organizations actually reacting?
Respondents from sectors such as Technology, media and telecommunication and Industrial, infrastructure and consumer products wish to implement IOT and AI as top priorities, while respondents from Banking and financial services sector wish to implement AI and conversational/cognitive systems within two years. However, a majority in Industrial, infrastructure and consumer products who had high expectations from AI (41%) did not have an actual timeline for implementation of AI at their organization (27%). Additionally, there is a disparity in how industries want to implement each technology. While CIOs across different industries expect certain processes to benefit from specific technologies, others have different expectations on how they actually implement that technology.

This shows that the priorities of CIOs differ in terms of expectation and actual implementation of new technologies.

### Industrial, infrastructure and consumer products

<table>
<thead>
<tr>
<th>Top Sector Technologies</th>
<th>Expected business process for implementation</th>
<th>Where CIOs are actually implementing it...</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR/VR</td>
<td>-</td>
<td>Talent Management</td>
</tr>
<tr>
<td>IOT</td>
<td>Operations</td>
<td>Operations</td>
</tr>
<tr>
<td>AI</td>
<td>Operations</td>
<td>-</td>
</tr>
<tr>
<td>Conversational Systems</td>
<td>Customer Integration</td>
<td>Customer Interaction</td>
</tr>
</tbody>
</table>

### Technology, media and telecommunication

<table>
<thead>
<tr>
<th>Top Sector Technologies</th>
<th>Expected business process for implementation</th>
<th>Where CIOs are actually implementing it...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blockchain</td>
<td>Operations</td>
<td>Finance Management</td>
</tr>
<tr>
<td>AI</td>
<td>Customer Interaction</td>
<td>Knowledge Management</td>
</tr>
<tr>
<td>RPA</td>
<td>Knowledge Management</td>
<td>Internal Control</td>
</tr>
</tbody>
</table>

### Banking and financial services sector

<table>
<thead>
<tr>
<th>Top Sector Technologies</th>
<th>Expected business process for implementation</th>
<th>Where CIOs are actually implementing it...</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR/VR</td>
<td>Customer Interaction</td>
<td>Customer Interaction</td>
</tr>
<tr>
<td>IOT</td>
<td>Operations</td>
<td>Operations</td>
</tr>
<tr>
<td>AI</td>
<td>Customer Interaction</td>
<td>Talent Management</td>
</tr>
</tbody>
</table>

---

This figure shows, for example, that the Banking and financial services sector has majorly voted that finance management can be done using a blockchain solution (44%). However, when implementing blockchain (also voted a top technology by Banking and financial services sector respondents), respondents felt that it majorly provides value in operations (32%). While the Technology, media and telecommunication and Industrial, infrastructure and consumer products sector respondents agree on the value finance management derives from blockchain (due to current use cases), both sectors have voted that these technologies are primarily unimportant.

In contrast, some technologies have clear use cases, such as IOT in Industrial, infrastructure and consumer products and VR in Technology, media and telecommunication. Respondents across sectors also agree with each other on the implementation of conversational systems (Banking and financial services sector and Industrial, infrastructure and consumer products), and 3D printing (Banking and financial services sector and Technology, media and telecommunication).

Multiple factors have contributed to these views. In the EY-Financial Times (FT) Outstanding Directors Exchange (ODX) International Roundtable series, conducted in October 2016, it was found that the following partly contribute to the current narrow take on disruption:

As stated in the section Strengths and Challenges, without better business cases, boards and their CIOs cannot justify the adoption of disruptive technologies with their high cost and rapid evolution. This indicates that lack of skill sets and management of costs turns disruption into a burden only tackled once older systems are obsolete. A gauge of this is the maintenance cost cited among the challenges mentioned earlier.

CIOs must explore value creation beyond the obvious returns that disruption brings. This can be done by looking at and exploring the value other businesses derive from technology. It is the risk attitude that could be embraced by CIOs to achieve the intended objective of value for businesses. Enhancing the capabilities of current systems and adopting new technologies are investments that will be required by businesses as a necessary bitter pill in the present. This is because inaction to the rapid change in the technology landscape could lead to a larger impact to business in the medium to long term.
C. The provision of services or owning the road:

With a rapidly evolving technology landscape, today’s organizations are moving toward a viable and value-based approach to IT transformation.

As challenges for adoption of disruptive technologies remain high, 36% respondents, across various sectors, stated that their organizations would like to outsource their technology transformation. Also, 27% respondents stated that their organization may look into plug and play solutions for adopting disruptive technologies.

Top 3 ways to deploy/use disruptive technologies

- **Outsource**
  (Manage as a service)
  - 35%

- **Buy solutions to utilize**
  - 24%

- **Develop in-house**
  - 19%

This shows that IT transformation is still expensive and requires a thought out value proposition for the businesses to go for it. This presents a unique opportunity for the concept of “Everything-as-a-Service (XaaS)” to be the forefront to the solution of the omnipresent challenge to manage IT cost and resources.

With Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) already in the market, XaaS brings in a new proposition of making the IT systems working in silos come together and function as a single unit. XaaS signifies the provision of connected and in sync IT systems and services typically over cloud. It supports the essence of treating every IT requirement as a service, maintaining its availability. This provides better value to the organization. XaaS can be a viable alternative for CIOs to provide value to the management than investment in core IT transformation. This may not be just to stay ahead of the curve or to improve efficiency, but also to build new capabilities and leverage the synergy of a unified IT ecosystem.

48% respondents in the survey stated that XaaS may become a cost- and time-effective solution to IT transformation.
XaaS also presents an opportunity for organizations to leverage the scale of cloud, which could be used as a platform to merge their several business systems.

The challenge that XaaS presents is for the IT functions to move away from legacy systems and upgrade to new systems that can be linked together. This may typically affect large businesses. Even though organizations have started to embrace the cloud, they are yet to embrace the value of a connected IT ecosystem. Thus, XaaS may present a great alternative to the traditional approach for IT transformation.

For medium and small business, XaaS may be a big draw as IT investment could no longer be a major challenge. Also, these firms would be able to leverage the solutions on the go with the scalability of the cloud.

In essence, organizations are currently spending a sizable value in maintaining IT infrastructure and systems. Additional capital investment in technology may require a very big push for most organizations. This is where XaaS could be a game changer and be a viable alternative to a cost and time effective method to IT transformation. So, when the change comes beckoning, CIOs have an alternative that is cost and value efficient.
Deconstructing disruption: Impact of future technologies

A. RPA/AI

As technology is changing the science fiction of yesterday to reality today, AI products are slowly entering our homes and workplaces.

Believe that machine-learning enabled solution is one of the key technologies to be implemented in their organization in the next two years.

While companies with annual revenues less than INR5 billion are still divided on the key technology of the immediate future, an overwhelming 82% respondents from companies with annual revenues greater than INR100 billion see machine learning as a game changer. This trend is majorly observed in the manufacturing, IT and banking sectors. Leading technology companies are already actively implementing AI as a crucial part of their technologies.

Tata Consultancy Services (TCS) in a recent survey found that 84% see AI as something that will be “essential” for businesses to succeed in the coming years. 50% of those surveyed by TCS believe that AI will have a “transformative” effect on their business. EY noted that 46% of survey respondents intend to incorporate AI within the next 1-2 years. These companies predominantly hail from the manufacturing and IT sectors. Interestingly, fewer than 1% of survey respondents see AI as a game changer in the telecommunications sector.

While AI systems have self-learning capabilities, robotic systems are rule based and perform exactly as programmed. RPA is expected to significantly enhance productivity through better access to information, and improve business process efficiency. These are also key drivers for the survey respondents, who identified these two areas as potential use cases for them to implement RPA in their organization. Robotics (45%) and AI (38%) are seen to be of immense value by survey respondents with regard to the operations and customer interaction functions at their organization.

However, in their journey, CIOs must ensure they avoid basic pitfalls during implementation of robotics. CIOs must:

- Consider RPA and AI as business led rather than IT led to formulate strong partnerships with the IT, cyber, security, risk, HR and other enterprise functions.
- Focus on business cases and planning before proof of concepts or pilots.
- Identify the right processes where such technology can generate value.
- Focus on enhancing manpower and freeing up capability to work on higher priority/level and less manual tasks rather than looking to reduce costs.

While companies with annual revenues less than INR5 billion are still divided on the key technology of the immediate future, an overwhelming 82% respondents from companies with annual revenues greater than INR100 billion see machine learning as a game changer. This trend is majorly observed in the manufacturing, IT and banking sectors. Leading technology companies are already actively implementing AI as a crucial part of their technologies.

Tata Consultancy Services (TCS) in a recent survey found that 84% see AI as something that will be “essential” for businesses to succeed in the coming years. 50% of those surveyed by TCS believe that AI will have a “transformative” effect on their business. EY noted that 46% of survey respondents intend to incorporate AI within the next 1-2 years. These companies predominantly hail from the manufacturing and IT sectors. Interestingly, fewer than 1% of survey respondents see AI as a game changer in the telecommunications sector.

While AI systems have self-learning capabilities, robotic systems are rule based and perform exactly as programmed. RPA is expected to significantly enhance productivity through better access to information, and improve business process efficiency. These are also key drivers for the survey respondents, who identified these two areas as potential use cases for them to implement RPA in their organization. Robotics (45%) and AI (38%) are seen to be of immense value by survey respondents with regard to the operations and customer interaction functions at their organization.

However, in their journey, CIOs must ensure they avoid basic pitfalls during implementation of robotics. CIOs must:

- Consider RPA and AI as business led rather than IT led to formulate strong partnerships with the IT, cyber, security, risk, HR and other enterprise functions.
- Focus on business cases and planning before proof of concepts or pilots.
- Identify the right processes where such technology can generate value.
- Focus on enhancing manpower and freeing up capability to work on higher priority/level and less manual tasks rather than looking to reduce costs.

B. Blockchain and Digital Solutions

Banking is an ancient concept, with the first prototype identified as early as 2000 BC in Babylon. It remained a resilient system for millennia, with one massive shift from commodities (such as gold) to fiat money. With the advent of digital technologies, and in a much shorter duration, the entire system has been turned on its head in the face of a more secure, decentralized and reliable method, the banking sector faces their existence as a consolidator in the system has come to question. This question has come to become more resounding with the sting of financial frauds and hacks that have rocked the world financial system.

Among the respondents who see immense value in blockchain technology, 51% see financial transaction management as a viable domain where it can be implemented.

Nearly every global bank is experimenting with blockchain technology. They are looking to streamline processes and cut costs. They also see blockchain technology as a facilitator in creating new business models. Blockchain has knocked on the door of Indian banks, too. In October 2016, ICICI Bank became India’s first bank to execute transactions via blockchain. A number of other banks have since followed the trend.

Is the historical monopoly over financial services by the banking system going to be disrupted by technologies like Blockchain?

However, while quick to dismiss, CIOs need to identify what a game changer blockchains is. Its value as a secure, decentralized and transparent database technology transcends the financial sector use cases. Blockchain has the capability to transform how operations are performed in a variety of sectors, and therefore CIOs must focus on its potential use cases (and work on building better business cases) to implement its benefits in their organizations in the following ways:

- Enabling distributed processing and secure storage
- Eliminating digital rights theft
- Enhancing cybersecurity across IT infrastructure
- Providing tax and regulatory benefits
- Changing consumer based price models
- Securing the IOT, among other impacts

C. IOT

Over the past few years, one of the most sought after technologies has been the IOT. We have already moved from theoretical boardroom talks to actual physical implementation of this technology. One of the questions being asked frequently today in boardrooms is, “When will the IOT really make it big?”

The IOT was seen as the biggest business opportunity of 2017 by technology firms at the Mobile World Congress. The IOT is set to become an indispensable part of consumers, businesses and governments. The majority of respondents to our survey looks at IOT as helping organizations in operations and improving efficiency (25% and 23% respectively). The manufacturing, technology and pharmaceutical sectors are riding the IOT wave.

67% Respondents stated IoT as one of the key technologies that will be implemented in their organization within the next two years

Bitcoin, a currency based on blockchain, attained a value of INR80,000 a unit in March 2017 and millions of dollars in assets are transferred each day using this currency. Yet, the understanding of this technology and its benefits still remains niche. 45% of survey respondents admitted that there is a lack of understanding of this technology and its benefits, 47% also believe that it is still an emerging technology, and 32% stated they are unable to identify applicable use cases that are relevant, cost-effective and practical to implement in their particular business.

Companies in the banking and financial services sector are most keen about the developments in blockchain technology, however see lack of expertise with regard to this technology as a key challenge to increased adoption of this technology. With such challenges, inclusion of blockchain as a mainstream technology could be a relatively slow and gradual process.
D. Analytics

Analytics has become one of the key pillars of an organization around which many other functions revolve.

The global analytics market will be worth US$18.3 billion by the end of the year according to a recent Gartner report. By the end of 2020, the market is forecast to grow to US$22.8 billion.

While in the past analytics was used to make future decisions, today businesses can identify insights to make immediate decisions.

How would your organization leverage the huge amounts of data generated by the current and new disruptive technologies?

46% Respondents would optimize current processes to improve efficiency whereas 32% respondents would use predictive analytics to forecast better.

All industries that were surveyed placed analytics as their top key technology that will be of great relevance within the next two years. Healthcare and banking are two fields where the volume of data is truly unmanageable, where accurate decisions are needed to be taken immediately. Analytics, which deal with such volumes of data at high speeds could play a huge role.

Top 3 upcoming disruptive technologies

**Banking and financial services sector**

- Cognitive analytics and machine learning: 79%
- Blockchain: 57%
- Robotic process automation (RPA): 41%

**Technology, media and telecommunication**

- Cognitive analytics and machine learning: 77%
- Conversational systems (Bots): 46%
- Virtual reality/augmented reality/mixed reality: 44%

**Industrial, infrastructure and consumer products**

- Cognitive analytics and machine learning: 59%
- Virtual reality/augmented reality/mixed reality: 54%
- Robotic process automation (RPA): 52%

---


In 2016, nearly two-thirds of the global companies in India with advanced analytics strategies achieved revenue growth of 15% or more, according to a report prepared by Forbes Insights in collaboration with EY. About 63% reported that operating margins had increased 15% or more. Companies are also continually investing in analytics, the report says. Over the next two years, more than half of the global executive respondents are planning to invest at least US$10 million in data and advanced analytics.

All sectors responded in the survey favorably that analytics is the most important technology that they wish to implement on priority, considering its foreseen benefits. It is being considered by CIOs that:

► Analytics initiatives are closely aligned with the overall business strategy and how the organization creates competitive differentiation
► Focus on recruiting, developing and retaining individuals who can serve as advanced analytics “leaders.”
► Develop and apply consistent processes and a common terminology for designing advanced analytics initiatives
► Make value measurement a key part of any advanced analytics initiative.

For organizations that are growing or have not considered it yet, CIOs must begin to design data and advanced analytics intervention approaches as early as possible.

While we normally relate analytics to areas such as security, forecasting and cognitive abilities, there is a niche sub-area; dark analytics. This area of analytics, responded by 38% of CIOs, covers insights received from non-conventional sources of data, such as cameras, location and audio. Such analysis is creating the next wave of companies and disruption, including automated driving and personalized advertisements.

Analytics is a carry-on from the age of SMAC, where, as the years progressed, it went from the third most important to the primary solution industries wished to incorporate. CIOs at this stage must embrace all aspects of it.

---

A. Resilience: Analytics and prudence

In the era of implementing a slew of disruptive technologies, what is of prime importance is to recognize the expanded attack surface that is presented and the security flaws that may be exploited. Currently, as these technologies are evolving, consistent standards are yet to be developed, with a lot of industries focusing on their development with security at the forefront of their mind. Therefore, CIOs must also take cognizance of this important scenario. Large/small scale organizations and their infrastructure are vulnerable to a wide range of risks originating from cyber threats and hazards. Hackers from around the globe are exploiting vulnerabilities to steal information and money and are developing capabilities to destroy or threaten normal operation of organizations. Almost every week, there are new stories about data breaches affecting millions of customer records and payment card data, and loss of trade secrets.

According to the survey, 54% of respondents said that managing cybersecurity is their core expectation from the IT function of the organization. Considering the dynamic ever-evolving cyber threats, it does not matter how big or small your business is, or what its annual revenue is; If you run an enterprise, you are a potential target of cybercrime. Senior management should understand that just like operational risk or financial risk, cybersecurity is a major risk, and should take an incremental approach to continuously build up and strengthen their cybersecurity posture to respond to the dynamics of the digital environment.

Last year, a majority of respondents to the CIO KLUB enterprise trends survey 2016 stated that the issue of cyber security gave most CIOs sleepless nights. Taking cognizance of this fact, most CIOs have committed up to 10% of their IT budget to cyber security. This has resulted in 34% smaller companies (revenue less than INR5 billion) taking an incremental approach for building up infrastructure and people to tackle potential cyber security threats, whereas 68% of large companies (revenue greater than INR100 billion) are taking a proactive approach and implementing cutting edge security practices to withstand ever evolving cybersecurity threats.

To achieve their desired level of cybersecurity maturity, organizations must strive for resilience to surpass the current goal CIOs have set. This can be achieved by employing the ability and agility to sense, resist and react to any threat, by:

- Understanding the cyber ecosystem to determine the risk factors of critical assets
- Switching from fail-safe to safe-to-fail
- Shifting from protection of critical infrastructure to the ability to sacrifice
- Not increasing the budget spent but spending it wisely
- Showing leadership in the road to recovery with the human element
- Asking the tougher questions to close gaps
- Creating a culture of change readiness

75% of respondents feel that employee training/awareness is the area where their organization falls behind, and conducting proper training and creating cybersecurity awareness among the employees would help them tackle cyber threats and be more cyber secure.

We can broadly conclude that to mitigate evident cybersecurity threats, organizations need to tackle this problem at the educational and administrative fronts along with the technical front.

How much of your IT budget is spent on Cyber security?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>67%</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>32%</td>
<td>10-30%</td>
</tr>
<tr>
<td>6%</td>
<td>30-50%</td>
</tr>
<tr>
<td>3%</td>
<td>&gt;50%</td>
</tr>
</tbody>
</table>
B. Cyber data analytics

For years, organizations have used whatever data was available to detect threats. Merging cyber security and big data analytics capabilities can make organizations capable of delivering automated notifications for detecting and monitoring major cyber attacks, which can enable them to respond proactively. Analytics can make a big difference in the world of cybersecurity by turning massive amounts of data into meaningful information.

Based on our survey results, 62% of the respondents stated that the most promising futuristic technology that will gain momentum in the next two years is cognitive analytics and machine learning.

It is important that CIOs understand the complex nature of modern multi-dimensional cyber security practices/cyber attacks and adopt a more proactive and comprehensive strategy.

What CIOs may need?

1. Improvement in cybersecurity analytics and intelligence from inside and outside the organization
2. Collecting, processing and analyzing all data and focusing on the people, process and technology needed to address cyber threats and attacks.

This approach to cybersecurity can be viewed as an end-to-end relationship between cyber data analytics, cybersecurity strategy and the InfoSec team’s skill set. This will make technology more scalable and far easier to use.

For example, a US-based company that develops endpoint protection software uses machine learning paired with cloud intelligence and automated responses to detect unusual activity and respond when needed.

Growing dependency on analytics increases the existential risk of data security. Cyber data analytics offers the ability to improve cyber security. However in order to get benefit from the many opportunities big data presents, organization should also keep in mind the responsibility and risk of protecting that data.

As organizations move toward disruptive technologies, security becomes a major concern. Organizations will become vulnerable to threats. Hence, it is important for organizations to adopt analytics-based technologies to continuously monitor data, identify loopholes and take preventive measure to recover from and tackle security breaches.

In essence, data is key to an organization’s agility to protect itself from the growing risk of cyber threats; it can make organizations more secure in the coming future.

“\nIn a dynamic business environment, where threats are ever evolving; Cyber Security is a pre-requisite and not a perquisite. Organizations need to become smarter in detecting and pre-empting potential attacks in order to build an active defence framework. CIO’s aiming at digitisation/automation should ensure that their cyber presence is always protected during this evolving process.”

- Burgess Cooper, Partner - Cybersecurity, EY India
Conclusion: processes in the digital age

With the arrival of multiple new and enhanced ways of tackling technical business issues, embracing advancements in technology is the key for surviving in the digital era of the future. While CIOs ponder over which technology to adopt for resolving their challenges, it is imperative to also take into consideration the operational changes that the organization will have to undergo. This involves imbibing various digitally enhanced business processes in the organization’s technology function.

In the past year, many CIOs carried the onus of undertaking process re-engineering activities, which are required for the digital transformation of an organization. This trend is evident from the fact that the majority of the respondents stated that they have either already digitized most of their critical business processes or are in the process of digitizing them within decided timelines.

**Maturity level of an organisation for digitally enhanced processes**

- Digital across all processes and platforms: 11%
- Have become digital in critical business process: 32%
- In process of being digital in critical business processes: 36%
- Evaluating the possibility of going digital for our business processes: 15%
- Not considered enterprise digital transformation: 6%
Improving business processes still remains the primary focus of the CIO, while “carrying out business innovation” and “managing cyber threats” are secondary. What is lacking is the need for a solid business case to get the nod of the board for exploring the various new disruptive trends. CIOs are now starting to open up their doors to professional services firms for leveraging their expertise in the new technologies that they would like to invest in. The expert opinions obtained by these outsourced agents are then translated to core expectations from the IT function (with appropriate backing from the CIOs).

While moving forward is the only way to success, CIOs also need to consider the increasing challenges that the digital world throw at them. As organizations take a leap forward from the SMAC space, taking a plunge into the digital mesh is the key to be more effective as a CIO. CIOs can definitely aim to achieve this by implementing state-of-the-art technologies in their ecosystem.

Of the respondents stated that “Digital transformation” was the core expectation from the IT Function.
Survey approach and analysis

EY and the CIO KLUB's enterprise IT trends and investment survey, brought to you by EY on behalf of the CIO KLUB, gauges current investment patterns, IT priorities and upcoming investment plans of organizations.

This year's survey was open for a period of three weeks in the month of March 2017. There survey saw participation of 399 respondents from various organizations across major industries. The questionnaire used in this survey was designed to gather relevant information about IT investments, initiatives, priorities and technologies domains.

This survey was conducted through a secure online tool with a specific URL that was mailed to designated members of the CIO KLUB, along with instructions for completing the survey. EY analyzed the results of the survey and used cross tabs to identify the patterns of various IT domains across specific industries, and the size and type of industry. Responses of 314 out of 399 respondents who completed the survey were considered as complete and used for the analysis. Partial responses were ignored for the purpose of this analysis.

**Sector-wise count of responses**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>7%</td>
</tr>
<tr>
<td>Industrial products</td>
<td>4%</td>
</tr>
<tr>
<td>Transportation &amp; logistics</td>
<td>4%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>1%</td>
</tr>
<tr>
<td>Media &amp; entertainment</td>
<td>4%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>25%</td>
</tr>
<tr>
<td>IT &amp; ITES</td>
<td>20%</td>
</tr>
<tr>
<td>Infrastructure and Real estate</td>
<td>6%</td>
</tr>
<tr>
<td>Education, Government, public sector and...</td>
<td>3%</td>
</tr>
<tr>
<td>Retail and consumer products</td>
<td>6%</td>
</tr>
<tr>
<td>Life sciences</td>
<td>2%</td>
</tr>
<tr>
<td>Banking &amp; financial services</td>
<td>12%</td>
</tr>
<tr>
<td>Automotive</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Revenue split of the organizations**

<table>
<thead>
<tr>
<th>Answers choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; INR 5 billion</td>
<td>34%</td>
</tr>
<tr>
<td>Between INR 5 billion to 10 billion</td>
<td>22%</td>
</tr>
<tr>
<td>Between INR 10 billion to 50 billion</td>
<td>26%</td>
</tr>
<tr>
<td>Between INR 50 billion to 100 billion</td>
<td>7%</td>
</tr>
<tr>
<td>Above INR 100 billion</td>
<td>11%</td>
</tr>
</tbody>
</table>
Deconstructing disruption: Impact of future technologies

CIOs of Indian enterprises have formed the CIO KLUB, registered as CIO Association. CIO Association (CIO KLUB) is a non-profit and largest Association of Chief Information officers in India, The CIO KLUB is governed by a Governing Body and a National Executive Council and each chapter has a managing committee to drive the CIO KLUB objective nationally.

The CIO KLUB has grown truly national with six working chapters in India's most strategic cities (Mumbai, Delhi-NCR, Bangalore, Pune, Chennai and Coimbatore). We have now grown to 1200 members across India.

The key objectives of the KLUB are to Share Experience, Enhance Knowledge, and Explore Business Solutions by leveraging the collective wisdom of large number of CIO’s who are registered members. They are senior level technology executives in the country. The current registered members represent manufacturing, BBanking and financial services sector, Service, Pharma and Healthcare, Retail, Real Estate & Construction from India leading Business houses and PSU covering wide spectrum of Indian Businesses. With such leadership as members, the CIO KLUB is uniquely positioned to be the voice of IT user community of the country. We have formed various working groups and one among them is to interact with the government to support government initiative to deploy information technology in government projects. This is a social initiative of the CIO KLUB by offering vast experienced pool of CIOs who have implemented various IT projects in private enterprises.

The CIO KLUB is unique in the sense that it provides an interactive platform for vendors, media and CIOs for exchange of best practices and ideas and formulates strategy to address common IT issues. The KLUB objective is to share and enhance knowledge and to achieve the same, the CIO KLUB organizes various knowledge sharing sessions across the country.

ThePrimary objective is to drive the business benefit to the organizations of the Member CIOs and also help CIOs in their professional growth as effective leaders. The CIO KLUB will be unique in the sense that it will be an interactive platform where the vendors, media and the CIOs together will use this platform for exchanging best practice ideas and derive strategy to address common IT issues. The KLUB also encourages entrepreneurial spirit by providing a platform for sharing and generating innovative ideas in the larger interest of the community.

We started BSE-CIO KLUB IT awards in 2015, an award to recognize and honor CIOs who have set new benchmarks and have effectively used technology to improve business objectives.

The CIO KLUB is now a part of The Global Digital Leader Alliance to share peer to peer knowledge and best practices on the Global Digital transition. CIO KLUB India now closely work with CIO NET international to achieve the KLUB objective of sharing experience and enhancing knowledge of KLUB members.

This is the only award initiated jointly by one of the largest IT user company (BSE) and India's largest IT user community organization (CIO KLUB).

For more information about the CIO KLUB, please visit

Office Address:
CIO KLUB
DataVoice Solutions Pvt. Ltd.
414, Gemstar Commercial Complex,
Ramchandra Lane Extension,
Off Link Road,
Malad (W),
Mumbai - 400064
www.cioklub.com or email us at helpdesk@cioklub.com

Team
Mr. Vilas Pujari
Secretary, CIO KLUB Governing Body Member

Mr. Raghunatha Reddy
Chairman, CIO KLUB National Executive Council

Mr. Girish KulKarni
President, CIO KLUB Bangalore Chapter

Mr. Siddharth Rao
President, CIO KLUB Chennai Chapter

Mr. O.A. Balasubramaniam
President, CIO KLUB Coimbatore Chapter

Mr. Umesh Mehta
President, CIO KLUB Delhi Chapter

Ms. Ritu Madbhavi
President, CIO KLUB Mumbai Chapter

Mr. Yogesh Zope
President, CIO KLUB Pune Chapter

About CIO Klub

CIOs of Indian enterprises have formed the CIO KLUB, registered as CIO Association. CIO Association (CIO KLUB) is a non-profit and largest Association of Chief Information officers in India, The CIO KLUB is governed by a Governing Body and a National Executive Council and each chapter has a managing committee to drive the CIO KLUB objective nationally.

The CIO KLUB has grown truly national with six working chapters in India's most strategic cities (Mumbai, Delhi-NCR, Bangalore, Pune, Chennai and Coimbatore). We have now grown to 1200 members across India.

The key objectives of the KLUB are to Share Experience, Enhance Knowledge, and Explore Business Solutions by leveraging the collective wisdom of large number of CIO’s who are registered members. They are senior level technology executives in the country. The current registered members represent manufacturing, BBanking and financial services sector, Service, Pharma and Healthcare, Retail, Real Estate & Construction from India leading Business houses and PSU covering wide spectrum of Indian Businesses. With such leadership as members, the CIO KLUB is uniquely positioned to be the voice of IT user community of the country. We have formed various working groups and one among them is to interact with the government to support government initiative to deploy information technology in government projects. This is a social initiative of the CIO KLUB by offering vast experienced pool of CIOs who have implemented various IT projects in private enterprises.

The CIO KLUB is unique in the sense that it provides an interactive platform for vendors, media and CIOs for exchange of best practices and ideas and formulates strategy to address common IT issues. The KLUB objective is to share and enhance knowledge and to achieve the same, the CIO KLUB organizes various knowledge sharing sessions across the country.

The Primary objective is to drive the business benefit to the organizations of the Member CIOs and also help CIOs in their professional growth as effective leaders. The CIO KLUB will be unique in the sense that it will be an interactive platform where the vendors, media and the CIOs together will use this platform for exchanging best practice ideas and derive strategy to address common IT issues. The KLUB also encourages entrepreneurial spirit by providing a platform for sharing and generating innovative ideas in the larger interest of the community.

We started BSE-CIO KLUB IT awards in 2015, an award to recognize and honor CIOs who have set new benchmarks and have effectively used technology to improve business objectives.

The CIO KLUB is now a part of The Global Digital Leader Alliance to share peer to peer knowledge and best practices on the Global Digital transition. CIO KLUB India now closely work with CIO NET international to achieve the KLUB objective of sharing experience and enhancing knowledge of KLUB members.

This is the only award initiated jointly by one of the largest IT user company (BSE) and India's largest IT user community organization (CIO KLUB).
About EY
EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

Ernst & Young LLP is one of the Indian client serving member firms of EYGM Limited. For more information about our organization, please visit www.ey.com/in.

Ernst & Young LLP is a Limited Liability Partnership, registered under the Limited Liability Partnership Act, 2008 in India, having its registered office at 22 Camac Street, 3rd Floor, Block C, Kolkata - 700016

© 2017 Ernst & Young LLP. Published in India. All Rights Reserved.

This publication contains information in summary form and is therefore intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. Neither Ernst & Young LLP nor any other member of the global Ernst & Young organization can accept any responsibility for loss occasioned to any person acting or refraining from action as a result of any material in this publication. On any specific matter, reference should be made to the appropriate advisor.