Industry 4.0: engaging with disruption

Enterprise IT trends and investments 2018
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Foreword

CIO KLUB

As we enter the 11th year of existence of the CIO Association (CIO KLUB), it gives us immense pleasure to present the 10th 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 significant 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 10 years.

EY

Business is now riding the wave of Industry 4.0. Last year witnessed significant strides in digital innovation and technologies including self-chatting bots such as Google Assistant, which makes calls on user’s behalf and self-driving cars. At the same time, the terrifying specter of security breaches was prevalent across the world, from severe data hacks that affect user behavior, rigging of national elections to crippling attacks on national health grids in the form of ransomware. While we acknowledge that far striding benefits are to be derived from digital innovation currently driving the industry, we also have to be on constant vigil for associated security risks which are very real and can manifest at the most inopportune time.

There has been an increased acceptance for a few specific disruptive technologies. Over the years our survey has been conducted, it was noted that the Internet of Things (IoT), Robotic Process Automation (RPA), conversational systems (bots), and Artificial Intelligence (AI) are here to stay. These technologies have been providing exciting opportunities for companies to leverage their power to drive innovative solutions to solve their business use cases. IoT has integrated web, computing and sensor technologies to provide more advance services to the end customer and business alike. While Industrial IoT (IIoT) has made its way successfully into the mainstream by integration and centralization of systems, especially in the manufacturing sector, RPA has effectively risen the bar for programming business processes at reduced costs and achieve higher output of productivity.

Survey results reflect that 86% of respondents want to invest in disruptive technologies as part of their annual IT investments. With majority of respondents highlighting their desire to “be more digital”, key findings from the report include:

<table>
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<th>86% of the respondents said they want to invest in disruptive technologies</th>
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<td>74% of the respondents said they required a better commercial and value added business case as their top reason for evaluating deployment of disruptive technologies at their organization</td>
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<td>42% of the respondents indicated their desire to achieve the digital dream through partnering with a technical organization</td>
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<td>42% said they are willing to invest more than 10% of their annual IT budget on cyber security</td>
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We hope that the trends and insights in this report will equip respondents 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 tenth 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 respondents for taking the time to share their views with us.

Nitin Bhatt
Risk Advisory Leader – India, EY LLP
The Driving Factor

Last year, we highlighted digital as the need of the hour and in order to derive the benefits of disruptive technologies respondents have to digitize their business process. This view has resonated with the respondents and is clearly reflected in this year’s survey results. We asked respondents what are the key priorities for their organization and majority of participants identified ‘Be more digital’ as their top priority.

We are experiencing an era of rapid changes wherein businesses have to make complex decisions within an alarmingly short period of time. The biggest challenge faced by the businesses is understanding their choices with a wide range of disruptive technologies and new business models available to choose from. Respondents faced this challenge last year as well as this year and shall continue to face it in the future. Respondents address this conundrum of identifying the right technology for their business by considering certain factors they think are critical to identifying and deploying disruptive technologies. It is interesting to see that the most significant decision making factor for respondents continues to remain the same - a better business case - which means strategic decision making aimed at reducing cost and time and improving profit and efficiency. In fact, we have seen an increase in this regard; from 64% last year (202 out of 314) to 74% (190 out of 258).

Whether it is investing in a new business intelligence application or obtain cloud-based storage solution, a persuasive business case is essential. While the investment costs might be high, one has to be able to focus on long-term benefits of the investment.

And making these decisions would be the key in their bid to align themselves with the digitization trend sweeping across the world. The need of investment may be justified by following key factors - keeping up with the change, showcasing proof-of-concept (POCs), alignment of investments with business and IT strategy, and a smooth implementation.

While it has been established that disruptive technology deployment has been one of the most effective ways of gaining competitive advantage, increasing efficiency, and driving business growth, organizations face the difficult challenge of embracing emerging trends without leaving vulnerable cracks addressed. In the light of persistent high profile data breaches, security has emerged as one of the top factors for IT leaders around the world. This is consistent with the thinking of the respondents wherein 61% have chosen privacy and security considerations as their second biggest factor that influences their decision to invest in a disruptive technology.

While deploying disruptive technologies can greatly benefit the enterprise, it also creates fresh opportunities for the hacking community. Security is important for all the organizations and any internal decision that could jeopardize it cannot be made lightly. On the flip side, Businesses have recognized that risk taking is an integral part of progress and agility may suffer if security is taken at the center of all decisions. The challenge is to figure out exactly what levels of security is needed. Reconciling security, business and privacy in a single context of disruptive technologies might be a painful activity for an enterprise, but is required to provide greater gains in a compliant and secure manner.
Strategies to drive growth

In order to embrace disruptive technologies respondents have two choices -

- Building the solution in-house: Hire and or train, undertake solution development
- Outsource: Capitalize on the expertise of an external specialist

In the 2018 survey, we asked respondents on the approach they would embark to develop/utilize disruptive technologies; 64% of the respondents indicated that they either outsource or buy it from the market instead of developing it in-house which was chosen by only 20%. This has been a consistent trend buy it from the market instead of developing it in-house which was chosen by only 20%. This has been a consistent trend with the respondents as survey results of 2017 too showed a similar story, where it was highlighted that 59% of respondents choose the right technology for their organization.

For a non-specialist, innovation can be time consuming and laborious process. Venturing into the unknown without being equipped with necessary skills instills a fear of failure in the so-called innovation team. Couple that with the time factor and constant pressure of achieving periodic revenue targets, this approach is destined for failure in context of meeting the innovation agenda with significant loss of time, money and effort and not being close to the solution form originally envisaged by the enterprise.

The option of relying on startups to enable innovation through technology provides the enterprise a wide-variety of possibilities in terms of skill development and new use cases. Start-ups are characterized by their speed and innovation. As a result, it is set to become a mainstream practice to acquire disruptive technologies by partnering with new age technology startups. Instead of trying to innovate in-house, it can turn out to be a strategic investment in the interest of companies’ long-term business vision. The mixture of financial and practical benefits, coupled with economic pressure and disruptive technology, makes outsourcing innovation a persuasive new option for industries.

In today’s world disruptive technologies have created a new realm of opportunities. With rising opportunities new risks have emerged which are being sized up by organization and societies alike. As part of the survey we asked respondents about the future and use cases for technologies such as Artificial Intelligence (AI), Machine Learning (ML), Robotics Process Automation (RPA) and most were optimistic about their future but wary of their risks.

Most organizations grow logarithmically but the technology is changing exponentially. This is leading to may organization re-defining their technology strategy to be more cautious and choose the right technology for their organization.

With the current IT setups running in silos achieving a value addition of new/disruptive technologies across the organization is becoming increasingly difficult. With limited value addition and a high cost and effort of transforming IT infrastructure and business processes the business case for disruptive technologies is becoming increasingly bleak in today’s context.

Technology transformation has become increasingly silo-ed and entity driven due to increasing focus on maintaining minimum disruption to the business operations, technology transformation has become increasingly silo-ed and entity driven. Investment in technology is primarily driven by specific business objectives. The value additions of these technologies and synergy with other technology and infrastructure, from an organizational standpoint, are being looked at post implementation. When we asked respondents about top four key issues organizations may face in the next two years, they shared “Higher cost of investing in disruptive technologies” as the most significant issue.

Additionally, when we asked respondents about the top factors that are important for deploying disruptive technologies, the respondents stated that “a better business case” and “existing industry use cases” would be the top ones. This emphasizes the current predicament with the senior management on how they view disruptive technologies.

As per the growing trend in their relevant industries the organizations have set their priority on making their systems and processes digital.
Every business problem is going to find a solution in emerging technology. These solutions will be refined, combined, compressed and moulded iteratively so long as these problems and opportunities exist. We are at a stage where we are going to disrupt ‘disruption’.

Abbas Godhrawala - Associate Partner - Advisory Services
As we have seen from the analysis described in this report so far, CIOs and IT heads have their own unique take on the implementation of disruptive technologies. Whereas, survey results indicate that companies wish to implement their innovative solutions, common challenges, such as skill gaps and use cases, were identified across the years the survey was conducted. It is reassuring, however, that the prohibitive concerns, like higher investment costs have been steadily decreasing and the priority for adoption of particular technologies (as follows in the report) is increasing.

As part of the survey, we asked the respondents for key priorities in their organization and a majority of CIOs responded that they should embrace digital, followed by being cyber secure and compliant to regulatory requirements.

Respondents have overall committed to 5% of their budget to investment in disruptive technologies. Despite the apparent budget limitation, the main concern lies more towards building digital technologies into the core strategy by hiring the right people and creating a more digitally practiced organization.

Our survey shows that respondents prioritize their top four challenges as:

1. “Agility in imbibing new technologies”
2. “Skill gap in maintaining current technologies”
3. “Higher cost of investment for IT technologies”
4. “Existing technologies are becoming obsolete”

Technologies such as IoT and AI are opening doors for companies to diversify their service offerings. In our survey, 60% of the respondents want Analytics and machine learning to be in alignment with their organization’s strategic plan.

However, the sole outlier is in manufacturing sector where 65% of the sector respondents chose robotic process automation as their top priority and would invest up to 10% of the budget in disruptive technologies such as robotic process automation, virtual reality, blockchain, internet of things, and so on.
Privacy is regularly in sharp focus due to high-profile data breaches occurring nearly every year; A social media company in 2018 (indiscriminate sharing with third parties without consent or monitoring controls), A global web service provider in 2016 (account names and password leaks), A large department store retailer in 2014 (debit and credit card number breach), among many others. These cases have resulted in dilution of stock value and huge administrative penalties for these companies, increased privacy awareness among stakeholders, and hastened introduction of data protection regulations across the world. This has brought privacy to the forefront of companies’ priorities.

### Top 4 key issues which organization may face in the next 2 years

<table>
<thead>
<tr>
<th>2018</th>
<th>2017</th>
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<tr>
<td>78%</td>
<td>73%</td>
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<tr>
<td>76%</td>
<td>69%</td>
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<td>65%</td>
<td>67%</td>
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<td>75%</td>
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- Agility in imbibing new technologies
- Skill gap in maintaining current technologies
- Existing technologies are becoming obsolete
- Higher cost of investment for IT technologies

Companies have become smarter about technology over the years, but the challenges of integrating new technology into the enterprise have become more difficult. Case in point - last year, the survey indicated that the biggest challenge was of high investment cost (75%) which has fallen three places this year to (71%). Agility of adoption has swapped places going from third (73%) to first at 78% while respondents identified people (skill gap for current technologies) as their second challenge in 2018 at 78% and in 2017 at 74%.

Overall, new disruptive technologies and tools are continually entering the marketplace, and “digital” has grown from a replacement to include an expansive approach where technology is making its mark on customers and culture.

### B Privacy issues with disruptive technologies

Personal information is the lifeblood of businesses, making privacy a corporate responsibility. Companies collect, store, and use details every day that uniquely identify a person, such as name and email address, or a Bank account number. The processing of such information is regulated by laws differing in scope and rigor across the globe. With an increasing number of data leaks being reported on a daily basis, data protection and privacy is beginning to take prime focus for a lot of organizations.

As of 25 May 2018, the General Data Protection Regulation (GDPR) takes effect across the European Economic Area (EEA). It is the most comprehensive data protection law in the world, building on specialized controls such as affording data subjects the right to be forgotten under certain circumstances, and embedding privacy-by-design in the fabric of organizational processes.

While similar stringent laws exist in Singapore, Canada, South Africa, Argentina, Uruguay and other countries, a guidance document is enshrined in the Indian IT Act (Amendment) 2008. There is growing clamor for the development of a comprehensive privacy regulation. These laws come with data sharing restrictions across borders causing significant investment on the part of overseas companies to comply with these requirements. In India, due to major developments such as Aadhaar and growing awareness among citizens, the Supreme Court has provided a ruling stating privacy as a fundamental right. A draft data protection law is gaining momentum for approval in the Parliament. The proposed law endeavors to emulate some of the stricter regulations in place globally. Enforcement of such a regulation in India will place significant stress on organizations to restructure the way personal information is used and processed. At the same time, it will open avenues to conduct business with companies in countries prescribing stringent personal data transfer requirements.
Readiness

However, when it comes to meeting stringent regulatory requirements, like the requirements for GDPR (which attracts such hefty penalties as 4% of global turnover or 20 million Euros, whichever is greater), 40% of respondents have stated they are still aligning their organizations and technologies to meet compliance. This contrasts with another 32% of respondents who have met compliance while 15% state they have no visibility whatsoever of their organization’s responsibilities under GDPR.

<table>
<thead>
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<th>Percentage</th>
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<td>32%</td>
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<td>10%</td>
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<td>15%</td>
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How prepared is your organization for data protection laws

Majority of companies are still in the process of recognizing the importance of implementing appropriate organizational and technical controls for data privacy and potential implications of non-compliance. Inculcating a culture of privacy-by-design and security awareness shall enable organizations to conduct business across and within borders with minimum ease.
Most industries working with large amounts of data have recognized the value of cognitive computing and machine learning technology. By gleaning insights from this data - often in real time - organizations are able to work more efficiently or gain an advantage over competitors.

This view is consistent with survey responses. While companies with annual revenues of less than INR 5 billion are divided on providing a majority response to the key technology of their immediate future, cognitive analytics and machine learning are the top selection. Further, an overwhelming 88% respondents from companies with annual revenues greater than INR100 billion see cognitive analytics and machine learning in alignment with their IT strategy plan. This trend is especially dominant in the Banking and Financial Services, Manufacturing, Healthcare and Technology sectors.

Banking & Finance Services
More than 90% of the top 50 financial institutions around the world are using machine learning and advanced analytics. Machine learning is being implemented in the financial industry in various applications such as protecting clients against fraud, detecting unusual activities, such as out-of-state purchases or large cash withdrawals. It is also being used to manage risk by predicting the creditworthiness of the applicants, predicting fund trends, identifying investment opportunities, automate client interaction, etc. In Dec 2017, A national banking and financial service company had launched a chatbot that uses machine learning to answer customer queries and analyze from thousands of sources to provide simple answers on the bank’s products and services almost instantly.

Finance CIOs have responded with 68% favorability to machine learning as part of their strategic growth story in the survey.

Manufacturing
One of the key challenges faced by the manufacturing sector is that consumers are more conscious with product quality and customization. As a result, it is crucial for companies to be able to change production systems in a short amount of time, and advanced hardware and software is needed to enable this capability without the need for retooling or system wide reprogramming.

Machine learning’s core technologies align well with the complex problems manufacturers face daily. From striving to keep supply chains operating efficiently to producing customized, built-to-order products on time to monitoring machine efficiency, machine learning algorithms have the potential to bring greater accuracy and predictability to every phase of production.

This is in-line with the responses received for Manufacturing. 60% of respondents have stated that cognitive analytics and machine learning is in alignment with their organization’s strategic plan.

Healthcare
McKinsey estimates that big data and machine learning in pharma and medicine could generate a value of up to $100B annually, based on better decision-making, and optimized innovation, improved efficiency of research/clinical trials, and new tool creation for physicians, consumers, insurers, and regulators. Currently machine learning is used in applications such as disease identification, drug discovery, prediction of disease progression and medical image interpretation.

In 2017, An international pharmaceutical company had announced use of machine learning and AI to predict how molecules will behave and how likely they are to make a useful drug, thereby saving time and money on unnecessary tests.

To our survey, 85% of the healthcare industry (life science companies and hospitals) have identified ML and Cognitive Analytics as the leading technology in their roadmap.

1Source: MGI-Artificial-Intelligence-Discussion-paper
Technology
Modern applications and infrastructure are generating log data that is captured for indexing, searching and analytics. The massive data sets obtained from the hardware, operating systems, server software and application software can be aggregated and correlated to find insights and patterns. When ML models are applied to these data sets, IT operations transform from being reactive to predictive.

It will help the operation teams perform precise and accurate root cause analysis. Advanced models can help prevent disruption and outage to IT through predictive analytics.

Blockchain is a decentralized technology which supports a distributed ledger where transactions made in bitcoins or any other cryptocurrency are recorded and linked securely using cryptography.

Cryptocurrencies have changed the way we look at transactions, they have eliminated the need of trust in traditional systems. However, more interesting is the technology which enables such a trustless transactional environment - Blockchain. Can organizations leverage the decentralized and immutable qualities of a blockchain to improve existing functions?

Advantages and types of blockchains

Due to decentralized nature of blockchains, organizations may be able to improve existing functions and achieve:

- Quicker execution and settlement of transactions (financial and non-financial)
- Reduce cost of operation
- Build resilient systems and processes
- An immutable and transparent trail of records

Intrusion detection can be augmented with ML for enhanced security. There are many scenarios where the application of ML to IT will lead to intelligent operations. 58% of CIOs/ survey respondents belonging to the IT and IT Enabled Service sector have identified ML has their top priority. Machine learning is an enabler to a wider concept of cognitive computing, which will transform how we live, work, and think. Digital systems would be soon measured on its cognitive capabilities and is the next big step towards digital humanism.

Some examples of private blockchains in India:

- A multinational public sector bank and other private and PSU banks plans to use private blockchain to manage the know-your-customer (KYC) details and improve existing trade finance systems
- A state government implementation of blockchain for e-governance
- A multinational conglomerate and an international technology company develop blockchain for supply chain finance

But there are some teething challenges with blockchain in the areas of efficiency, speed and security, which may refrain institutions and organizations from embracing blockchain as a technology. But, in the wake of major financial debacles, blockchain may be the big savior and check mechanism to maintain integrity of our financial and operational systems.

How have trends changed?

Compared to previous year, 27% of participants believed that blockchain was in alignment with their organization’s strategic plan. 39% of participants had plans of incorporating blockchain in the next two years, while 10% participants had long terms (3-5years) plans of blockchain adoption.

While 38 % of participants felt that blockchain was not applicable to their organizations.

Organizations certainly are looking forward to build a better business case and improve their existing functions using blockchains. We may see blockchain systems starting to mature in the next 2-5 years, as blockchain adoption is driven up by various private and public implementations.

Smart contracts build on blockchain may further enable organizations to automate various processes of transactional nature and drive efficiency in the face of ever increasing complexity of businesses functions.

Blockchain and blockchain based digital solutions

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While most of the cryptocurrencies use what is known as a public blockchain, institutions have started experimenting with private (permissioned) versions of blockchains. Private Blockchains enables organizations to enforce access control on who has access to the blockchain network. But this goes against the basic tenet of transactional immutability by allowing only the ones deemed to be necessary to prescribe and approve transactions. Nonetheless, a private block chain application may allow for initial trust and control over the processing of transactions.

Organizations are now taking the next steps to align their transactional systems with blockchain to leverage the benefits of data integrity and high amount of audit controls.

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While the industry dissects the disruptive technology offerings to distinguish hype from reality, RPA has proved that it is here to stay on the IT agenda. With a striking 50% companies from the survey choosing RPA as the technology most in line with their IT strategy plan for two consecutive years, a more virtual workforce might soon be personified in the industry. Promises to transform the cost, efficiency and quality of executing many of the back office and customer facing processes that businesses rely on people to perform has made RPA a popular choice for companies across the revenue scale.

RPA in the Indian context

In India, the RPA journey is still at a very nascent stage. About 54% of the companies are still exploring what is possible with automation while 30% are in the initial stage of deploying or are building automation into their operating model. This slow adoption of the RPA can be tied back to the recently realized importance of including RPA as part of a long-term business strategy as opposed to adopting it in its immediate IT strategy. A recent EY survey on RPA revealed that across the 20 countries where EY has delivered RPA projects, companies often recall the EY services again due to failed first attempts at continuing the RPA model. This however is not a reflection of the technology but a direct impact of considering RPA as an only IT centric technology adoption instead of a business focused adoption.

The Indian CIOs are hence considering RPA in context of a better business case, exploring new use cases and also evaluating the security considerations that spring from a virtual workforce transformation. Quality improvement is the top reason for interest in the RPA technology while improving customer experience and building capacity in the business without hiring additional people are also key motivators.

RPA across sectors

The Banking and Financial Services sector reveals the highest interest and likelihood in adopting RPA in their business. About 57% of the Banking and Financial Services companies have already initiated their RPA journey while 43% are exploring what’s possible. From the companies that have already kick-started RPA, 25% are either getting some benefits and planning wider deployment or are looking to develop a business led competency supported by IT. 10% of the companies claim to already have a well-established RPA model.

The manufacturing industry closely follows Banking and Financial Services in their interest to adopt RPA. While a majority of the companies are still exploring what’s possible, about 10% of the companies are already reaping some benefits from the RPA implementation. The IT and the automotive sectors are next in line for RPA adoption. While majority of the companies in this sector are still in the planning and exploring stage, some companies have completed an initial deployment of their RPA solution.

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The RPA plan

The RPA journey across the sectors has been promising, however, it remains to be seen whether RPA can make it in the first few iterations. As for companies that are still in the initial stages of planning and deployment, survey reveals that 51% of the companies intend to incorporate robotics in their organization in the next 1 year. 28% have considered robotics to be implemented in the long term while 15% are still exploring and evaluating the timelines.

According to most of the companies that participated in the survey, the RPA plan revolves around 3 major areas. Introducing automation only in areas where it will directly impact the overall corporate strategy is the key strategy preferred by the industry. This also leads to 2 other areas to be focused while planning RPA. First is identifying areas of automation while second is planning re-deployment and transitioning of workforce into roles which are less likely to get automated. Combined together, these 3 things have been considered by most of the respondents as part of their “RPA plan”.

With a capacity of a complete virtual workforce, severe cost-benefit transformation and exponential efficiency growth, RPA will be tried and tested several times through several iterations until it makes it or breaks it as a technology disruptor in today’s world.

Organisations are able to deliver workforce productivity leveraging RPA. Progressive organisations are using RPA and other intelligent automation solutions to challenge the status quo and are building digital workforce.

Milan Sheth - Partner, National Director - Technology Sector & AI/ Robotics leader - Global TMT Sector
Cyber Attacks are evolving at a rapid pace, technologies which are still in a nascent stage have already been exploited and abused by Cybercriminals. In recent years we have seen some of the most terrifying “hacks” - The Mirai Botnet targeting IOT devices, SWIFT Cyber thefts, WannaCry ransomware and other data compromises.

The question to ask here is – Are organizations prepared to defend and respond to Cyber Attacks of ever increasing sophistication?

How would a financial institution respond if it’s SWIFT systems were hacked, or how would a manufacturing company respond to ransomware attacks on its SCADA/ICS systems. Taking key learnings from recent hacks, if a Cybercriminal were to compromise an organization and gain access to trade secrets or sensitive information, how exactly would organizations detect and contain the damage?

How prepared are we?

When we asked respondents and IT heads through our survey, a staggering 41% of participant organizations did not have mechanisms to protect against lateral threats in their organization. It was also interesting to note that yet another 15% believed that lateral threats were not a major concern for their organization.

We live in an era where securing external assets is no longer sufficient in protecting against Cyber criminals. The ubiquitous social factor has opened organizations to threats which were inexistend before. It is no longer a matter of if an organization will be breached, but rather when it will be breached.

Considering that 41% of organizations lack internal controls to restrict lateral movements, it rather becomes an effortless task for a cybercriminal to breach an organization and cause immense damage in terms of reputational and monetary impact.

Consider that the cyber breach of a consumer credit reporting agency cost USD1.4 Billion on credit freeze cost beside the regulatory fines, legal prosecution and the damage done by misuse of leaked data.

While 44% of participants believed that they are already protecting against lateral threats, the EY GISS expresses a contrasting reality - Organizations rate the maturity of vulnerability identifications as low to medium with lack of capabilities to detect a sophisticated cyberattack.

Organizations need to step up in terms of defending and responding to cyber threats as there is a varied difference in having a system in place vis-a-vis that system optimized and operating correctly to protect reasonable against cyberattacks.

What are the hurdles?

Majority of participant organizations stated that their foremost priority is to be Cyber Secure. The drastic surge in cyberattacks has elevated cybersecurity to a topic which concerns the topmost management. Considering the high stakes and anonymity of attacks, Cyber Security is no longer a server room issue.

If organizations have their priorities defined and understand the threats, then what exactly are the hurdles to being Cyber Secure?

As per EY GISS, the various factors limiting the Cyber Secure agenda are:

- There is no independent cybersecurity function in organizations leading to cybersecurity becoming an IT decision than a security decision
- Lack of reporting and representation on board for cybersecurity issues
- Boards have insufficient knowledge of information security to fully evaluate the effectiveness of the risks the organization is facing and the measures the organization is taking

Furthermore, organizations have limited visibility of the security impact that adoption of disruptive technologies will have on their ecosystem. A majority 54.47% of our participants believed that while disruptive technologies are secure but need to be validated in real world threat scenarios.

Road ahead

Organizations want to be Cyber Secure, however significant action is required to align gaps from a governance, policy and procedure framework perspective. Continual self-assessment of cyber capabilities against the potential threats which an organization may face will enable organizations in improving their cyber maturity levels. Identifying the cyber risks specific to organization and imbibing the requisite controls cohesively with organizations overall frameworks will hasten the road to being Cyber Secure.
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 between the months of February and April 2018. There survey saw participation of 314 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 258 out of 314 respondents who completed the survey were considered as complete and used for the analysis. Partial responses were ignored for the purpose of this analysis.

### Revenue split of the organizations

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<tr>
<th>Revenue</th>
<th>Responses</th>
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<tr>
<td>&lt; 50 million</td>
<td>33.33%</td>
</tr>
<tr>
<td>Between 50 million to 100 million</td>
<td>22.09%</td>
</tr>
<tr>
<td>Between 100 million to 500 million</td>
<td>24.03%</td>
</tr>
<tr>
<td>Between 500 million to 1 billion</td>
<td>10.08%</td>
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<tr>
<td>Above 1 billion</td>
<td>10.47%</td>
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#### Sector-wise count of responses

- Automotive: 13%
- Banking & Financial services: 6%
- Life Sciences: 4%
- Mining & Metals: 0%
- Power & Utilities: 2%
- Telecommunications: 0%
- Transportation & Logistics: 3%
- IT & ITES: 29%
- Manufacturing: 14%
- Infrastructure and Real Estate: 5%
- Education, Government, Public Sector and Non-profit: 4%
- Retail and Consumer Products: 5%
- Media & Entertainment: 0%
- Hospitals & Healthcare: 1%
- Others: 9%
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 eight working chapters in India’s most strategic cities (Mumbai, Delhi-NCR, Bangalore, Pune, Chennai, Kolkata, Hyderabad and Coimbatore). We have now grown to 1500 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 a large number of CIO’s who are registered members. They are senior level technology executives in the country. The current registered members represent manufacturing, BFSI, 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 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:

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CIO Association
CIO Empire Business Centre
414, Senapati Bapat Marg,
Lower Parel, Mumbai - 400013

Administration Office Address
(Communication Address)
CIO Association C/o Bloom Desk
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