



Technology Trends Dossier 2019

WITH INSIGHTS AND PERSPECTIVES FROM LEADING CIOs AND CXOs

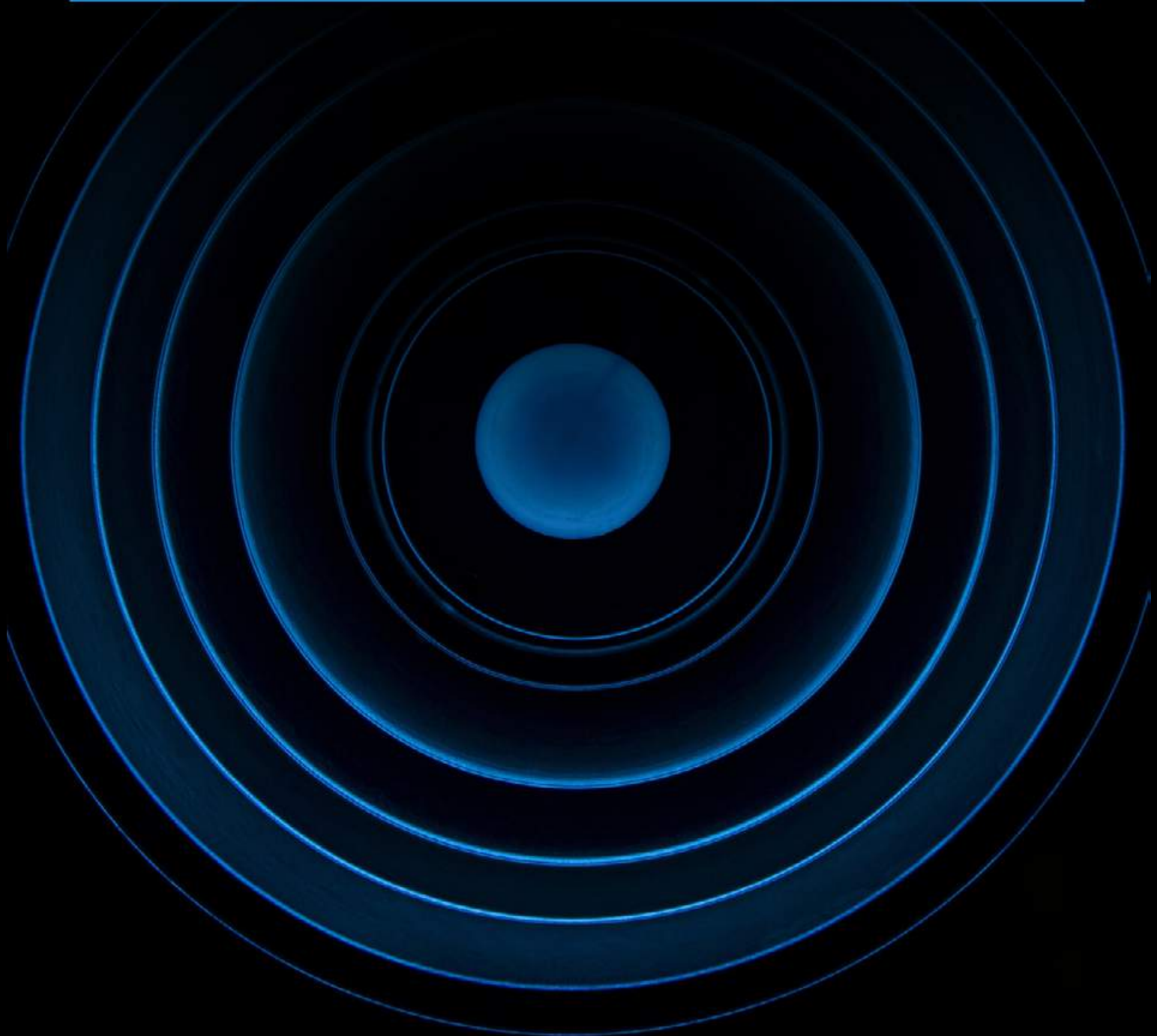


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Foreword

The background of the page features abstract, flowing wavy lines in shades of teal and light grey. These lines originate from the bottom left and curve upwards and to the right, creating a sense of movement and depth. The teal lines are more prominent and layered, while the grey lines are more subtle and layered behind them. The overall aesthetic is clean, modern, and professional.

Dear Reader,

Thank you for downloading CMR's Technology Trends Dossier 2019, a comprehensive and sweeping view of the transformative technologies that will shape the way enterprises operate in the next 2-3 years and specifically in 2019.

In 2019, the most dominant theme would be one of technology continuity and technology maturity. We witnessed exciting new technologies emerge over the past few years, which CMR collectively terms as the ABCD-i (AI, Blockchain, Cloud, Data Analytics, IoT) of technology.

While these technologies overshadowed traditional IT, they did not gain widespread deployment, because many of them are still evolving. CMR feels that these technologies would gain more maturity in the coming 2-3 years and we'll see lots of enterprises rolling out their deployments. This trend is clearly reflected from the voice of tech leaders that we've presented in the pages to follow.

The CMR Technology Trends Dossier has put together the viewpoints by some of India's leading CIOs, CTOs, CxOs, and industry experts from across key industries. These have been divided into three parts--An analysis and future tech outlook by CMR analysts, views of Tech Leaders and Industry Experts of the technologies that would have the highest impact in the next 2-3 years, and specifically in 2019.

A BIG THANK YOU!

CMR would like to thank all the tech leaders and industry experts who spared their precious time to provide their valuable inputs and helped make this year book possible. We hope these insights will help you fine-tune and carve out your own enterprise strategies in the new year. Thanks once again and here's wishing everyone a very Happy New Year!

We believe you would find this report from CMR analyst team useful, as it brings together, pertinent and critical technology trends that will impact the enterprises in 2019 and beyond. These trends are backed by insights and perspectives from leading technology practitioners.

As always, we would look forward to your comments, and perspectives.

Thomas George

Senior Vice President
and Head

Anil Chopra

UP Research and Consulting

Prabhu Ram

Head, Industry
Intelligence Group

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CMR's Tech Predictions 2019

The New ABCD-IR of Technology

While we heard about many new technologies that would have an impact on enterprises next year, those that have gained precedence over others are Artificial Intelligence, Blockchain, Cloud, Data Analytics, IoT and Robotic Process Automation (RPA). CMR calls it the new ABCD-IR of the tech world. They will be dominate all tech conversations next year across enterprises.

The Most Impactful Technologies of this year

Artificial Intelligence:



the most popular technology by far among most enterprises. Multiple use cases are planned around it, with the most popular being conversational systems like chatbots, security, and real-time personalization for enhanced customer experience.

Blockchain:



The second most talked about technology besides Robotic Process Automation. Companies plan to use this to eliminate trust issues while processing various types of documentation.

Cloud:



Once a part of the popular SMAC (Social, Mobile, Analytics, Cloud) Stack, cloud technologies have evolved considerably since and have become a must-have tech for most enterprises. Throughout this year, organizations have plans to develop their multi-cloud strategy, which would include hybrid clouds, private clouds, and cloud enablement of their enterprise applications to make them accessible anytime, from anywhere and any device.

Data Analytics:



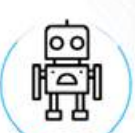
Data has become the new oil in the digital economy, and enterprises are beefing up their analytics capabilities for strategic decision making and sector specific analysis.

IoT:



The pace at which various types of devices are getting connected will completely re-define human-machine interactions and impact every industry. It will help bridge physical and virtual worlds and completely re-define the way computing is done at the edge.

Robotic Process Automation:



Robotic Process Automation is another technology that's on top of mind for most technology decision makers, whether to optimize operations cost, help customers in easing their tasks and finding the information they're looking for, or automating tasks by allowing inter-system communication.

Artificial Intelligence



We already use AI in our everyday lives, whether it be an Amazon Echo device in our homes or Android's Smart Adaptive battery technology in our phones. In 2019, Machine Learning will enter an operational phase, beyond backroom experiments and getting more embedded into mission-critical, enterprise applications.

Automation is a dominant theme, and wherein one emerging process automation technology, the Robotic Process Automation (or RPA) is getting increased attention.

“In 2019, Machine Learning will enter an operational phase, beyond backroom experiments and getting more embedded into mission-critical, enterprise applications.”

The top AI trends that will follow in 2019 include the following:

- New technologies will enable partial automation of tasks with help of AI
- AI Smart Features Will Improve Meetings
- AI assistants will become truly useful
- Video and Voice with help of AI will be the Last Frontier in Business Communications
- Chatbots, RPA and AI will continue to evolve, the depth and breadth of functions they can perform will increase
- AI is expected to create more jobs than cannibalizing them

Blockchain



Blockchain is gaining prominence among enterprises because of their trustless transactions and secure record keeping. While the Blockchain is not as revolutionary as artificial intelligence (AI), 2019 will see new use cases emerge that will transform the way we operate. In 2019, Blockchains will begin to gain traction with largescale practical implementations of blockchain beginning to take place beyond the cryptocurrency use case. Blockchains will unlock distributed marketplaces and computing systems that leverage communities for sharing of resources in both a cost- and resource-efficient manner.

“While the Blockchain is not as revolutionary as artificial intelligence (AI), 2019 will see new use cases emerge that will transform the way we operate.”

The top trends expected in 2019 include:

- Decentralized of apps and ledger
- More components like user management, workflows, systems integration, user interface, APIs, security, event mediation, and many more for enterprise apps
- Adoption in non-technology issues like process adaption in businesses
- Convergence of blockchain and IoT

Data Analytics



In enterprises, there is an increased and urgent need for data workers to have on-demand access to data, and for taking swift actions, all in the same process workflow. Enterprises will start embracing analytics very tightly in their decision-making processes, and with increased investments, the costs associated with data analytics will reduce drastically.

In 2019, a key trend would be of Augmented Data wherein systems will use Artificial Intelligence and Machine Learning to analyze and suggest insights pre-emptively. New, powerful technological advancements have emerged, customized to the needs of different business teams and verticals, and by empowering new audiences with on-demand data in context.

Embedded analytics puts data and insights where people are already working, without the need to navigate to another application or shared server. On the other hand, dashboard extensions enable easy access to other systems right into the dashboard. Lastly, Mobile Analytics puts data directly into the hands of people in the field.

“In 2019, a key trend would be of Augmented Data wherein systems will use Artificial Intelligence and Machine Learning to analyze and suggest insights pre-emptively.”

The top data analytics trends that will dominate 2019 include:

- Predictive analytics will become mainstream
- DataOps is expected to grow in 2019 as data pipelines become more complex, leading to increased governance tools and better integration for the entire data analytics lifecycle
- Edge Computing is expected to become more prominent as data analytics is partly reliant on the network bandwidth in order to save data locally close to the data source.

IoT



IoT continues to gain with its steady deployment. As a result of increased IoT uptake, data collection and data analysis have become increasingly ambient, just part of the environment, wherever you are, whatever you're doing.

“As a result of increased IoT uptake, data collection and data analysis have become increasingly ambient.”

In 2018 around 3.6 billion devices are connected to the Internet which is used for daily tasks. Such IoT devices will continue to provide massive amounts of data that fuel AI discoveries. With a bigger push from 5G in 2019 edge computing will increase leading to further adoption of IoT devices.

The top trends in 2019 include:

- Deeper Penetration in the Manufacturing and Healthcare Industries
- Increased security at endpoints
- Increased smart areas within cities

Cloud Computing



Cloud computing has become the de facto platform for fueling digital transformations and modernizing of IT portfolios. Companies are increasingly finding business agility or cost savings by working with vendors such as Amazon Web Services (AWS), Microsoft and Google.

As in 2018 where most enterprises were procuring cloud services from two or more vendors, is expected to gain traction in 2019. Companies such as AWS, Microsoft, Alibaba, Google, IBM and Oracle, will garner a lion share of the \$200 billion in global public cloud spending for 2019.

“With increased adoption of hybrid and multi-cloud environments, a new wave of complexity is set to hit the enterprise in 2019. Enterprises will face a wave of challenges, ranging from cost governance to the management of complex, heterogeneous architectures.”

The top trends expected in 2019 include:

- Multi-cloud strategies to grow up
- Refactor on-premises application for the cloud environment
- Adoption of the hybrid cloud and multi-cloud for tomorrow
- Prevention of security breaches

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Tech leaders Uox



Deepak Sharma

CDO, Kotak Mahindra Bank

Industry: BFSI

Industry Focus:

AI, Open Banking, Blockchain, and Digital Banking Architectures will have the greatest impact on the banking industry in the coming 2-3 years.

In AI, Chatbots will move from Bank-owned channels (net banking, mobile banking) to trusted 3rd party channels (Google Assistant, Whatsapp, Alexa). They'll also have vernacular support, and text based bots will move to multi skill text & speech bots.

Facial recognition will see increased adoption from employee authentication, visitor verification to customer verification.

Cognitive Automation through text & handwriting recognition will have a significant impact, as digitalization of hard copies of documents will happen through extraction of text from handwritten content with greater accuracy and embedded AI.

Automation of fraud detection through AI will have a huge impact on our industry, and so will Real time personalisation, engagement & marketing automation thru Data lakes, click stream and analytics.

In Open Banking, there will be an Emergence of APIs as a channel for Banks, with New business models will emerge for partner collaboration and ecosystem creation for Banks

In Blockchain, Adoption will increase in the ecosystem for Payments and trade finance.

Digital Banking Architectures will emerge with Cloud ready applications, API & micro service based, New Mobile and Web.

Our Focus:

In AI & Robotics, we would focus on DL, Real time personalisation, Fraud detection, Facial recognition, Speech & chatbots.

In Open Banking, we'll focus on a microservice framework & New API-based offering for startups, enterprises, developers & SME segments.

In Blockchain, we'll focus on using the tech for payments and trade finance.

We'll use Big data, Analytics, and Cloud for building Cloud ready applications, Data and analytics-led augmentation for customer experience.

Our focus on Digital multichannel will increase toward Omni channel, mobility and web 2.0. Plus, we'll focus on Cybersecurity, Data Privacy & Governance.

Our Focus would be around AI, Open Banking, Blockchain, Big Data, Data-Led Analytics for Customer experience, Cloud ready applications, and digital multi-channel, to name a few.



G M Shenoy

CTO Operations, National Stock Exchange of India Limited

Industry: BFSI

Industry Focus:

Innovations in Blockchain, AI and ML to bring about changes in the way stock markets function.

Our Focus:

Identify key Fintechs and work with them in a way possible to exploit their innovation and utilize them in the broad areas of NSE.



Sanjivan S Shirke

Sr. VP-IT, and Head-Information Security, UTI Mutual Fund

Industry: BFSI

Industry Focus:

Our industry will focus on digital transformation with customer delight, consuming market automation services from clouds like AWS, Azure, and Alibaba. Data strategies, building data lakes/data warehouses would build the foundation for this.

Our Focus:

Cloud first is the mantra and all infra, automations would be consumed from cloud. There will be no internal data centers for us. We are moving to cloud in 2019.



Prasanna Lohar

Chief Innovation Officer, DCB BANK LTD.

Industry: BFSI

Adoption of innovation, reskilling, automation & Collaboration with Effective Fintech will be key Focus for Banks in 2019.

Execute projects with Intelligent Automation, Artificial Intelligence, Blockchain, Internet of Things, Big Data, Biometrics, Cloud computing and Social Media will be a focus for Banks in coming years.

Open Banking and Platform as Service will be driving factor to bring more customer services on various alternate channels for customers.

Platforms like personal finance management, Next level of Mobile banking & Core platforms upgrade will be helpful to bring more business and customer demand.

The change in the cyberspace & regulatory requirements are happening at the blink of an eye, with penetration of social media and mass usage of mobile applications to social platforms. It will be major focus while we continue to do Digital Transformation.

Open Banking and Platform as Service will be the driving factors to bring more customer services on various alternate channels for customers.



Kiran Belsekar

Head-IT, Enam Asset Management Co. Put. Ltd.

Industry: BFSI

Industry Focus:

Some of the key trends we foresee are a migration from Clients PDF statement to on-demand video statements covering a client's report in a 2-3 mins clip; Artificial Intelligence will work with humans in organizations to gain customer trust and confidence by being transparent in their AI-based decisions and actions; Lastly, RPA will be used to assist customers with their investments. Use of robots to model investments for customers has already started happening in the western countries.

Our Focus:

Our focus would be to work with banking channel partners to digitize all paperwork related investments to speed up client on-boarding in portfolio management services.



Dr. Raveendran

CIO, Sakthi Finance

Industry: BFSI

Industry Focus:

Empowering managers with the capability to predict and take smart decisions would be key in the coming 2-3 years, and will help companies stay ahead of competition. Focus will also increase on enhancing customer experience in order to retain and add new ones. Besides this, companies will also have to focus on ensuring regulatory compliance.

Our Focus:

In our case, all our tech solutions and tools would fall under the AI umbrella in one some form or the other in the years to come.



Nafees Ahmed

CIO, Indiabulls

Industry: BFSI

Industry Focus:

The biggest challenge for the housing industry today is to get all stakeholders like Builders, DSAs, Housing finance company etc on a single platform to give a seamless experience to customers in buying property. customers have to interact with multiple parties for this, which is cumbersome and time consuming. Tech innovations can help create the single platform. Mobile is the most preferred communication channel for customers, and if it's supported by Robotics process automation, Artificial intelligence and machine learning, it can provide a great customer experience in home buying process. Tools like chatbots can be used innovatively to help customers in home buying and servicing them after loan disbursement. It would ultimately help the industry in reducing their costs and business growth in digital world without doing expansion in physical world. In today's world, Data is core for every decision making and huge data is being generated across various channels. It becomes very important to use strong data analytics to refine the business models, operations and underwriting processes. In the next 2-3 years, our industry will focus on technologies for better customer experience and for digitalizing their processes.

In the next 2-3 years, our industry will focus on technologies for better customer experience and for digitalizing their processes.

Our Focus:

In the last couple of years we have focused majorly on digital transformations as we feel it is the most efficient and effective way to grow your business and provide better customer experience. As we are ready with our digital platforms now we are working on technologies like Artificial intelligence, Robotics process automation, marketing tools, chatbots and data analytics. These technologies will help us tremendously in better decision making, underwriting, operational efficiency, better customer experience and business growth.

We are ready with our digital platform and working on technologies like Artificial intelligence, Robotics process automation, marketing tools, chatbots and data analytics.



Harnath Babu

CIO, KPMG

Industry: Advisory Services

Industry Focus:

We are on the verge of a tech revolution, marked by a series of exponential tech advancements. These have opened the floodgates for the professional consulting industry. Of these the technologies that are likely to have the greatest impact on our industry over the next couple of years are:

AI & ML: The tech promises business process transformation, enabling data-driven decisions and making enterprises smarter. There is, and will be self-learning systems that provide virtual assistance to users round the clock. We look forward to AI to simplify routine activities like customer engagement and experience, decision-making, developing businesses models, recognition objects, and much more.

Robotics Process Automation: Consulting firms are leveraging RPA to come up with customised tools that can manipulate data, interpret transactions and communicate with other digital systems.

Internet of Things: We are surrounded by a number of smart, intelligent devices capable of having smarter interactions with the people without human involvement. Connected to the web, and combined with wired and wireless channels of communication, things are most likely to be turned into one big integrated system soon driving a complete change in human-machine interaction.

Our Focus:

Acknowledging the fact that digital technologies will enable business models of the future and transform the enterprise, we have a digital roadmap in place with well-rounded business strategies that yield enhanced business efficiency and help ensure that technology is leveraged in the best possible way to streamline tasks as well as enhance productivity at work.

At KPMG in India, we are focused on implementing advanced technologies, including chatbots, RPA and voice-based digital assistants bringing together a smart combination of skilled human resources and digital workers.

We also plan to strengthen our mobility solutions by introducing new features, improved functionality and enhanced security. We have more projects in the pipeline to boost communication and collaboration amongst employees.

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Ritu Madbhavi

CIO, FCB India

Industry: Advertising, Media and Entertainment

Industry Focus:

The areas which will impact our Industry as I see it is AI/ ML/ RPA and Cognitive. Blockchain can be a very useful implementation but it needs to be for the entire ecosystem.

Our Focus:

We are actively working on Cognitive Analytics to enhance the business product. RPA is being used to develop tools and re-architect business processes to enhance productivity. This being the case for automating certain operations in Finance.

We are also implementing security tools to enhance data Privacy.



Rajneesh Mittal

CTO, Zee Essel Group

Industry: Advertising, Media and Entertainment

Industry Focus:

If I have to name one technology that's once in a lifetime opportunity, it has to be AI undoubtedly. It's one of the most profound technologies that is disrupting or rather creating unforeseen opportunities in the media industry. Automation of post-production work, much deeper and faster meta-tagging of vast libraries of content, automated dubbing & subtitling and auto generation of promos are some of the key areas where AI has started to make its presence felt and opened the industry to its myriad possibilities.

Our Focus:

We will continue to stay very focused on how evolving technology landscape open up opportunities for business growth. The tech focus will not be on siloed technologies but those that can help take the business to a new level. We will continue aggressive trialing and productionizing of various AI/ML use cases. On content creation side, we will deploy tech to improve the visual appeal and engagement of shows dramatically. We also look forward to continuing our journey of delving deeper into our data reservoir and enabling business with insightful analysis for accurate decision making.



Dinesh Singh

CTO, NDTU

Industry: Advertising, Media and Entertainment

Industry Focus:

NDTU has two sides of business i.e. TU & Digital. Within Digital, business is further divided into website, news app, E-commerce portal & OTT TU. TU business already has peaked & further growth is slow. Pressure on TU is to lower operational cost in order to sustain.

In the next 2-3 years, in TU domain, technology people would be working on using using the latest technologies like 4G/5G/UOLTE, large internet pipes at lower cost, cloud hosting, etc.

Our Focus:

To keep pace with the fast changing technology, and apart from buying regular IT hardware, a major focus would be on cyber security & building a robust DR (Disaster Recovery) architecture.



Manikkam Subramaniam

Sr UP, Heritage Group
Industry: Construction

Industry Focus:

1. IoT will change the way consumers search for homes online
2. Augmented Reality and Virtual Reality will be used to conduct home tours, a trend already started by many top developers. Moving forward, virtual reality home tours will be available without any gear or special equipment, similar to how Google offers instant street view today.
3. Machine Learning will be used in future real estate searches and put consumers at the center of the conversation instead of property. Websites will understand each consumer and make recommendations based on preferences that will go beyond beds, baths, and price range.
4. Continuous automation will make real estate agents more efficient, as compared to today where 91% use social media to help promote their business, 10% have a blog and 62% have a personal website. As a result, agents will spend more time showing homes and less creating marketing materials to get noticed.
5. Big data may play a more active role next year in helping realtors make the right decisions for their business.
6. Physical-Digital Interactions will enable consumers driving around a neighborhood get instant access to any home available there. This could be with the help of a button that alerts the nearest real estate agent to show the home instantly.
7. Consumers expect instant gratification today, so technology will help make more instant connections between interested consumers and available agents.

Our Focus:

We plan to use virtual reality to complement or replace property walk-throughs for clients. 360-degree photos of every room of a property would be taken professionally to create realistic views. Potential buyers may use their smartphone, computer or special headset for the tour.

AI powered chatbots will be used to Re-direct phone traffic, respond to simple requests and, alert customers

Blockchain is quietly shaking up the real estate world with all kinds of new opportunities. Heritage is developing new platforms for peer-to-peer rentals, cross-border sales via cryptocurrency, blockchain-based property management platforms and real estate investments via Security Token Offerings.

We plan to use virtual reality to complement or replace property walk-throughs for clients.



Sumit Puri

CIO, Max Healthcare
Industry: Healthcare

Industry Focus:

Technology innovations that will have maximum impact would be Artificial Intelligence for Clinician Decision support and enhancing productivity for radiologists/pathologists, 3D printing for personalized mass production of limbs and Augmented Reality (AR)/ Virtual Reality (VR) for training of nurses/ paramedics/ junior doctors etc.

Our Focus:

We would focus on enhancing data analytics and insights to enhance patient safety, increase accuracy of cost estimates through standardised packages, improve patient and doctor convenience using mobile applications and improve productivity of staff using tools like nurse rostering and scheduling.



Srinivasan Manickam

Principal Business Advisor, Infogain Corp

Industry: IT

Industry Focus:

We are beginning to transition into an interesting age in travel and hospitality. Unlike before, products are getting re-architected not because the underlying technology is obsolete, but our understanding of customers is obsolete! The constantly on-the-move, always-on generations of guests and travelers is necessitating a wide variety of innovations in the areas of Augmented Reality, Robotic process automations, chat-bots and voice technologies, all underlined and enriched by over-arching Machine Learning and AI. Tech innovations such as Reinforced Machine Learning enables a system to learn by reward-punish mechanism, will be bringing in greater impacts in the travel tech.

Our Focus:

Specifically, our clients are interested to have more insights into their guests and connect it with a 360 perspective of operations. Improving guest touchpoint, more relevant upsell-cross-sell, better personalization and laser focus in bringing in Next Gen operations without needing to cut corners.



Ravi Kasinadhuni

UP Product Development and India Site Lead, F5 Networks

Industry: IT

Industry Focus:

In 2018, most tech innovations were done with a simple aim to improve customer experiences. These innovations, as great as they may be, come with their own set of risks security, for example.

Artificial Intelligence is one emerging technology that will continue to have a major impact on our industry. It will be embraced in one form or another in most industrial verticals in 2019 and beyond. As per estimates, by 2020, we'll have about 50 billion connected devices all over the world, which will contribute to an already escalating explosion in data. These will make predicting and identifying security threats an overwhelming process. This vast trove of data is valuable fodder for AI, which can process and analyse all information captured to understand new trends and details. For cyber security, this means new exploits and weaknesses can quickly be identified and analyzed to help mitigate further attacks.

India is inching towards becoming a digital economy. Due to this, businesses in India need to enhance their Application Capital just as much as their financial capital. Application Capital will define where businesses will be in 2019. It's where the value of modern enterprises will increasingly reside within its applications and data. There is additional pressure on IT departments to deploy, scale and manage the growth of their growing applications portfolio safely and securely while also creating a unified experience for end-users.

The rise of e-commerce sites like Flipkart and Amazon in India has been fueled by Indians who are spending more time online thanks to lower data rates and increased mobile penetration. This has also increased the number incidences of phishing attempts, and according to our 2018 Phishing and Fraud Report, the quality of phishing emails is improving and fooling more unsuspecting victims. This will have to be tackled by creating more awareness and increasing emphasis on digital hygiene.

The security space will continue to evolve and innovate, as more technologies make their way into our lives, with existing and new solutions to safeguard consumers from security threats and vulnerabilities.

Our Focus:

F5 has always championed application security, and it will be our focus in India as well. India is becoming connected at an extremely fast rate, with higher data usage and cheaper connectivity. This has caused and will continue to result in a considerable increase in apps usage, with 79% accessing social networking apps at least once a day, the second highest in the Asia-Pacific region.

According to our Curve of Convenience research, despite potentially higher vulnerabilities in the country, 26% of Indians are more likely to choose convenience over security and 53% of Indians will not hesitate to leave a breached app. The push for digitization of services in India has increased the number of mobile ownership and given a boost to e-commerce in the country. Demonetization led to a surge in digital transactions in India with mobile wallet transactions in India swelling 40 times in just 5 years. However, this has also led to a rise in the number of vulnerabilities, which will inevitably lead to increased incidences of attacks making application security more important than ever in the year ahead.



B.S.Rao

UP – Marketing, CtrlS Datacenters Ltd

Industry: IT

Industry Focus:

Cloud, IoT, Artificial Intelligence, IT/Cyber Security and Analytics shall have the largest impact in the next 2 to 3 years. Organizations will embrace cloud to address rapid business growth to leverage benefits such as elasticity and to optimize infrastructure utilization.

Security shall continue to be a key area of focus as more and more cyber criminals are eyeing hacking/stealing data and disrupting businesses. The case in point is recent hacking of Marriott Group of Hotels where 500 million customer records were hacked including their emails, passport details, etc.

Artificial Intelligence will get into board rooms, hospitals (Play the role of intelligent doctor who can accurately suggest a path of treatment for a diseases after analysing millions of similar patient records and line of treatment to ensure improve health care), IoT combined with Analytics can help managed traffic, large fleets, connect cars, connect refrigerators, buses and provide pro-active alters before breakdown of any of them with deeper insights.

Security shall continue to be a key area of focus as more and more cyber criminals are eyeing hacking/stealing data and disrupting businesses.

Our Focus:

First, we're focusing on cloud Technologies to help our business scale their infrastructure on demand in line with their business growth. We are now present in 20 Countries and will consolidate in yet another 10 countries ending up with presence in 30 countries by the end of 2019.

Our second area of focus is building Hyperscale Datacenters. We are building two Tier-4 Hyperscale Datacenters the activities of which shall commence in 2019 A 100 MW Hyperscale Datacenter in Mumbai and a 150 MW Hyperscale Datacenter in Hyderabad.

Security (Managed Security Services) will continue to be a focus area for us in 2019, and we are kicking-off our Artificial Intelligence Practice as well.

We're focusing on cloud Technologies to help our business scale their infrastructure on demand in line with their business growth.

Managed Security Services will continue to be a focus area...and we are kicking-off our Artificial Intelligence Practice as well.



Jagat Pal Singh

CTO, Cybage

Industry: IT Services

Augmented Reality, data storage and management, cognitive conversational systems, machine learning applied to software development life cycle and consumer behaviour, IoT & edge computing, and Blockchain implementations will have a significant impact on our industry.

Other interesting events to watch out would be Oracle making Java paid and IBM buying RedHat (read as future Cloud giant).

The year 2019 would see proliferation of deep learning, cognitive conversational APIs into chatbots and personal voice assistants being the first line of customer interactions with businesses.

Our industry is taking another step toward businesses going 24x7 for customer convenience and engagement. Personalization will take another big leap where not only recommendations on products and services will be designed for specific consumer needs but even channel, mode and time will be of their choice.

Interactions will cater to specific audience and the voice, tone and lingo used by these “robots” will make it even more personal. To deliver this next level of personalization also requires understanding the customer, capturing their digital footprints, mining and learning from them.

Augmented Reality will become a powerful medium for marketing to drive customer engagement and discovery of products and services. There will be emergence of innovative promotions in tandem with social media that leverages augmented reality.

Enterprises will continue to expect accelerated delivery to market and responsiveness to customers, which will be provided by innovations like machine learning based user behavior driven test engineering.

Performance engineering is expected to replace performance testing to cater to higher number of interactions generated by multiplying user devices and internet accessibility.

More focus will go into making cloud native applications leveraging various cognitive services and existing ones will see higher rates of migration to cloud. Enterprises will design applications and solutions keeping in mind integration with chatbots, voice assistants and AR tools.

Significant focus will go into getting the data house in order, more and more enterprises will adopt data lakes (or virtual data lakes), bring in governance policies and work towards democratization of data to be used by various functions. They will focus on designating data science teams and investing more in R&D to leverage the new oil data.



Anjani Kumar

CIO-AMI (Africa, Middle East, India), Nissan Motor Corporation

Industry: Automobile Manufacturing

In the last 5 years there have been a lot of new technologies or level of these technologies has changed. Some of the significant ones are Machine Learning & AI, NLP, 3D Printing, Blockchain, and IoT.

Automobile Industry is very interesting and complex, and has 5 domains, viz. Engineering, Manufacturing, Retail, Supply Chain & Logistics and Finance (Vehicle Financing). So almost all the technologies I listed will have some impact for sure, but industry's biggest impact will be through Connected cars, Autonomous Cars and Ride Sharing. To power Connected cars, IoT plays a significant role by making sure to connect the car with servers or other devices. Connected cars generate a lot of data, which is pushed to the cloud or servers. There are plenty of possibilities to be done with this data including driver performance, insurance scoring, route optimization, car performance, service needs and much more. Autonomous Cars are powered by IoT, AI and Machine learning, and NLP will bring the next level of interaction with the car.

Mobility technology also plays a significant role in Connected and Autonomous cars. 3D has the potential to change the way whole spare parts business works especially for discontinued models, but I still see this a few years away before it becomes true disruptor.

One thing which is changing the whole automobile industry is digital customer experience. Customers are making up their minds for the model of the car even before a test drive. Even though technology wise there's nothing new here, but advancements of existing technology and user experience design plays an important role here.

The Automobile industry's biggest impact will be through Connected cars, Autonomous Cars and Ride Sharing. To power Connected cars, IoT plays a significant role by making sure to connect the car with servers or other devices.



Chander Khanduja

CIO, Luminous Power Technologies Put. Ltd

Industry: Manufacturing

Maturity of AI platforms and standardization of Blockchain technology have put these innovations on the roadmap of our industry. These technologies will therefore have the greatest impact on our industry.



S Ramakrishnan

CIO, UB Group

Industry: Manufacturing

Industry Focus:

Though we're a part of the manufacturing industry, we're a little different, hence the technology innovation and its impact also differs. In our case, the factory shopfloor will certainly go through a major automation revolution. Three to Five years down the line, robotic process automation and IoT on the shopfloor may become very common in large industries. The automation opportunity is much better now as compared to a decade ago and most organizations are expected to leverage this. The plant automation systems that we are finding difficult to justify the return on investment will become a norm. Most large organization will adopt this and will be considered an essential part of factory setups.

Significant automation will be seen on the supply chain side too. Track and Trace solutions may become an integral part of supply chain. Product customization may become more common. Deliveries may be done using Drones. Though this may not happen at a mass level owing to infrastructure challenges, you will see some momentum in this area.

Our Focus:

We shall continue to focus on our digitalisation initiatives leveraging technologies like IoT, RPA, Mobility and Analytics across different functional areas.



O.P. Singh

AUP-Corp IT, JTEKT India Limited

Industry: Manufacturing

Industry Focus:

IoT and Analytics will impact our industry and help keep organizations on the cutting edge and sustain growth. Industry 4.0 is going to be inevitable for manufacturing organizations like ours.

Our Focus:

Our focus would be on security and core system (Bringing more automation and tools in product development, automation of operational processes) to create the organization's capability to drive Industry 4.0.

This would help us take digitization initiatives for future growth in terms of creating a smart manufacturing organization.



U Ranganathan Iyer

CIO, JBM GROUP

Industry: Manufacturing

Industry Focus:

The following trends will impact our industry in the coming 2-3 years, and especially 2019:

- a. RPA (in any of the processes where we are going to eliminate rudimentary / not so value added process which is really to reduce manpower)
- b. Connecting Machines to take out meaningful decisions to increase process efficiency, machine performance w/out compromising on quality of the product.
- c. Any innovation related to quality enhancements like visual quality process improvements is going to change the game for our industry. Why this is most important is we are competing with international players and we cannot compromise on quality, instead of first time right kind of mind frame to every time right kind of environment will increase the customer acquisition quick & can be sustain the customer also.

Our Focus:

- a. We want to focus on having the basic platform right by way of moving to HANA during 2019, which will give us an edge
- b. We will be deploying already tested solutions like bar-code automation which can add value to supply chain by way of deploying FIFO & traceability.
- c. We will be deploying some digital initiatives like automated EWB, Digital Signatures, weighbridge automation, etc.



Parna Ghosh

Group CIO, UNO Minda Group

Industry: Manufacturing

Industry Focus:

Innovations and digital disruption will have a huge impact on automotive industry in next few years. ACES – Autonomous, Connected, Electric & Shared Mobility will drive all changes through innovation and disruption. AI / ML, Analytics, MES / IoT, AR/VR, Blockchain, Robotics, RPA (BOT), Drones. Disruptive innovation will happen in the areas of Products, Technology, process and People.

Smart factories will generate better results through better yield, quality, productivity, profit and revenue. Customer satisfaction, repeat business, customer loyalty through quality and cost effective products will be achieved and organisations would be more viable & sustainable. Organisations who would be fast in adopting change, would survive the disruption and be leaders of tomorrow. Personalization of automotive products & services would be the order of the day. Hence faster adoption of technology and IT would help all organisations for speedier time to market and Go to market strategies.

Smart people/digital workforce will become the need of the hour, hence digitised HR practices and digital way of working would be adopted in all types of industries across.

Our Focus:

Our major focus areas where adoption is currently in progress are:

IoT implementation for maintenance and visibility, AR/VR for trainings and maintenance, Bar coding/ QR code / RFID adoption for traceability and FIFO batch control, RPA (BOTs) for end to end process automation, ChatBOTs for voice and text based fast search, Advanced analytics (predictive, prescriptive, and cognitive).

We are also exploring use cases for AI / ML, MES pilot, Blockchain, Robotics, and Drones.



Partha Mondal

GM-IT, Atul Ltd

Industry: Manufacturing

Industry Focus:

Atul Limited is an eminent name in manufacturing, predominantly in Chemical manufacturing. With the advent of 'NextGen' technologies, there will be substantial changes in our Industry. Just as technology disruption happens in other industries, our focus would shift from customer delight to customer centricity, a digital transformation strategy with apt technology will bring a sea change to the way we do business today.

Digital Transformation and disruption is going to impact each business function we have today; from 'Supply Chain' perspective we expect a radical shift in end to end processes by introduction of Industry 4.0, whereas the strenuous manual processes in Export Import Documentation, LC/BG Issuance, Supply Chain Traceability issues would be addressed by Blockchain.

Shop floor process automation will take us to the 'NextGen' production floor by establishing a digital thread across the shop floor with cutting edge technologies like Digital Twins and IoT.

The modern age technology will disrupt Sales & Marketing too through Enterprise Mobility to enrich customer satisfaction. Business strategy formulation and decision making would be dependent on real time Business Analytics.

Our Focus:

Industry 4.0: Adapting to Industry 4.0 would be the key differentiator in the future as it conceptualizes the perfect orchestration of technology innovations like IoT, AI & ML, Predictive Analysis, and Big Data to bring out the best efficacy in the business and drive a sea change to all facets of Supply Chain Management, starting from Production Planning Management, Procurement & Order Management, Manufacturing Process (Discreet I Process), Logistics (which includes Transport Management) and Service & Maintenance.

Blockchain: This will revolutionize the tech world with its prowess in orchestrating processes seamlessly between multiple stakeholders, typically, for Supply Chain Process in Manufacturing Industry. It would put all relevant stakeholders onto the same platform with P2P (Peer to Peer) transaction enablement.

Enterprise Cloud Mobility One key success factor of Digital Transformation is agility, and Enterprise Cloud Mobility gives apt agility to our customers by providing all information 'on-the-fly' to drive it towards utmost customer centricity.

Enterprise mobility disrupts the Sales & Marketing operation significantly and empowers the salesforce to have an integrated system with ERP solution whereas the Sales Order can be generated on the fly using SOA web services.

Datacentre modernization would be one of our tech focus in 2019-20 where we shall take a step forward towards building a true hybrid cloud by taking our server virtualization to modernize hyper-converged infrastructure.

To transform our existing infrastructure to a unified digital foundation we would modernize the infrastructure through hyper convergence with vSAN, subsequently, induce network and advanced management through NSX and vRealize. vSAN simplifies the complexity involved in managing myriad servers from multiple OEMs and enhances the storage efficacy by inherent deduplication and compression functionalities.



Keyur Desai

CIO-Essar Ports & Shipping, Head-Information Security,
Network & Communication-Essar Group
Industry: Shipping

Industry Focus:

Advanced Analytics, Manufacturing Intelligence (MI) & Internet of Things (IoT), Connected Cloud Computing with flexible consumption models & Advanced Cyber Security solutions are some tech innovations that will have a major impact across sectors, especially Manufacturing and Marine industry.

-MI with Powerful data analysis to analyse the overall operational performance has always played a vital role in the Production Automation network. This focus with advanced analytics to have predictive analysis & contextual insights across the plant area proves to be a boon for the Manufacturing industry.

- Connected Cloud Computing with a mix of Public, Private & Hybrid Clouds is proving its worth for Organisations. Major public cloud providers are offering private cloud options with a mix of workloads running in public, private & hybrid environments, and providing secure and seamless experience for the users.

- With the digital era booming, risk and reality need to be managed simultaneously where. Advanced Cyber Security solutions with AI and UEBA (User & Entity Behaviour Analytics) will play a major role in providing visibility and protection to business critical data.

Our Focus:

Connected Cloud computing, MI & IoT initiatives with advanced Cyber Security solutions will be some of the key focus areas for our Organisation.



Meheriar Patel

Group CIO, Consultant, Jeena & Co.

Industry: Travel & Transport

Industry Focus:

Innovative use of technology for business growth will become imperative. Today's world focuses on two clear things--Products and Services. So, companies having a niche product innovation coupled with the right services and a competitive pricing will be the winners in the next 2-3 years.

Our Focus:

Technology will play a relevant and reflective role in the Transportation Industry, and a roadmap will have to be carved for it. New age robotics will be a game changer for in-line manufacturing assembly and repetitive jobs.

Artificial Intelligence and Data science will be another way of ensuring that this industry delivers on its desired performance. Tech startups will be the real showcase agents in this journey and we are working with a number of them. Portal exchange and market place buildup will also matter.

Mobility standards and usage will become much more significant, and guided technology offerings of pay and use models will also come into effect.

Go-to-Market with quick Technology Builds to deliver value to customers will garner a substantial following.

Lastly, this connected world will be completely different when 5G sets in. Its power will be unimaginable and its speed will change the dynamics.



Prashant Choudhary

CTO & Co-Founder, World Guidoo World Travels Pvt Ltd & Guidoo World FZ LLC.

Industry: Travel & Transport

Industry Focus:

In Tech, major keywords that will impact our sector are artificial intelligence, virtual reality, augmented reality, chatbots alongwith increased online penetration.

AI based chatbots have already become an exciting digital trend, and are enhancing customer experience by providing rapid response to basic queries without human interaction.

Virtual or Augmented Reality will be one of the most promising tech travel trends. It can allow travelers to digitally get into the virtual surroundings of a destination they are going to visit.

Recognition technologies like fingerprint, facial recognition, retina scanning or other biometrics will have the potential in terms of collecting data and identifying the personality of a traveler as well as for security.

Already 57% of all travel reservations are made online. This will only grow in the coming years. Online booking and mobile apps will allow booking, purchasing and getting itinerary online for both users and service providers in a convenient way.

Our Focus:

We will focus on new online products to make travel bookings and experiences more accessible to our clients. Plus, Big data analysis will be a focus area to understand customer and partner behaviour to bring relevant changes.

Also, with the presence of relevant data and its mining, we are working on chatbots that will assist our clients with the process of travel reservations.

The background features a series of overlapping, wavy lines in shades of teal and light grey, creating a sense of motion and depth. The lines are composed of many thin, parallel strokes, giving them a textured, fabric-like appearance. The teal lines are more prominent and vibrant, while the grey lines are lighter and more subtle, providing a clean, modern aesthetic.

Industry Uox



Dan Sommer

Market Intelligence, Qlik

Industry: IT

- In 2019, platforms that can handle multi-cloud, hybrid, and edge as a continuum rather than separate efforts will emerge. Around 10% of enterprise-generated data is created and processed outside a traditional centralized data center or cloud. By 2022, Gartner predicts this figure will reach 75%, and over 40% of organizations' cloud deployments will include edge computing, and 25% of endpoint devices and systems will execute AI algorithms.
- Rise of microservices and Kubernetes. In 2019, most enterprise architects in leading organizations will view microservices and container-orchestration as critical architectural components of BI and analytics platforms. By 2022, 90% of all new apps will feature microservices architectures that improve the ability to design, debug, update, and leverage third-party code; 35% of all production apps will be cloud-native.
- In the near future, AI is likely to create more jobs than eliminate. Gartner predicts that by 2020, AI will create 2.3 million jobs and eliminate just 1.8 million. In 2019 and beyond, AI designed around people will have a higher impact than AI that takes people out of the process. By 2020, augmented analytics will be a dominant driver of new purchases of analytics and BI as well as data science and machine learning platforms, and of embedded analytics.
- Visualization, conversation, and presentation technologies will merge. In 2019, we'll see convergence among visual, conversational, and presentation technologies, facilitating persuasive storytelling. By 2021, conversational analytics and natural language processing will boost analytics and BI adoption from 32% of employees to over 50% of an organization's employees, to include new classes of users particularly in front offices.
- Platforms will evolve into systems In 2019, Platforms will evolve into virtuous systems, feeding off participation.



Damon Xi

General Manager, UCWeb India & Indonesia

Industry: IT

Industry Focus:

Disruptive technologies will usher in “machine-mediated conversational marketing”, which transforms content marketing by delivering the most relevant and personalized content to the audience. This will enhance customer experience and improve engagement in the near future.

Content marketing in India is not yet a significant plunge, neither for individual media nor brand marketers. However, the Internet environment is getting ready for it, and there is possibility it might skip the text and image stage, and jump to video-domain content marketing, especially when overseas video investment starting to penetrate in the Indian user base.

Our Focus:

UC is transforming from a browser tool to a content platform which focus on user’s personalized experience. It is committed to building a healthy content ecosystem and bridging the digital divide by letting everyone have the right to create and enjoy information.

In the era of mobile Internet, UC will usher in a faster development and embrace greater development prospects.

UC is proactively exploring both video and text content platforms so as to provide better content experience for Indian users.

While growing with the Indian market, UC shoulders the Corporate Social Responsibilities and is passionate for philanthropy. UC cares about education, children protection and women empowerment in India. We have initiated programmes such as UC Shiksha, women’s channel etc., with fruitful achievements.



Arun Parameswaran

Vice President and Managing Director at VMware India

Industry: IT

Industry Focus:

Over the next 2–3 years, I foresee greater demand for multi-cloud and hybrid cloud strategies. Customers want the flexibility to easily transition from private cloud to public cloud without overhauling the entire infrastructure. At the same time, they want to ensure foolproof security for their IT assets. I expect the conversations around both multi-clouds and security to intensify and customer demand for innovative cloud solutions that are flexible, scalable and intrinsically secure to increase.

I also expect to see increasing demand for mobility and digital workspace solutions. On demand access to data and applications is no longer a good to have feature but a basic business necessity. An increasing number of Indian customers want to explore strategies to digitize their workplaces to improve productivity and efficiency. Over a longer period, as technology evolves and grows further, I expect Cloud and Mobility along with Artificial Intelligence and Machine Learning and Internet of Things and Edge to emerge as superpowers. These superpowers have the potential to impact not just businesses but every aspect of life ranging from healthcare to education and retail to agriculture in the years to come.

Our Focus:

Over the next few years, we will focus on simplifying the complexities of a multi-cloud environment to ensure seamless access to any app, on any device and from any cloud. We work with four strategic IT priorities that we believe address our customers' requirements the best. These are: Modernize Data Center, Integrate Public Cloud, Empower the Digital Workspace and Transform Security. In the years to come, we will continue to leverage new and emerging technologies to launch innovative solutions that address each of our strategic priorities.



Sameer Soman

India MD, ThoughtWorks

Industry: IT

Industry Focus:

In ThoughtWorks, we say that there are 5 key seismic shifts or tech trends that will shape our customers' industries:

1. Big data and related technologies will have a massive impact on the way tech is being leveraged and used.
2. Platforms: everything will move from product based to platform based eco-systems
3. IoT: The number of sensors being put up everywhere and the amount of data being collected, and as they start talking to each other, IoT will start shaping the world. It has the ability to converge the physical and virtual worlds. Initially, industries like retailers and travel will use them, but eventually everybody will follow.
4. Robotics: The manufacturing industry has already been using hardware based robotics for automation for quite some time, but moving forward, soft robotics will start entering other industries, e.g. healthcare will use soft robotics for patient care, elderly care, etc.
5. Security and privacy: Unless customers and corporates seriously consider security, they won't be able to draw benefits from the other trends.

These technologies will be implemented using micro-services, API architectures, etc.

Our Focus:

Our focus will increase on Big Data, Platforms (especially infrastructure ones), and IoT. Moving forward, most of our customers and prospects will need the ability to unbundle and bundle products dynamically, for which they'll need a platform infrastructure. For this, they'll need to focus on APIs, a re-mediation layer, data, customer experience, etc. So platforms will be needed to do that. In case of IoT, hardware is becoming more programmable, and requires same level of skills as software, which is an opportunity for us.



Javed Tapia

MD, Clover Infotech
Industry: IT Services

Organizations are transforming the way they do business by leveraging the power of digital technologies.

Businesses are leveraging these technologies to be seen ubiquitously and to target customers contextually. With IoT, Virtual Reality, Augmented Reality etc. businesses are enhancing the customer experience. The interactions with technology are now better captured, recorded and analysed through Data Analytics capabilities. The power of artificial intelligence is enabling to enhance the learning curve and create unprecedented levels of automation. Computing and storage is chartering new levels of efficiency and cost-effectiveness with Cloud. I believe Information Technology coupled with the power of digital transformation will significantly and positively impact businesses across industries.



Nikhil Malhotra

Global Head of Makers Lab, Tech Mahindra

Industry: IT Services

Industry Focus:

- a) Conversational AI would have many more use cases coming up, especially around using NLP for cognitive text extraction. We would see innovations around Natural Language Processing (NLP) specifically, with virtual agents assisting customer journeys on a website, and more virtual agents talking to machines with IoT.
- b) More companies would start looking at commercially deploying Artificial Intelligence and Machine Learning solutions for things like predictive analytics.
- c) Blockchain would be hot in healthcare and financial enterprises, primarily for contract management.
- d) Edge computing would see more use cases with IoT due to the large amount of data being delivered and consumed.
- e) AR and VR would find more practical uses within the industry, like field engineers solving the last mile problem for educational purposes. In 2019, Education and healthcare sectors would see a larger percentage of use cases. Mixed reality sector still needs innovation in terms of wearables, but expect such innovations to appear over the next 2-3 years.
- f) Non-industrial Robots or Social Robots would see a surge in 2-3 years. Robots as wellness guides, social robots and other forms of robotics would enter daily life.

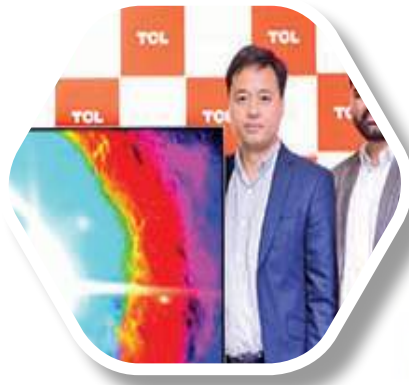
Our Focus:

We at Tech Mahindra are already investing heavily in these new age technologies and reskilling our workforce to meet the challenges and demands of these emerging trends in the future.

Specific focus areas of our clients would include – how to “run” operations better, how to “change” faster in a dynamic environment, and how to “grow greater” revenue pies. It would essentially be a mix of housekeeping and going towards the disruptive world.

Internally, we would adopt:

- a) DevOps and techniques to build code faster and ensure change reaches the market faster.
- b) AI and techniques of ML for internal operations and personalization of content for users.
- c) More focus on monetizing content and ensuring that the content stays personally relevant to end users and is available anytime and anywhere.



Mike Chen

Country Manager, TCL India

Industry: Manufacturing

Industry Focus:

The smart home entertainment industry is gearing up for a host of transformations. In hardware, newer technologies like 8K and QLED are poised to achieve greater maturity, thus enabling more accurate image recreation, higher picture quality, and more lifelike, vibrant colour representation. This will drive their popularity in the near future.

It isn't inconceivable that technologies such as 8K and QLED will become integral to all smart entertainment offerings, even products aimed at the mass market.

On the software front, Artificial Intelligence and Smart Home technologies will continue to disrupt the home entertainment landscape. These technologies will make TUs smarter and more capable of understanding the users' stated and unstated requirements. That more and more users will link their smart TUs to other smart appliances within their households is also a near certainty. This development will enable an end-to-end, immersive smart home experience.

Our Focus:

We are focussing on driving innovation display technology and design. We have invested heavily into display technologies like QLED and 8K, and will continue to further enhance our technological capabilities in these fields. As for design, we are looking to develop products which have frameless and have hyper-slim bodies, without compromising on the product performance or the entertainment quality.



Abhishek Kumar

Regional Director, South Asia, Oncam

Industry: Surveillance industry

Industry Focus:

AI will continue to dominate the IP surveillance industry in the years to come. It has been the most radical innovation in this industry, using which we can now extract valuable business-centric and process-specific insights in across-the-board operations. The tech also constantly analyses various factors to automatically build use cases, which helps draw more evolved insights, and enhances overall efficiency of the surveillance system.

Other tech innovations to have a telling impact on this industry include 360 degree field of view and integration of cybersecurity parameters to IP surveillance devices.

Our Focus:

To enable our clients to take data-driven business decisions.

Smart video technologies are a driving force in the development of both retrospective and real-time business intelligence, both of which provide data-driven insights for businesses based on the observable, real world: Real customers and real staff not a virtual representation of digital habits and behaviours. What that means is that analysis of smart videos using analytical tools and to look at unfiltered, unconsidered behaviours of people, assets, and vehicles within business environments.

So, front of house employees, aided with analytics built on top of smart video will effectively be able to have eyes in the back of their heads. Analytics built into IP-connected sensors will feed data either straight to an employee's mobile device or into a centralised dashboard for management to understand the totality of what happens in their business environment.

AI will continue to dominate the IP surveillance industry in the years to come...Other tech innovations to have a telling impact on this industry include 360 degree field of view and integration of cybersecurity parameters to IP surveillance devices.

Tech Heatmap* 2019

A quick look at technologies and their use cases across industries that are likely to have the highest impacted this year, from the most widespread to niche.



*Note: As per CMR's tech dossier survey.

About CMR

A part of CyberMedia, South Asia's largest specialty media and media services group, CyberMedia Research (CMR) has been a front runner in market research, consulting and advisory services since 1986.

CMR offers research-based insights and consulting services market intelligence, market sizing, stakeholder satisfaction, growth opportunity identification, incubation advisory, and go-to-market services covering the Information Technology, Telecommunications, Semiconductors, Electronics & Smart Infrastructure, Government, Energy & Utilities and Lifesciences sectors, as well as the large enterprise, SMB and consumer user segments.

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CMR's core value proposition encompasses a rich portfolio of syndicated reports and custom research capabilities across multiple industries, markets and geographies. CMR's forthcoming studies include stakeholder satisfaction surveys, mega spender assessments and market mapping studies for these domains.

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