The information technology-enabled services/business process management (ITeS/BPM) industry has been leveraging information and communication technology (ICT) solutions such as video-conferencing and cloud to enhance business efficiency. Being early adopters of technology, enterprises in the ITeS/BPM industry are now experimenting with big data, artificial intelligence (AI), internet of things (IoT), etc. to streamline business processes and automate operations. They are looking forward to interesting times with many of these technologies set for mainstream adoption. Leading enterprises in the ITeS/BPM industry discuss their IT roadmap, the technology trends and key challenges in implementing new technologies...*(From left - Shiva kumar Ganesan, CEO and Founder, Exotel; Ramesh T. Kumar, Corporate Information Systems, Mindtree; Mohua Sengupta, EVP and Global Head of Services, 3i Infotech)*

How have telecom and IT solutions helped in increasing business efficiency in the ITeS/ BPM industry?

Shivakumar Ganesan

I would like to point out four different examples of how ICT solutions are helping improve business efficiency. Companies in the logistics industry are integrating cloud communications

into the apps of last-mile delivery executives, who make calls through the cloud platform before going for a delivery. Using this process, companies have managed to create a standard operating procedure and their first-time delivery rates have improved significantly. Similarly, in the direct-to-home industry, executives go to customers' homes for installations. There has been a growing instance of customer complaints about delays in installation, which have been arrested through the deployment of cloud solutions. Meanwhile, real estate and credit card industries can address the issue of leakage of leads by deploying cloud communication solutions. I would also briefly touch upon the government sector, particularly gas agencies, where interactive voice response (IVR) systems have helped in improving the customer experience and business efficiency.

Ramesh T. Kumar

Mindtree minds are spread across multiple geo-locations and thus, enabling collaboration to increase their productivity is a big challenge. Availability of information for them through mobile phones is a key requirement. We use Skype for Business as one of the channels to collaborate for audio requirements and web collaborations to share information between various parties. This solution has been rolled out across the organisation and is used extensively for its daily collaboration needs as well.

For collaboration within small groups, we have rolled out Microsoft Teams, a platform that combines workplace chat, meetings, notes and attachments. Many use-case scenarios have evolved in using this platform. For example, our central proposal team is able to collaborate and share information effectively.

Mohua Sengupta

With a tectonic evolution in social, mobility, analytics and cloud (SMAC), Indian IT companies are rapidly scaling up their businesses to deliver digital solutions to global clients. Disruptive technologies, business exigencies and customer demands together shape the business strategy for delivering digital solutions along with traditional IT services. According to industry estimates, the export of digital solutions, which was pegged at 4 per cent of the total IT-BPM exports in 2013-14, has spiked to 14 per cent in 2016-17. The key drivers for this massive jump include the increasing demand for quality of experience, innovation in client business models, personalised customer services and improved operational efficiency. By 2020, the IT-BPM industry revenue is expected to rise to $200 billion-$225 billion and to $350-400 billion by 2025.

By 2025, the ratio of digital to traditional IT solutions would be 60:40, with global IT-BPM revenue expanding to $4 trillion.

What is your company's telecom and IT/ICT roadmap? How are the ICT initiatives implemented by the company benefiting the organisation?

Ramesh T. Kumar

Currently, we use Skype for Business for web, audio and video collaboration as well as third-party audio bridges with local dial-in numbers. At Mindtree, we are exploring a solution that gives integrated web collaboration as well as the audio dial-in feature for users to have seamless collaboration, especially users who need to join the meetings over the phone.

Key initiatives like chatbots enabled with AI are helping Mindtree minds to access HR-related information effectively and the management dashboards are helping businesses to visualise data from a single source of truth.

What is the current level of adoption of technologies like IoT, automation, AI, big data analytics and cloud in your industry? What are your plans in this regard?

Shivakumar Ganesan

There is 100 per cent adoption in terms of cloud technology and everything we do is on the cloud. As for IoT, one of the key innovations that Exotel has undertaken in the recent past is to allow our customers to be able to get a sense of reliability of the telecom network through an application programming interface (API). As for automation, we find ways to automate most of our processes so that systems can handle the basic work while individuals can focus on quality work. We are only 80 people in the company and are able to sustain large-scale operations because we introduced efficiency through automation. As for AI, I believe there is a lot of scope in terms of adoption. Today, the newer networks are a lot more intelligent than their old counterparts such as intelligent network (IN) and information management system (IMS). However, if we can get a computer to make decisions on behalf of humans, say, for routing a

call, I think we would have really introduced AI in telecom. As for big data, we process close to 4 million calls a day. That is a huge amount of data being generated at the backend. We use a lot of this data to learn more about the quality of the call, inter-operator connectivity issues, inter-circle connectivity issues, mobile-to-landline issues, landline-to-mobile issues, etc. A lot of analysis is put into how calls have matured in the past and, using this data, we try to assess whether or not a call that a customer is going to place will mature in the future.

Ramesh T. Kumar

At our Global Learning and Development Center in Bhubaneswar, we induct 400-500 campus minds every quarter, and we also have lateral users joining various locations. One of the biggest challenges is how to disseminate information to them without them having to reach out to anyone. We have implemented a chatbot called Maci, which is an interface for users to get information. For example, users can check their leave policy, apply for leave and have it approved by managers through the chatbot.

Our central helpdesk was supporting 25-30 per cent requests to change passwords or unlock accounts. We have automated this process through a self-service portal, which enables users to reset their passwords or unlock their account securely.

From the IT standpoint, we have created a security dashboard for tracking end-point compliance. We have taken out a list of all assets allocated to our users and are tracking agents, patches and antivirus signature status on the endpoints. This mapping has helped us to ensure that we are compliant with critical patches. We have created different levels of dashboards, which is relevant for different groups to ensure compliance.

Of late, with growing instances of cyberattacks, even our customers are asking for periodic compliance reports. These dashboards have created the flexibility to share information in no time, which, in turn, has enhanced user productivity as well as security measures.

Mohua Sengupta

Given the mature ecosystem created by the Indian IT industry over the past 25 years, the emphasis on innovative software products development and IP creation will drive further growth in the IT/ITeS/ ESDM sector. The increasing adoption of disruptive technologies including AI, IoT, VR, AR, cloud, robotics and machine learning by global companies for rapid automation will undoubtedly create huge opportunities.

Over the years, 3i Infotech has successfully transformed its customers' business operations globally, with a comprehensive set of IP-based software solutions and a wide range of IT services to address the dynamic requirements of the banking, financial services and insurance (BFSI) sector. Our offerings will cater to all levels of the mobility maturity curve, covering consulting, design and development, data testing, support, data intelligence and co-innovation. Mobility, together with new-age technologies, will form the bedrock for enterprises seeking a digital transformation.

The company helps enterprises move towards digital transformation with hybrid cloud, through its HybridNxT offering. It also invests in the areas of TaaS (telecommunications as a service), DevOps (development and operations), agile and CT (continuous testing) framework to meet the demands of enterprises.

What are the some of the challenges faced by the industry when implementing new ICT technologies?

Shivakumar Ganesan

The first challenge is the complexity in regulations across various industries. For instance, the BFSI sector has regulations around how stockbrokers must store their call recordings, how the ICT systems must store the data of their customers, etc. Then, there are broad-based telecom regulations; for example, it is not possible to mix a PSTN call with an IP call. There are many such regulations, which ultimately increase the complexity of ICT installations as well as overheads, and make the job of IT personnel and software companies difficult.

The second challenge is the inertia or risk-averseness to move from old technologies to new. I believe it is a mindset issue, which can be addressed by educating companies about new technologies. Another key challenge is that of disintegrated systems. There has been a rapid

proliferation in the number of software solutions that an enterprise uses. Earlier, there used to be only one enterprise resource planning (ERP) or customer relationship management (CRM) solution. Now there are CRM solutions for marketing, sales, support, ticketing, etc. There are too many systems and different kinds of software that enterprises are adopting, due to which there is no single place where all the information is available. Any technology that is able to seamlessly integrate all these disparate software solutions will see higher adoption.

Ramesh T. Kumar

Security has been of prime importance to us and the industry in general. Our organisation has grown multi-fold, which brings its own challenges in ensuring security. Some of our applications are on-premises while the rest are on the cloud, and integrating them in a secure way is a challenge. In view of new technologies coming in, skilling and re-skilling and availability of talent are always a challenge. Currently we have Y orbit, which is our learning portal, to overcome some of these challenges. With cloud adoption increasing, speed and higher bandwidth capacities are the need of the hour. The cost of increasing the bandwidth should be more competitive.

Mohua Sengupta

A key challenge faced by the industry, especially by small and medium enterprises, while implementing new ICT technologies in the country is that companies often lack the human technological resources needed for ICT implementation. Lack of awareness, uncertainty of ICT benefits, set-up costs, pricing issues and security concerns are the most visible barriers to ICT adoption.

From a technological perspective, any firm should have at least someone within it who has a reasonable amount of knowledge of technology in general. Therefore, without internal technological capabilities, utilisation of ICT applications may be difficult and sometimes dangerous in terms of system maintenance and failures. Enterprises need to entirely reshape existing systems because ICT adoption projects are complex in nature. In many cases, managers' decision-making process is rather intuitive, based on instinctive decisions and is less dependent on formal models of decision-making.

What are the key technology trends that will shape the industry in the next few years?

Shivakumar Ganesan

Over the next five to 10 years, convergence of devices and of communication media will emerge as a key technology trend. It will be possible for an individual to shift from one device to another seamlessly, in terms of not only connectivity but also in moving conversations seamlessly to the new device. Convergence of the medium is another interesting trend. Right now, we think of messaging, voice and video as media of communication. Within messaging, one can think of things like Facebook and WhatsApp. But all of media are walled gardens; they operate in silos that do not intra-operate with each other. We believe that over time, these silos will get removed and it must be possible for people to get into a conference bridge, talk through a PSTN call, convert that call over to a video call when necessary, share a screen and potentially send an SMS to all the participants in the conference call.

The second trend that we are likely to see is that the concept of a call centre as a centre will disappear. It could be possible for a person to be a part of the call centre from home, while travelling, in office, from a laptop, from a mobile, etc. We also believe that voice is the most natural form of human communication and right now the two key communication devices between an individual and a system are the keyboard and the mouse. Very soon, we believe almost all computers are going to understand human language.

Lastly, we believe that the cost of communication will continue to decline over time. There is a misconception that because the cost of communication is coming down, the relevance of telecom and telecom-based companies is going down. I believe it is the opposite. As the cost of communication comes down, people will connect with each other more often and for a longer duration.

Ramesh T. Kumar

Automation, AI and cognitive computing will shape the services rendered to end-users. This will bring in a lot more efficiency and enable teams to take up higher-level jobs rather than mundane jobs. At Mindtree, we are closely looking at these technologies to enable various internal services.

Mohua Sengupta

Cloud and big data are the two big technology trends that will continue to grow in the coming years. Analysts say that one of the more effective techniques to improve business processes is intelligent business operations (IBO). Converging process and real-time analytics will set in motion a perpetuating cycle of enterprise process improvement. A BPM suite can combine its sophisticated tool set with real-time data to streamline and optimise business processes. Huge investments are being made to develop solutions that cater to the new market requirements through the use of AI, robotics and automation.

The primary trend that will shape the BPM/ITeS industry in the next few years is robotic process automation and AI. The biggest revenue maker of the ITeS industry, the manned call centre of today, will soon become extinct. The smart call centre is already here and will slowly encroach on the share of manned call centres. Most of us will start talking to robots instead of real human beings. Similarly, a lot of other repetitive jobs that are done by low-level employees today will get done by machines rather than by people. This is the biggest shift that will soon completely transform the ITeS industry.

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