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# EXPRESS COMPUTER





# Driving Excellence Through Digital Initiatives

**An analysis of how digital initiatives in major organisations are leading to enhanced productivity, process efficiency, cost benefits and increase in revenue**


# COMING SOON

## SMART MANUFACTURING CONCLAVE

EFFICIENCIES | SCALE | LEADERSHIP

# PARTNERS, DO NOT MISS OUT ON 2020'S BIGGEST SMART MANUFACTURING BUSINESS OPPORTUNITIES

India's manufacturing sector has evolved - from industrialization to liberisation to the current phase of global competitiveness. Backed by competitive technology and talent, Indian manufacturing companies are fast expanding into global markets.

What's more, India is expected to become the fifth largest manufacturing country by the end of 2020, and the government has set an ambitious target of increasing the contribution of manufacturing output to 25% of gross domestic product (GDP) by 2025.

Can India, with its traditional strengths in software services, address the huge gap in manufacturing efficiencies? Can Indian manufacturers take advantage of technologies such as IoT, Artificial Intelligence and Big Data and improve efficiencies to a new level?

To get answers to these questions, join us at the second edition of a **"Smart Manufacturing Conclave"** a conference conceptualized by Express Computer, India's foremost business IT magazine, and part of the Indian Express Pvt. Ltd.

This, the second edition of **'Smart Manufacturing Conclave'** will be held on **17th to 18th April, 2020 at Hyatt Regency, Manesar.** The conference will focus on the latest insights, real worrld cases and emerging trends, to help CIOs and CTOs capitalise on the unprecedented opportunity to improve efficiency and scale.

We invite you to take advantage of this oportunity to participate in this conference, and gain from the benefit of interacting with decision makers who matter the most to your business.

## SPEAKERS WHO PARTICIPATED IN THE LAST EDITION INCLUDE

- Richard Dsouza, CEO, Mahindra Integrated Business Solutions, Mahindra & Mahindra
- Viral Gandhi, Group CIO, Piramal Industries
- Gyan Pandey, CIO, Aurobindo Pharma
- Jagdish Lomte, CIO, Thermax
- Ketan Karkhanis, Head IT, Clariant
- Swaminathan Venkatachalam, CISO, Godrej Industries.

## KEY TOPICS WILL BE DISCUSSED AND DEBATED

- Role of emerging technologies in making manufacturing smart
- Taking advantage of new technologies such as Digital Twins and 3D printing
- Industry 4.0 and Digital Supply Networks
- Real-time monitoring and proactive predictive maintenance of machines using IoT
- Using AI for making supply chains smart
- Enterprise security vulnerabilities on the shop floor

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# The role of technology in fighting deadly pandemics like coronavirus


Every disaster has a lesson for us, and if we do not take lessons from history, history more than often repeats itself. While India has had the experience of handling natural disasters like tsunamis and floods regularly, it has never been exposed to a pandemic like coronavirus. Since the outbreak started, more than 1,25,000 cases have been reported globally.

India can take a cue from China, which has heavily used technology to fight the deadly coronavirus. For example, China is using drones that allow its authorities to scan through large crowds. Drones are equipped with thermal imaging and can quickly detect people who have a fever. Chinese giant, Baidu has developed an AI-powered non-contact infrared sensor system that has been used in places like railway stations to quickly detect a person suspected of a fever.

To ensure that health caretakers are not put at risk, China has also deployed robots and drones to remotely disinfect hospitals and deliver food. In some places, ultraviolet disinfection robots are being deployed by hospitals to kill airborne and surface bacteria viruses. Autonomous or self driving vehicles have also proved to be a big help in helping the fight against coronavirus. In China, a self driving startup called Neolix, has deployed nearly 200 tiny robotic vehicles to deliver medical supplies as well as food to health workers.

In Taiwan, officials have integrated the national health insurance database with its immigration and customs database to quickly identify high risk individuals based on individual doctor visits and travel history. These individuals were also tracked through their mobile phones to ensure that high risk individuals were quarantined at home.

In China, a medical AI firm, inferVISION, has deployed its solution to help imaging departments quickly give a diagnosis. As the outbreak has put severe pressure, the AI solution is helping hospitals with limited medical resources to quickly screen out suspected coronavirus infected patients for further diagnosis and treatment. Similarly, Alibaba has claimed that its new AI algorithm can detect the coronavirus in CT scans with 96 per cent accuracy within just 20 seconds.

Mobile apps have tracking capabilities, and authorities are using it to prevent the spread of the disease. South Korea, for example, which has become one of the countries to be affected the most with more than 6,000 cases, has developed a smartphone app to monitor quarantined citizens. These citizens will be monitored for symptoms and tracked to make sure that they stay at home. In China, citizens can install an app that gives a red, yellow or green code to indicate the level of risk.

In a global pandemic, technology tools are vital weapons for effectively monitoring and controlling disease outbreaks, as humans simply cannot operate and match the scale and speed at what AI powered machines can operate.

> India can take a cue from China, which has heavily used technology to fight the deadly coronavirus. For example, China is using drones that allow its authorities to scan through large crowds

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# DRIVING EXCELLENCE THROUGH DIGITAL INITIATIVES

**An analysis of how digital initiatives in major organisations are leading to enhanced productivity, process efficiency, cost benefits and increase in revenue**

# ASHOK LEYLAND OFFERS MORE VALUE THROUGH DIGITISATION

At **Ashok Leyland**, the last few years saw strategies being implemented to take digital initiatives to the next level and the outcome was the launch of four digital business platforms, including the connected vehicle platform

**Moumita Deb Choudhury**
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India's second largest automobile company, Ashok Leyland has been driving its digital initiative for the past seven years, and is now well positioned with its focused endeavours. The company's initial focus with digital was cost and business optimisation and operational efficiency. The push is now on monetisation.

In tune with the government mandate, Ashok Leyland has readied itself for the BS 6 generation of vehicles, which are low on emission.

**The right plugs-ins**

For the last three years strategies were laid out to take the digital to the next level and the outcome was the launch of four digital business platforms including the connected vehicle platform; Service Mandi, a digital mobile app based platform which helps vehicles locate the closest local mechanics; e-Diagnostics, which helps the technicians to diagnose faults of the engine faster and troubleshoot; and Leycart, an e-commerce platforms from which customers and retailers can procure spare parts online. "All the platforms have picked up very well," informs Venkatesh Natarajan, Chief Digital Officer & SVP-IT, Ashok Leyland.

A separate business vertical was established to exclusively focus on customer solution business. It is seen that the total spent of a customer, over a period of 10 years of the purchase of a vehicle is around 5 million on the vehicle, including fuel cost, repair, insurance, etc.

The company rolled out Service Mandi on gauging that in the commercial vehicle industry, 70-75 per cent of vehicle repair happens post the warranty period, and most of the repairs are executed by roadside mechanics. Thus, the repairing market is very fragmented. The mechanics and technicians are spread all over the country. Ashok Leyland is trying to transform this segment into an organised sector and the medium is in the platform-Service Mandi.

**Fueling the data engine**

As data is becoming more and more significant so is AI and ML being put into multiple usages.

"There is a tremendous amount of data which is being churned out by the connected vehicles platform; most of our trucks are fitted with sensors. We launched telematics long back, at that time it was mainly for track and trace, we were just capturing the latitude and longitude of certain geographies. However, in the last four years, ever since, the introduction of BS 4 vehicles, significant amount of data is being captured, through the sensors. A good amount of data is available now to trace the health of the vehicles, and we are able to provide substantial details to the customers. Now we are using AI, ML and algorithms for mining more value and offer insights not just to customers but even we derive a lot of benefits," claims Natarajan.

The behaviour of the engine of these vehicles is determined by the data sets that are being flashed.

"Today with the help of technology, we can send across upgrades to the vehicles in a stroke. Through remote diagnostics, we can diagnose the fault of the vehicle sitting in a remote location. So if there are some corrections to be done in the datasets which can solve the issue, we simply flash the update 'over-the-air'. Unlike previously when the engineers had to identify the location of the vehicles, reach to it and then go ahead with the tweaking. Also, in case someone wants to immobilise the vehicle that can also be done remotely," explains Natarajan.

There is also a huge emphasis on cybersecurity and turning the entire process swift to make the system robust.

"Data has always been in barracks, but to enable digital transformation and boost up new revenue model, it is very critical that the data is pulled from the barracks and brought up to the front position and is in combat ready mode. Then the organisations will be able to use the data very instantaneously for building applications and solutions and run analytics as well. It is important to organise the data and arrange it," says Natarajan.

**Steering new age technology**

The company's chatbots are as smart and is put to multiple usage. "This is very popular, where one can ask for any information and get it instantly rather than searching for it from site to site. For instance, if a sales executive wants to know about the details of a particular model of vehicle, he can just communicate with the bot and get the information," he states.

"We have developed these bots for being digital assistant to the executives. However, now not just the Managing Director or the CEO has a digital assistant, several other employees can access it, thereby leading to a typical democratisation of information. The chatbots have become a very significant companion for all its users. We have named it MIHU (May I Help You)," Natarajan informs.

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>
> **Venkatesh Natarajan,**
> Chief Digital Officer & SVP-IT, Ashok Leyland

"We are now moving more and more into analysing how AI can be used more meaningfully in the organisation. Earlier computers used to be automated for the process of doing, now with AI the computers are now automating the process of thinking. AI is looked upon to significantly augment the capabilities of people working in the organisation," he stresses.

The success of the organisation is to look at ways and means using AI tech in various ways. Video analytics and image recognition are some ways. "Slowly we will see that AI is getting into the decision making system as well," points out Natarajan.

**Why is digital transformation so important?**

"Digital transformation is about looking around you and assessing which areas digital tech can be implemented. It significantly improves process efficiency, productivity, and reduces cost. Today in organisations, however digital is implemented for generating additional revenue for the company," says Natarajan, adding that when going with digital one needs to have patience, to see through how it matures over a period of time and bears fruits.

Citing a classic example, Natarajan say that digital initiatives can be compared to a bamboo tree. A bamboo tree when planted alongside other trees may hardly show any growth even in three years of watering it and supplying manure, whereas the other plants would be flourishing by then. However, suddenly the bamboo would start picking up and in no time it will be the tallest of all. Such is how digital is!

> There is also a huge emphasis on cybersecurity

# Mercedes-Benz banks on digital initiatives for competitive advantage

**MERCEDES BELIEVES THAT CONNECTED,** Autonomous, Shared and Services, Electric (CASE) are the four concepts that will shape the future of driving. While design has been a fancy for Mercedes, tech and IT is as significant. And if touch controls seem too tedious to operate then the company now brings out gesture control

**Moumita Deb Choudhury**
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Mercedes-Benz R&D India (MBRDI), headquartered in Bengaluru is the largest R&D facility of Daimler AG outside Germany. The vehicle engineering and IT technologies that spins out of the R&D facility provide cutting edge technologies to all other business units and brands of Daimler worldwide. New methods in Design and CAE, software content for control units, headunits and various critical engineering tools are its latest forte as it moves on to generate competitive advantage through these advancements.

**All that is digital at Mercedes**

Mercedes believes that Connected, Autonomous, Shared and Services, Electric (CASE) are the four concepts that will shape the future of driving. While design has been a fancy for Mercedes, tech and IT is as significant. And if touch controls seems too tedious to operate then the company now brings out gesture control.

"A lot of innovation is happening in the software area, at the same time the hardware is also picking up well. The focus is much on making the automobile smarter and increasing the comforts of the users. Artificial intelligence, machine learning, edge computing, cybersecurity, IoT, cloud solutions, along with the underlying network connectivity provided by telcos paves the path for connected infrastructure in the cars," says Raghavendra Vaidya, Senior Vice President - IT at Mercedes-Benz Research and Development India.

Mercedes Benz pivots its success on fulfilling and surpassing needs of various stakeholders across its value chain.

User experience in particular is a targeted focus at various touch points in the Mercedes vehicle. The infotainment system has been designed to be intuitive and intelligent. Driven by AI, it has the ability to learn user preferences, adapt and individualise the user experience. This enables establishing an emotional connect between the vehicle, the driver and the passenger. Further, with availability of "over the air", same time updates, users can be sure of receiving the latest software updates automatically.

The hardware experience is enhanced with high-resolution widescreen cockpit, touchscreen operation supported with a navigation display with augmented reality technology. Mecedes has also embedded intelligent voice control with natural speech recognition, which is activated with a keyword to provide superior control to users.

The GLE is the first SUV from Mercedes to feature the MBUX infotainment system. It includes a natural voice control system and a touchscreen. And it learns more about the driver's habits and preferences on every trip.

Another rich feature is the MBUX Augmented Reality Navigation. This enables users to navigate in complex traffic situations. MBUX connects augmented reality for navigation with the real world. The technology incorporates graphical navigation instructions and traffic information into live images, thus enabling a stress free driving experience.

> Artificial intelligence, machine learning, edge computing, cybersecurity, IoT, cloud solutions, along with the underlying network connectivity provided by telcos paves the path for connected infrastructure in the cars
>
> **Raghavendra Vaidya**
> Senior Vice President - IT, Mercedes-Benz Research and Development India

The natural, intuitive Linguatronic voice control system is capable of processing indirect speech as well. The voice control has also been enhanced with learning capability. It accustoms itself to the user's voice, consequently delivering more accurate results each time till the point it feels like one is speaking with another human.

With Mercedes me connect, one can stay connected to one's car at anytime and from any place. This enables users to control and monitor many features of the vehicle from fuel level to locking the car with one's smartphone. It has been designed keeping in mind the endusers by providing them with a range of comprehensive services to support them while on the move.

With the help of the data generated from the car, any technical fault can be diagnosed in real time and its fix can delivered instantaneously. "The whole idea is connecting your car. Collecting data from cars is now easier. This data can be used to identify problems in the car; it has several applications, which lie in how it is analysed," informs Vaidya.

**Electric vehicle**

With consumers' interest tilting more towards Electric Vehicles (EV), automakers are making inroads in this domain. Although the breadth of adopting of EVs in India is not as inflated as in China or other European countries, however with the Indian government now making a move towards switching over to EVs in a phased manner by 2030, is catching up steam.

Mercedes' EV EQC is in at the right time in India. When asked how does Mercedes see the readiness of EV infrastructure in India,Vaidya says, "This is a very complex environment with strict regulations. It involves aligning ourselves with existing infrastructure and make move accordingly."

# Otis: Transformation from mechanical business to digital industrial

**OTIS IS HARNESSING** the power of data analytics, machine learning and cloud computing to predict and prevent shutdowns, as well as prescribe services

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Leading elevator major Otis, has globally increased its R&D investment by nearly 50 per cent, hiring software engineers, data analysts and artificial intelligence experts, as it transforms from a primarily mechanical business to a digital industrial. This transformation is largely focused on empowering service teams as well as customers with information and communication.

Sebi Joseph, President, Otis India says, "We have built a powerful digital ecosystem that allows us to manage maintenance history, account details and other data in real-time, so when customers ask about a support issue, we can confidently provide solutions that are transparent and accurate up to the minute."

The company has been empowering field professionals with iPhones and customised apps that will help increase efficiency, expertise and capabilities. Placing sensors atop elevators that collect data and offer real-time updates on the elevator's performance, and providing customers access to transparent and real-time data.

For the field professionals, this information can be accessed on the apps. Most Otis field professionals now use smart phones loaded with custom apps to help them perform their job more efficiently. These digital tools help employees to diagnosis and fix issues faster than before.

"We're currently investing heavily in helping our field professionals get up to speed. Some of them are using older mobile technology or no mobile phones at all, which means that the jump in using technology is exponential. This is why we are investing efforts in training and other programs. Instead of receiving a service call and arriving with little-to-no information, they will be notified about the issue. Additional equipment performance insights for field professionals helps them arrive onsite ready with the tools and parts needed to get the equipment up and running faster," Joseph informs.

> We have built a powerful digital ecosystem that allows us to manage maintenance history, account details and other data in real-time, so when customers ask about a support issue, we can confidently provide solutions that are transparent and accurate up to the minute
>
> **Sebi Joseph**
> President, Otis India

For the field professionals, this information can be accessed on the apps

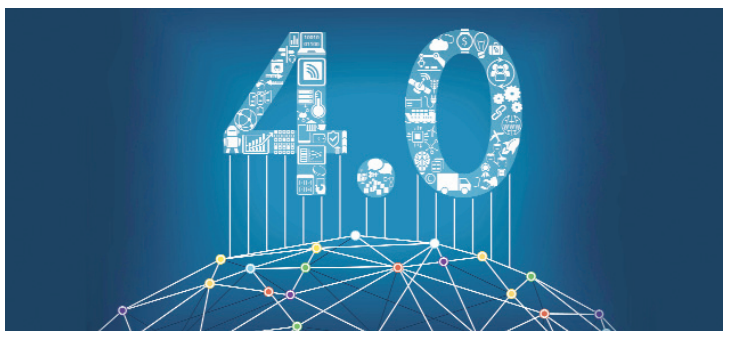
Regarding sensors and data, Otis is harnessing the power of data analytics, machine learning and cloud computing to predict and prevent shutdowns, as well as prescribe service. "With this, the company is able to analyse trends on our hundreds of thousands of connected elevators to create advanced algorithms that can predict performance trends," he says.

With remote monitoring and predictive analytics, Otis can concentrate resources on the elevators that most need attention. In the old days, Otis used to send a field professional out to check an elevator for routine, scheduled maintenance. This meant checking a number of elevators that didn't necessarily require servicing. "Now, instead of customers having to call us about an equipment issue, it alerts them before they're even aware of any potential problem," points out Joseph, adding that these advancements benefit customers, and this technology also enables the company to provide transparent and real-time data on their elevator's performance.

"Predictive modeling and health scores ensure our customers can see more about their equipment health to help plan for future maintenance costs. These are the ways Otis has embraced the digitalisation trend to integrate smart technology into its service business," concludes Jospeh.

# IIoT propels JK Tyre towards Industry 4.0

**WHILE THE BENEFITS** of the IIoT technology are vast, JK Tyre is looking to achieve cost vs output balance through the creation of IoT enabled networks



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Leading tyre brand, JK Tyre & Industries, is betting big on Industrial Internet of Things (IIoT) for migrating its existing manufacturing plants (nine in India and three in Mexico), producing 30 million typer per annum into connected and smart plants. As part of the digital transformation, JK Tyre has already started investing in its Chennai plant and planning to have fully automated and digitally-enabled plants by the end of 2020.

While the benefits of the IIoT technology are vast, JK Tyre is looking to achieve cost vs output balance through the creation of IoT enabled networks, that means the company can have better identification of issues before they occur, for example, potential breakdowns, optimisation of supply and reduction of costs through closer observation of the production network. Furthermore, it will allow having improved analytics and decision-making through relevant, real-time data. Even more, IIoT can bring efficiencies of scale in areas such as inventory, production, logistics, etc.

Sharad Agarwal, Head-IT at JK Tyre informs, "With IIoT, we are gradually moving away from legacy systems to new-age technologies. IT is no longer a support function, instead, it has become a way of driving a big change in the organisation towards digital. Besides making our production units technologically advanced on the product side we are creating buzz around smart tyres, which is a combination of tyre sensors and an app. The app presents real-time tyre pressure, temperature and gives an idea about the user's average fuel consumption, and even provides an insurance reminder. This device can convert any used tyre into the smart tyre. Currently, we are in the process of making this device commercially available at JK retail stores as well as electronics stores like Croma."

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>
> **Sharad Agarwal**
> Head-IT, JK Tyre

Another area where JK Tyre is making technology wise headway is connecting the extensive dealers and sales personnel network through a digital platform through which they can place and track order status. A CRM solution has been implemented, which helps the sales team to sell effectively and have a constructive discussion with the dealers.

To capitalise on the new digital world, manufacturers will need to reinvent everything they do, with digital as the backdrop. And by leveraging digital technologies, this transformation process can be more innovative, fast, scalable, and agile—getting manufacturers ready for the future, today. Agarwal also pointed out that before investing in new technologies our one of the priorities is low-risk cost structures, and continue to introduce product innovation. And with continuing technological advances like robotics, automation, big data and the IoT, we are seeing enormous change the way we operate now.

Legacy technology is another factor holding JK Tyre back. The average factory today is 25 years old, with machinery that's approaching nine years old. Before any plans of integrating the IoT can begin at these plants, they must first upgrade the equipment to enable digital readiness, driven by immediate goals of reducing costs and returns. The company is addressing interoperability issues that occur across legacy platforms with right skills sets and technology.

# Logistics control tower enhances supply chain efficiency for Hindustan Zinc

**THE TAT FOR** truck movements from the plant to the smelter has halved, reducing the truck movement and thus the fuel cost has also been curtailed


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Hindustan Zinc (HZL), a subsidiary of Vedanta Resource Plc, India's largest and the world's second largest zinc-lead miner is committed to embracing technology. HZL is well on its way to create the mines of the future. The company is adopting technologies for better resource consumption to gain enhanced metal recovery by digitising the beneficiation and melting process. According to the company, digitisation, innovation and use of disruptive technologies will improve the ore to metal recovery ratio from 81 per cent to 90 per cent in the next three years.

The CEO of HZL, Sunil Duggal, in the annual report of 2018-19 states, digital transformation of mines is a business imperative, with safety being the key driver. Improving safety, productivity, maximising Operational Equipment Effectiveness (OEE) and centralised monitoring are key pillars of the digital mine program being currently pursued. Sindesar Khurd mine is leading the digitalisation journey and the target is to bring all the other mining operations to the same level. An integrated collaboration centre at Udaipur is under development to give a real-time view of all operations, including mining, milling, smelting and other functions. Embracing the digital way of working will make operations more productive and sustainable.

**Logistics control tower for better logistics operations**

As a part of the efforts to provide real-time visibility and reduce logistics costs, the HZL has also completed project 'Sarathi'. It optimises end-to-end logistic value chain via real-time movement-tracking of key input and intermediate materials being dealt with at the three mines and equal amount of smelters located at different locations. It also includes the material handling at the Kandla and Mundra ports. The system is live across all legs of motion (plant, mines, smelters, ports, customers). The tower has been operational since the last nine months. Overall there is one control tower at each of the mines and smelter locations and one big central control tower at the HQ in Udaipur. It has 42 screens tracking the movements across all locations. The Integrated Transport Management Solution has been designed by TCS. The driver having a pre-registered slip in the ITMS can automatically move from the mine gate, which is unmanned. Similarly, if there are no alerts generated during the trip or even if they are, but have been resolved and have a go ahead from all the stakeholders, the truck gets an automatic entry at the smelter location.

**Scale of truck movements**

The iron ore is mined and a concentrated matter is prepared for it to be properly processed inside the smelter. The concentrate matter is then transported to a different location for smelting. "On a daily basis, over 4400 tonnes of concentrate matter is moved from the mines to the smelting locations across the country. Meanwhile, the iron ore and cathodes are also exchanged between various HZL locations, when required. There are about 300 coal filled trucks moving from the Kandla port to the HZL plant every day," informs Rohit Sarda, General Manager, Finance, Hindustan Zinc Limited (Vedanta Resource Plc). Moreover, the end products are also transported from the smelting locations to the customers. Daily, there are over 4000 truck movements happening across locations for HZL.

"Ensuring 100 per cent safety and compliances across all the vehicles become more complex as the number of vehicles, trips, and transporters increase. This is where FarEye's Digital Control Tower (DCT) comes in. From monitoring and managing KPIs, running distributed exception handling, providing real-time visibility, to reducing logistics costs, DCT has empowered Hindustan Zinc to completely transform its logistics operations." says Suryansh Jalan, President, FarEye Transportation.

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>
> **Rohit Sarda**
> General Manager, Finance, Hindustan Zinc (Vedanta Resource Plc)

Sharad Gargiya, Chief Commercial Officer at Hindustan Zinc Limited, comments, "HZL, through the logistics control tower, will control over more than 30,000 trips every month with zero manual intervention, thus, enhancing the efficiency of our supply chain and operations. Its machine learning capabilities have been generating accurate ETAs for Hindustan Zinc's customers. It also makes planning efficient routes easier."

Disjointed systems was also a major concern for HZL. Due to lack of interoperability between solutions, different systems had to be accessed for managing and checking different kinds of information.

**Logistics control tower results in rule based truck movements**

The truck trips hitherto couldn't be managed to the level of historical traceability. The authorities were in the dark even if there are aberrations in the routes taken by specific trucks. The GPS was operational since 2015, but it didn't had features to define rules in terms of routes, exception handling and resolution plan. Even if it is resolved over an email, then it didnt had an audit trail. "There were no features to analyse the drivers, transport provider, routes taken by the drivers, unauthorised stoppages, trips and route diversions, etc," says Sarda.

After implementing the control tower, over 75 rule based exceptions have been devised. In case of any breach of rules by the truck, an alert will go to the driver, the transport provider, the security person at the loading location, the central vigilance team - only if the exception has not been resolved at the subsequent level. The security person at the loading location will not allow the truck to enter unless the exception is resolved. The workflow is closed and only then, the truck gets an official entry.

> Connectivity on the road and in remote areas is a big issue

FarEye's platform leverages IoT devices viz - GPS, RFID, and Digital Locks technologies to drive actionable analytics around HZL's stakeholder and vehicle performances to identify bottlenecks and improve upon them. This platform also integrates disparate systems like the Transport Management System (TMS) and the Core SAP ERP system. This digital control tower orchestrates data flow and drives automated decision making with regards to operational execution.

As far as the hardware is concerned the company has used telematics, immobilisers, tablets, video wall and monitors to build the digital control tower.

Connectivity on the road and in remote areas is a big issue. FarEye solved the problem by using a mix of IoT devices, SIM cards, and GPS devices. Location data (received from GPS devices and SIM triangulation) is fed into FarEye's machine learning platform. It then predicts the estimated time of arrival in long-haul movements by learning the delays along the route including tolls and terrains.

The future plan is to integrate AI capabilities in the tower.

# Digital has been the language of transformation at Kent RO Systems

**DIGITAL HAS BEEN** in the core of Kent RO Systems Limited (Kent) , which has a base of over four million active water purifier installations, and handles around 10,000 service cases every day. **Saurabh Gupta**, Chief Information Officer, Kent RO Systems shares how it is a completely technology driven company

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Already a strong technology company, Kent RO Systems Limited (Kent) has a base of over four million active water purifier installations. The company handles around 10,000 service cases daily. Over the years the company had diversified into other products such as air purifiers, vegetable and fruit purifiers, vacuum cleaners, water softners, car cameras and other products. Digital has been in the core of the company.

"Kent is a completely technology driven company," says Saurabh Gupta, Chief Information Officer, Kent RO Systems. "The growth that we have registered over the years, would not have been possible, without the core digital technology that we have been building and running upon," he adds.

Talking further on the digital at Kent, Gupta states, "We do not bind ourselves to work with a particular technology. It is not like there is an agenda that we have start using AI. We first look at the business problem and as the business problem gets identified, we then start looking for the solution digitally."

**The digital design of Kent**

The company has been in the forefront to imbibe digital and emerging technology within the organisation.

"We were very early adopters for cloud, we moved into cloud sometime in early 2011. That's the time we started experimenting with cloud to understand how best it can help us. We did shift the entire CRM to cloud in 2015. We also have a proprietary ERP running. There are several solutions in place for our sales tracking whereby, whenever our sales person goes on field we track them to see where they are moving and what kind of sales are happening. So, we are

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>
> **Saurabh Gupta**
> Chief Information Officer, Kent RO Systems

> There is an AI driven chatbot which runs on the Kent website

able to identify each distributor and retailer point very well. We are able to identify the market very well where we have to start selling," he informs.

Kent has also embarked on several innovations, which are focused on its employees in an attempt to make their lives easy. "Our entire HR platform is online, thus there is no manual or paper task that is required anymore. The entire expense reimbursement is online. For reimbursements, one does not have to run around with the paper bills, all one has to do is scan the bill and submit and it gets approved. The whole process is through and through tech driven," he claims.

The company largely focuses on its customers, partners, vendors and its employees in terms of technology and attempts to address all these areas with technology.

"For the customers there are certain solutions, like they can call us or there is an app through which they can reach us. The app has around five million downloads now. They can use our automated mobile platform, whereby if the number is registered there is no need to call the agent, instead just the complaint needs to be registered and the issue would be addressed," according to Gupta.

There is an AI driven chatbot which runs on the Kent website, which can take the complaint, there is completely no human intervention required. "The chatbot is doing good job, it is well equipped to address most of the queries. If there are some quires which are beyond its comprehension, we than take it up separately," says Gupta.

There are also several other data, analytics and AI initiatives taken up by the company, which are targeted towards sales and market predictions. Kent is also up with its IoT enabled water purifiers. IoT is also used in Kent's factory at certain points. Also, the company uses IoT for energy conservation.

# Vision Havmor 2.0 by 2021: How IT is driving Havmor Ice Cream's growth plan

**THE IT ROADMAP** of Havmor Ice Cream includes 100 per cent cloud adoption, retail IT enablement for parlour channel, IIoT, data and analytics, and automation. In an interaction with Express Computer, **Dhaval Mankad**, Vice President – IT, Havmor Ice Cream, shares more insights

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Established in 1944, Havmor Ice Cream is a leading ice cream brand in India, having presence in 18 states, backed by over 400 distributors, and more than 40,000 active dealers and over 175 parlours. Sharing more about the company and his role, Dhaval Mankad, Vice President – IT, Havmor Ice Cream, explains, "Havmor is the only FMCG MNC having its presence across all channels – general trade, modern trade, HoReCa and parlour for customer experience. Owing to the speed at which digital transformation is affecting businesses, CIOs are expected to become more agile, responsive and drive business. CIOs need to find new 'WoW' – way of working – and help driving business."

**Havmor 2.0**

Mankad believes that, today, technology adoption or digital transformation are no more a choice. He says, "Everyone needs to challenge the status-quo to define an alternate way of working. We, at Havmor, are working to define Havmor Next or Havmor 2.0 with the right mix of people, process and technology."

IT adoption at Havmor cuts across all facets of the company's operations in the area of enterprise wide core processes – sales and distribution, parlours, sales IT enablement, asset management, etc. Whereas, on the infrastructure front, the company follows a cloud-first strategy, and has adopted end-point security and backups and cloud disaster recovery sites. Havmor has its core processes enabled on SAP which takes care of financial, costing, procurement, production, sales, material management and maintenance.

Elaborating further, he states, "We started our digital transformation and IT makeover journey in early 2018 and have progressed well. Project Parivartan – journey towards excellence – was started in October 2018 and went live successfully on April 1, 2019. While setting up SAP S4 HANA, we adopted industry best practices to refine few of the earlier practices, implemented actual product costing with cost and profitability analysis, multiple GAPP reporting, dual reporting and the core SAP organisational structure was redefined to meet future reporting needs and accommodate business expansion plans."

Over the last two years, Havmor has taken host of initiatives and implementation to strengthen its sales team with state-of-the-art IT tools to make them more productive and help business growth. The company has simplified over 15 processes, developed role-based processes and enabled sales team with the required data and dashboards on secondary sales, which is critical for business visibility. Mankad says, "We set up cloud-based point of sale software, HRMS, compliance tracking tool, cloud DR, asset tracking app and online payment gateways as part of our IT implementation plans. Field assets are a major focus area and we are working on a comprehensive plan with OEMs and other stakeholders for asset lifecycle management, covering asset request to deployment, service management and ensuring continuous validation of assets for tracking."

**Business benefits**

Havmor, as Mankad affirms, is adopting an agile approach with continuous evolution. The company is focusing on sustainable benefits, rather than short-term gains. Havmor is focussing on turnaround time (TAT), value and volume growth, market expansion and efficiency. For instance, with simplified process for outlet onboarding, Havmor has reduced entry time from 20 minutes to five minutes and reduced code generation TAT from a day to less than 30 minutes.

"We could open almost 2.5x times outlets during last the six months, compared to the same period year-on-year. Simplified asset deployment process has resulted in reduction of asset deployment TAT to 10 days from the earlier 22-24 days. We have been working on numerous process simplification and automation setps within SAP S4HANA, which has resulted into savings of more than 10,000 hours on annualised basis,"

> We are reimagining Havmor 2.0 by year 2021, and IT is seen as key business driver to fulfill Havmor's growth plan to drive market expansion and extraction, and new revenue streams
>
> **Dhaval Mankad**
> Vice President – IT, Havmor Ice Cream

informs Mankad.

**Emerging technologies**

The company is evaluating or doing pilot projects with emerging technologies in different areas. He says, "Efficient asset tracking and monitoring of asset utilisation is a great use case, wherein, we have an ongoing pilot project to track ice cream carts in market and freezers installed at the dealer's location. The other areas of focus are analytics, RPA, WhatsApp based solutions, etc – all under different stages of consideration. We did look at a few AI and analytics solutions and shall be taking appropriate decisions post thorough evaluation and aligning the right use cases. We are focussing on AI towards credit management and claims management in SAP and a few sales field processes."

**Industry 4.0**

As Havmor re-imagines itself on journey of digital transformation, Mankad considers Smart Factory or Industry 4.0, as a crucial component. Shop floor's overall availability, efficiency and performance are key factors to focus, along with digitisation of logbooks and getting insights from factory operations. He comments, "As the next step, we are evaluating IIoT based smart factory solutions to get visibility of manufacturing operations for monitoring availability, productivity, yield analysis and other parameters to become more efficient in manufacturing. We are working on establishing a pilot project for a couple of lines before full-fledged roll-out."

One of the major challenges is finding and retaining talent, especially one with business-IT acumen to drive business processes and digital transformation. Security is a growing concern, with increasing cloud adoption. Agility, speed of operations, faster delivery, flexibility of solutions etc are major expectations by businesses these days.

Mankad concludes, "We are reimagining Havmor 2.0 by year 2021, and IT is seen as key business driver to fulfill Havmor's growth plan to drive market expansion and extraction, and new revenue streams. Other areas of focus include, 100 per cent cloud adoption, retail IT enablement for parlour channel, IoT and IIoT, data and analytics and process automation. Our IT roadmap is based on four major pillars – SAP S4HANA, sales IT, distribution systems, and cloud. We are already on this journey and shall continue our initiatives around all these through continuous review, revisit and realignment."

# Havells introduces intelligence and personalisation at digital touchpoints

**A LOOK AT** how Havells is architecting its digital platform around business capabilities like personalisation, forecasting, recommendations, analytics, etc

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Havells is driving its digital journey across two broad themes, firstly creating the moments of truth by acknowledging that every interaction taking place between dealers or consumers has to offer a stellar experience. Secondly, digitally enabling and simplifying their business processes and thus drive efficiencies across the value chain.

"In order to support these themes, we are architecting our digital platform around business capabilities like personalisation, forecasting, recommendations, analytics, etc. Customer delight, product leadership, and respect for an individual have been always ingrained in our culture. Digital is also putting emphasis on agility, leanness and collaboration," says Ipininder Singh, Technology & Digital Transformation Leader, Havells India.

Last year, Havells was focusing on building and enhancing digital touchpoints with its multiple stakeholders, i.e, dealers, retailers, consumers, etc. And now, the company is looking at introducing intelligence and personalisation in those digital touchpoints, and build digital platforms to enable seamless amalgamation of various underlying technologies.

"We are combining geospatial intelligence and machine learning to show 360-degree view of dealers to our on-field salesforce. For the supply chain, we are leveraging machine learning to enhance our forecasting models and drive efficiencies. We have also piloted iIOT to drive the preventive maintenance of machines at our manufacturing plants," explains Singh.

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>
> **Ipininder Singh**
> Technology & Digital Transformation Leader, Havells India

For customers, Havells has launched a digital catalog with AR (augmented reality) capabilities, to simplify interactions and intuitiveness. Havells is leveraging AI for consumers to register their products or raise service requests. Singh and his team have developed algorithms for products and give recommendations to their customers. They are focusing on providing the omnichannel customer experience through WhatsApp. The company acknowledges that the user interfaces are going through a sea change and thus they are rolling-out bots using NLP engines.

"In order to drive efficiencies in our internal processes, we have already made a start with Robotic Process Automation (RPA)," he further adds.

**Digital impacting IT's role**

Organisations used to focus on optimising individual touchpoints that customers had with them, but now consumer experience is more horizontal, and cutting across functions. "We have a lot of collaboration happening across functions. We are experiencing co-creation happening within our business teams, and the era of IT working in silos is long over. Also, IT cannot stop at the delivery of solutions, it must lead the change," says Singh.

**Hyper personalisation**

Today companies are not only competing with organisations with the same product line, but competing against the experiences the customer seeks for the personalisation, speed, and simplicity.

Singh continues, "Hence, there is an entire platform being developed to drive personalisation and recommendation for customers. For our B2B space, we are working with one of the large e-commerce giants to customise their algorithms which they have used successfully over years for their B2C customers."

Havells is heavily consuming machine learning to create suggestive orders for its dealers, forecast seasonality impacts and provides intelligence on trends.

On the B2C front, the company is gradually adopting innovations like AR, AI for product information, etc.

# Safexpress leverages deep learning and computer vision

**SAFEXPRESS IS USING** cognitive computing, prescriptive analytics and deep learning for gaining competitive edge in logistics and supply chain

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Safexpress, is a market leader in logistics services with the largest supply chain network serving over 30,000 pin codes in India. In the logistics industry, it is critical to understand how to optimally manage the network and perform the load planning given the constraints of volume and vehicle weight capacity.

**Computer vision for damage detection**

"Safexpress is exploring the use of advanced AI and ML capabilities for damage detection. Some of our exciting technical work is happening in the space of leveraging deep learning and computer vision to understand unstructured image data and generate insights around it," says Kapil Mahajan, Group CIO, Safexpress.

The computer vision detection model is centered around identifying the damages happening while the goods are in transit from the originating source to the final delivery point. It churns through all the unstructured data in the form of package images captured during the loading and unloading points and detects and marks the damages in the system. This eventually will be linked to claims data to validate the damage claims from the customers and expediate the entire claim settlement process.

Mahajan further adds, "The second use case is around dynamically computing the network fleet capacity utilisation and future fleet planning using the images of the loaded trucks prior to their departure. Because we carry shipments of varying shapes and dimensions, so it's manually impossible to track this data across a fleet of 7,000 plus trucks." He further states, "Using computer vision we can process huge amounts of unstructured image data of every loaded and unloaded vehicle and the model can identify the capacity in a specific route and build data models that will get better as we refine and train them with larger datasets."

> All our fleets are connected, we get data from over 1300 connected digital assets like handheld scanners, GPS devices, etc. There is no manual movement of goods in the system
>
> **Kapil Mahajan**
> Group CIO, Safexpress

**Predictive & prescriptive analytics**

The company's focus from the last few months has been predictive and prescriptive analytics. "We are running certain POCs to build prescriptive models which use big data to understand the specific business patterns and aid decision making. We are leveraging cognitive computing to train the models which use a gamut of data sources and lot of historical data," he explains.

For weather prediction, Safexpress is leveraging IBM Weather Company data to predict impact of weather delays on the shipments and build models to analyse how do specific routes get impacted because of the seasonal weather patterns.

**IoT to track delivery**

Mahajan points out, "All our fleets are connected, we get data from over 1300 connected digital assets like handheld scanners, GPS devices, etc. There is no manual movement of goods in the system. So, from the booking to the last mile delivery of the goods, everything is done on a handheld device." The handheld devices have the capability to capture the image of the delivered proof of delivery document. And further use AI to read this document, and determine the picture as the physical proof of delivery document.

"We take close to a hundred thousand images a day and it's very tedious for a human eye to look at each image and give a pass to it before it can be shared with the users for internal and external consumption" he says. Hence, Mahajan has leveraged computer vision to sense and ensure the entirety and accuracy. He is introducing machine learning and cognitive abilities into all their business apps now. In the next phase he is planning to introduce cognitive into customers' interactions.

"We initiate our IT projects in the 'Innovation Lab', which works on emerging technologies. Most of our advanced tech prototyping is done inhouse using design thinking and if it's successful , we pilot it on the field to gauge the impact on the business before we scale it out," Mahajan concludes.

*Shiv Kumar Bhasin,*
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# The top barriers financial institutions face in their race to digital transformation

**WHY ARE DIGITAL** business transformations failing to deliver value? Low double digit percentage of IT leaders have seen sustained performance improvement from transformation efforts, and are successful at sustaining change

Financial institutions' staffs are too busy managing the third-party and first-party data and the associated tech complexity to implement the use cases they had in mind for the financial institutions' digital business transformation.

If most resources are required just to stay upright, then financial institutions clearly need help in their transformation. Why don't they get more help? When asking financial institution CIOs, the reasons in rank order are insufficient personnel, then digital skills, and funding, followed by fourth in the list, "unable to source needed digital capabilities from vendors or contractors". This last one caught my attention since implementing these digital capabilities yet given item three on the list is the lack of funding this budget for vendors may be moot. The CIOs are first overcoming these barriers through stakeholder engagement. Way down on the list at the seventh place is engagement of consultants. I'd like to argue that this is a mistake. Self-serving, perhaps. But not just consultants to build digital capabilities, but also consultants to help foster cultural change.

I picked this image, imagining a financial services CIO keeping objects spinning in the air, while on a tightrope 'crossing the chasm'—an all-engrossing and near-impossible task—to convey how this role does not currently allow for driving growth. While the resource barriers cited are significant, I believe the focus should be equally on the culture and mindset barriers to digital transformation.

**Business culture blocking change**

If your financial institution culture blocks change, start by asking 'why'. Evidently, humans do not like change. Surprise! Financial institutions have conservative cultures that reward consistency, predictability, and careful risk management. This has become a verb—"financial services on it". This kind of culture is going to attract people that self-identify with these qualities and want to be recognised and rewarded for them. People don't change much, so this quality is a fixture of financial services.

Financial institutions' need to convey how these very qualities are necessary for a successful transformation of a financial institution is to deliver consistent, predictable results, manage risk, and sustain the conservative and reliable quality that allows customers to trust the bank with their money. Communicating this counter-intuitive idea could help align teams to embrace change.

Key reasons include:

- Weak management understanding of digital business
- Weak change leadership, planning or execution

**Organisationally we are not innovative enough**

Can a financial institution import the right culture? If anyone choosing financial services is inherently change-averse, can a financial institution acquire a fintech to tip the balance towards change-makers and risk-takers?

How about hiring change agents to lead the financial institution through its transformation? This could help with items three and four on the list of barriers—boosting understanding of digital among management and strengthening leadership. Financial institutions face significant challenges in recruiting for these roles. These are unicorns, so non-traditional candidates may be more effective.

> Automation of operational readiness is key for successful digital transformation

**Leadership is key to culture**

Given the allergy to anything new, allies among the establishment are critical. If a member of the old guard is at the forefront of change, this will influence holdouts. Typically, those leaders are close to retirement age, not wanting to rock the boat, and more likely to maintain the status quo. What would be their motivation? I struggle here. Should it be the intellectual challenge of being an old dog learning new tricks or the pride of ending a career as a dynamic leader? Can it be financial incentives, with executive retirement packages having more strings attached to performance in the final years?

While financial institution leadership readily answers a survey acknowledging cultural barriers to change, this is not their core competency; in fact, it is an area in which to ask for help. Start by appointing a Chief Culture Officer, with investors, financial institution as a model for success. A financial institution created the role and found that helping execs' experience the merit of kindness and empathy in their own personal development was then something they wanted to scale. A culture of kindness actually drove business efficiency as employees in this environment more quickly came to an agreement. The softer quality of cultural barriers means they get less attention and funding than the more concrete demands. Demonstrating the business value of a strong culture can help change that.

**Must adopt an outcome focused approach**

CIOs must adopt an outcome-focused approach to digital strategies and investments as digital societies progress. Digital functioning will not develop in isolation, and digitally augmented ecosystems will continue to emerge and evolve, placing new expectations and pressures on financial institutions to provide access to data and digital services that are easily consumed. CIOs must continuously communicate a sense of urgency and ensure organisational readiness so that their digital innovation keeps pace.

**Leveraging data for digital transformation and innovation**

Data is at the heart of the digital transformation of a financial institution. Financial institutions are looking to data and analytics to reliably and accurately detect and predict shifts in risk, opportunity and outcomes prior to their occurrence. Financial institutions must look to data to drive innovation through improved management, targetted data sharing and AI-augmented data analytics capabilities.

**Skill challenges**

The pace of technological change will continue to accelerate, forcing organisations to invest in acquiring the skills necessary for digital transformation. Machine learning (ML), artificial intelligence (AI), cloud, DevOps, security and many other technologies impact every IT role.

Technical professionals must focus on quickly understanding, integrating and operationalising new technologies. Acquiring the right set of skills to undergo digital transformation is imperative.While the pace of technological change is accelerating, the demand to deliver solutions more quickly is also increasing. To succeed, technical professionals must focus on increasing agility across the IT organisation.

**Operational readiness challenges**

Agile and DevOps is the de facto approach to develop and deploy applications to enable continuous delivery. IT leaders, along with application developers, must operate as product teams, deliver self-service platforms, and design for resilience to drive digital business innovation. Automation of operational readiness is key for successful digital transformation. SOP (standard operating procedures) must be in place for handling different scenarios to sustain production systems' uninterrupted service at every situation with best ITIL compliant automation tools deployment and best monitoring tools deployment.

*Girish Nayak,*
*Chief - Service, Operations and Technology, ICICI Lombard GIC*

# How companies are leveraging data in the insurance sector

**BIG DATA,** for the insurance sector, has now become a business imperative

*"Without big data, you are blind and deaf and in the middle of a freeway."*
*– Geoffrey Moore*

Data is the biggest currency today. Mining data accurately not only helps in cutting down on fraud claims, but also helps in identifying new prospects, increasing sales, and engaging better with customers. In recent years, top companies and leading sectors like insurance have come to recognise that to compete with the extremely-agile data-driven competitors they must become more adept at leveraging their data assets. Big data is not just a buzz word any more. As consumers demand more from insurance companies, the need for a more efficient way to examine risks grows as well. Big data, for the insurance sector, has now become a business imperative.

The volume of data generated today is enormous. It is said that 90 per cent of the data generated was created in the last few years and this period is only going to get shorter. Datasets now are far more massive than what they used to be. This is because data now is being captured by multiple devices like smartphones, smartwatches, cameras, RFID devices, sensors, etc. Furthermore, there is abundant use of mediums like social media where the culture of 'views', 'likes' and 'shares' reveal a lot about likes and dislikes of the consumers.

Insurers in developed nations are known for their technology adoption and extensive use of analytics. They are used to predictive modelling to analyse customer behaviour, conduct segmentation, roll out offers and forecast claims. In India, insurance companies too are just starting to implement behavioural modelling and analytics.

Insurance, at its core, is a customer-centric industry. Intrinsically, the impact of data on customer expectations is an essential consideration of how insurers use data. Customers want a simple and transparent selection of insurance policies. They want to be able to connect with their insurer across channels, no matter what device they are using, where they are or when they need information. They also expect that their insurers should know the full extent of their previous interactions and be able to assist them quickly.

> Insurers making the best use of big data are best equipped to give customers delightful experiences

Data has always been at the core of the insurance industry business model. Right from product initiation to managing claims pay-outs, insurance operations continuum is highly data-dependent. As the insurance landscape grows increasingly competitive, insurers are undertaking a slew of measures using big data analytics, ranging from bespoke products, accelerated claims settlement processes to advanced fraud prevention strategies, to live up to the challenges.

The secret to operational excellence lies in assimilating these datasets into meaningful insights to enrich the customer experience while maintaining profitability. Big data has proven to be a potent tool in the hands of insurance administrators. Unlike traditional data processing applications, technology allows insurers to manage and analyse complex datasets.

Big data-powered approaches find an answer to various business questions regarding the evolution of customer needs, the development of effective marketing strategies, customer retention measures, etc. Further, a comprehensive study of customer behaviour helps in setting up of proper support and guidance systems, enhancing overall user experience. Insurance marketing has also achieved a new dimension with the addition of demographic data points in the equation. Also, it is important that companies lead the way in developing technologies that empower users and set the right safeguards for data protection between technology vendors and insurers.

Having good data is one thing; knowing how to maximise its effectiveness is a different ball game. Insurers will need absolute speed and accuracy to deal with the huge volumes of data. Insurers making the best use of big data are best equipped to give customers delightful experiences while transforming their business practices with next-generation technology.

# Progressing to a digital Jharkhand

**THE CLOUD FOR DIGITAL GOVERNANCE:** The Tour, organised in Ranchi recently, highlighted how Jharkhand is looking at quick adoption of emerging technologies

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Manish Prakash, Executive Director, Public Sector, Microsoft India

Deepak Kumar, Senior Technical Director, NIC

Namit Sinha, Head - Government Vertical, Microsoft India

Siddharth Tripathi, Commissioner, MNREGA, Government of Jharkhand

Shashi Ranjan, CEO, Ranchi Smart City and IG Prisons

Sumit Kumar, VP, Operations, Atal Bihari Vajpayee Innovation Lab, Department of IT, Government of Jharkhand


Panelists at the discussion

To recognise Jharkhand government's efforts in embracing IT and emerging technologies to simplify citizen services, Express Computer in association with Microsoft India, organised Cloud for Digital Governance: The Tour, in Ranchi, on February 20. The event witnessed participation of IT decision-makers from the Jharkhand government and NIC Jharkhand, who also attended Microsoft Azure 900 certification training.

Manish Prakash, Executive Director, Public Sector, Microsoft India spoke about the fourth industrial revolution happening in today's era. He said, "Today's industrial revolution is different from other revolutions in the past. The fourth revolution is the extension of the digital revolution that started with electronics, but it's very different as it brings digital, physical and biological aspects together. At the core of this is artificial intelligence, IoT, genetic engineering, nano technology, but the one driving force is the AI."

He said Microsoft as an organisation has taken huge leaps and bounds in driving the concept, agenda, technology, platform and the impact of AI in many different ways. Not limited to robots, connected driver-less vehicles, AI goes beyond the realms of technology to solve the problems of today. Microsoft endeavours to go and reach out to the sustainability goals that the UN has in areas like poverty alleviation, climate change, farmer security and safety among others.

Siddharth Tripathi, Commissioner, MNREGA, Department of Rural Development, Jharkhand government said rural development is like the elephant in the room. He said in all developing countries, including India, governments have not been able to comprehend the rural development sector itself. "Poverty is multi-dimensional. Someone is poor because he doesn't have a roof over his head, someone does not have good education, but unfortunately in the government to address all these issues, there are different departments and they are separate from each other," he mentioned.

Akhilesh Jha, DIG, Jharkhand Police, Government of Jharkhand said Jharkhand has an eagerness for tech adoption and the state is willing to adopt emerging technologies. He said, "When we compare Ranchi with other major cities in Jharkhand, we find there is a huge gap in the capability of technology," adding that Jharkhand Police is successfully running the Centre's ambitious project CCTNS which connects each police station with higher officials of the whole country. He said the State Police started digitising all of its data from 2000 onwards. He added, "We have various services like police online and other services are being developed. Jharkhand police is willing to collaborate with Microsoft. I was thinking about where AI can be used in many areas," he said.

Jha said there is a little amount of skepticism about using facial recognition and it can be used for tracking criminals and tracing missing persons, adding that AI can be of immense value in this domain.

Shashi Ranjan, CEO, Ranchi Smart City and IG Prisons, Government of Jharkhand said that the government has a lot of data but if there is no technical know-how then people will not be able to get insights out of it. He said that his department has huge data, but the challenge is analysing the data and incorporating it in policy formation. "The vision of having world-class amenities should come through interaction and intervention of AI which augments the thinking capability," he shared.

Sumit Kumar, VP, Operations, Atal Bihari Vajpayee Innovation Lab, Department of IT, Government of Jharkhand, said, "We have around 107 startups that we have selected through our process. More than 30 per cent startups are from IT or ITeS domain. When we talk about AI, there are many queries from the startups related to lack of access to data. There could be a way where we could provide data on an open platform in a machine-readable format where the concerned agency can use it for their research work."

Deepak Kumar, Senior Technical Director, NIC, Government of India said, "The government has decided to integrate NHAI check posts with the state-run posts to raise the revenue. A majority of 52 lakh registered vehicles in the state comprises of a large part of tax defaulters. AI can play a vital role in tracking such tax evaders and make them clear their dues."

# Digital India 2.0: Govt transforms with emerging technologies

**EXPRESS COMPUTER** collaborated with BMC Software and organised a focused conference themed 'Digital India 2.0: Enabling the government for a better citizen services delivery Xperience' on February 26 in Delhi

**Mohit Rathod**
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Fireside chat: R Chandrasekhar, Former Secretary, Department of IT & Telecommunications, and Former President of NASSCOM and Srikanth RP, Group Editor, Express Computer and CRN


Dr Neeta Verma, Director General, NIC


Panel discussion: Role of emerging technologies in improving e-governance services


Sunil Kumar Thakur, Country Manager, BMC Software India

The Government of India is riding on a huge digital transformation path – from building apps on the public cloud to using analytics for better service delivery, every central/state department is looking to leverage the power of technology to significantly transform the way it functions or delivers service. The conference, organised by Express Computer and BMC Software, focused on how government agencies can leverage emerging technologies like AI and ML to improve performance and delivery of digital services.

**Driving government initiatives**

The conference kick-started with a keynote address by Dr Neeta Verma, Director General, NIC, who spoke on the role of emerging technologies in government initiatives. She said, "Over the decades, we have engaged with various state governments, central government and district administrations for numerous initiatives, such building IT services, platforms and schemes, and service delivery to citizens at various levels. The Government of India is very ahead in terms of technology adoption. In several instance, many new technologies have been adopted by the government, much before they became mainstream in the industry. The smartphone boom has further brought another revolution in e-governance, and has brought in the concept of self-service. The penetration of broadband and cloud has brought another paradigm shift. As we add AI and ML into our platforms, it will further take us to new levels. A crucial component of Digital India 2.0 is a big platform, wherein we are connecting nation-wide systems through open APIs. IoT is another technology, which can be applied in multiple areas.

**Government – The enabler**

Another highlight was the fireside chat between R Chandrasekhar, Former Secretary, Department of IT & Telecommunications, and Former President of NASSCOM and Srikanth RP, Group Editor, Express Computer and CRN India. Speaking broadly on the vision of a digital India, Chandrashekar said, "We have had many accomplishments. We realised that e-governance has to be a movement across the government, for it to be successful, and connect the government with citizens. The national e-governance plan has marked a transition to focus on service delivery to citizens. As part of this large national effort, some of the flagship programs, such as CSC and Aadhaar, have become the foundation of Digital India. The overarching view of e-governance as an integrated program has been a driving force."

Elaborating on the role of new-age technologies in the government sector, he added, "The emerging technologies such as AI, ML, augmented reality, IoT and blockchain are coming at a pace, which is much greater than our ability to adapt. These technologies are infinitely scalable, extraordinarily powerful, and can be implemented quickly. They are also affordable and can be personalised at scale. For a country like India, all of these characteristics are important."

**Smart governance**

Sunil Kumar Thakur, Country Manager, BMC Software India conducted an insightful session on 'Digital India 2.0 – Smart Government with AI'. He said, "Prime Minister Narendra Modi has recently said that a huge proportion of digital payments and startups come from Tier 2 and Tier 3 cities. This means that citizens from these cities will through different channels to connect with the government. In order to service these masses, we need an autonomous digital enterprise. Application of AI and ML to the existing platforms in government will make them more efficient and enhance citizen experience."

Speaking about about BMC Helix Chatbot, Thakur said, "Most bots on websites are text-bots. However, at BMC, we have embedded AI and ML into all of our solutions. This enabled our bot to deliver a human-like interactive experience to users."

The conference also featured a panel discussion on the role of emerging technologies in improving e-governance services. The discussion was moderated by Nivedan Prakash, Senior Assistant Editor, Express Computer and CRN India, and participated by RS Mani, DDG, NIC and Project Director, National Knowledge Network; Maj. Gen. Sandeep Sharma, National Technical Research Organization; Vikas Guru, Vice President and OSD to CEO, GeM; Madhukar Kumar Bhagat, IRS, Commissioner of Income Tax; Anurag Dua, Partner, PwC; and Gunal Kannan, Area Vice President, Pre-Sales – APJ, BMC Software.

R S Mani said, "From all the initiatives we taken undertaken, we have created a huge data pool, ensuring security is key. There's a need to have a technology in place, in order to find security threats and predict for the future."

Providing interesting insights from the defence sector, Sharma informed, "The challenges in front of the Army are different than those faced by e-governance. However, with efforts by the armed forces and the government, things have improved exponentially. For instance, we are now the second largest holder of OFC in the country. We have further streamlined our processes through initiatives such as Armaan."

Guru explained in detail the various initiatives undertaken by GeM. He said, "We have an advantage of being a late mover in this technology era. We are already using most of these transformational technologies." Similarly, Bhagat explained the flagship Aadhaar based instant PAN application initiative. Dua was of the opinion that India has witnessed a leapfrog in terms of technology adoption in the public sector.

Kannan added, "We aide government organisations with not just products, but innovations. We have been in the market for more than 40 years and have over 470 patents. We are envisioning future organisations to be more autonomous."

Technology Sabha 2020

# Tech-enabled governments raising the bar of e-governance

**FROM BEST PRACTICES** and case studies on innovative use of technology to the future of e-governance enabled by emerging technologies, the 27th edition of Technology Sabha re-imagined the way governments connect with citizens

Lamp lighting and inaugural ceremony

Shri Naveen Patnaik, Hon'ble Chief Minister of Odisha

Shri Tusharkanti Behera, Hon'ble Minister, Electronics & Information Technology, Government of Odisha

Shri Manoj Kumar Mishra, IRTS, Secretary, Department of Electronics & Information Technology, Government of Odisha

Shri Naveen Patnaik, Hon'able Chief Minister of Odisha being conferred with Technology Sabha E-Governance Leadership Award in recognition for exemplary e-governance initiatives that have set benchmark in India

Shri Manoj Kumar Mishra, IRTS, Secretary, Department of Electronics & Information Technology, Govt of Odisha being conferred with the Digital Icon Award in recognition of numerous IT initiatives in the state

Shri Ashok KK Meena, IAS, Principal Secretary, Department of Finance, Govt of Odisha

Shri Anubhav Patnaik, Advisor, Electronics & Information Technology Dept, Government of Odisha

Dr Omkar Rai, Director General, STPI

Puneet Chawla, Chairman & Managing Director, RailTel Corporation of India

Pratibha Singh, DDG, NIC Odisha

Fireside chat between Shri Manoj Kumar Mishra, IRTS, Secretary, Dept of Electronics & IT, Govt of Odisha, and Kamal Kashyap, Director and Country Manager, Public Sector, HPE India; moderated by Srikanth RP, Group Editor, Express Computer and CRN India

**Mohit Rathod**
**Moumita Deb Choudhury**
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Reaffirming itself as a premier e-governance conference in India, the 27th edition of Technology Sabha was held in Bhubaneswar, Odisha from February 14-15, 2020. Express Computers' flagship initiative, Technology Sabha gathered high-level dignitaries from the Government of Odisha and government sector IT decision-makers from across the country. The conference was graced by Shri Naveen Patnaik, Hon'able Chief Minister of Odisha, along with esteemed dignitaries from the state government including Shri Tusharkanti Behera, Hon'able Minister, Electronics and Information Technology, Government of Odisha; Shri Manoj Kumar Mishra, IRTS, Secretary, Department of Electronics and Information Technology, Government of Odisha; Shri Asit Kumar Tripathy, IAS, Chief Secretary and Chief Development Commissioner, Government of Odisha; Shri Ashok KK Meena, IAS, Principal Secretary, Department of Finance, Government of Odisha and Dr Omkar Rai, Director General, STPI.

Giving his welcome address, Mishra said, "Odisha's IT exports have crossed ₹ 4,000 crore, which places us among the top 10 states in India. STPI has played a tremendous role in the country's IT ecosystem. Bhubaneswar houses one of the first three STPI centres in India. We are the scale, whereby we are poised to take the next leap. Our IT policy stands on four pillars – Education, infrastructure, policies and leadership. Under the aegis of our hon'able chief minister, the IT sector is the second most important sector in the state. Bhubaneswar has also ranked no 1 among smart cities, because we have created world class IT and social infrastructure. Bhubaneswar is the only city in Eastern India that has presence of the top five IT companies. We are now re-inventing our policies to make them the best in the country. We are coming out with IT, ITes, BPO and data centre policies."

In his special address, Behera commented, "This national event gives a platform to e-governance thought leaders to set benchmarks to enhance governance using technology. Technology Sabha provides an opportunity for all the participants to share their views and experience, and come up with new ideas for providing improved and convenient services to citizens. The vision of our department is to use IT to transform Odisha into an innovation and knowledge based society, focusing on inclusive growth through citizen-centric and participatory governance. The IT and electronics department is playing a huge role in making the Chief Minister's 5T mantra successful, enabling governance to reach the doorsteps of citizens. The Government of Odisha has been following methodical approach by preparing ICT policy, e-governance roadmap, promotion strategy, IT procurement procedures, ESDM policies and guidelines. We are focused on creating an ICT-enabled environment to support citizen-centric service delivery and boosting productivity and efficiency."

He further added, "We have a platform called Odisha Secretariat Workflow Automation System, through which, all file movements are done electronically since 2008. We have also successfully implemented various projects in education, health, public distribution systems, etc. We are focusing on creation of an ecosystem to meet the expectations of IT, ITeS and ESDM firms and offer them a better, enabling environment in the state."

Giving the chief guest's address, Patnaik said, "Our focus is on finding technology-driven solutions for every-day issues, and making technology a way of life. Technology has changed rapidly, from desktop to laptop and mobiles, from Internet of Things to Internet of Everything. Keeping this in view, the IT sector is on the top of the government's agenda. Odisha is a leading state in the field of governance. Various e-governance initiatives have been taken in areas such as land record, urban services, disaster management, education, policing, grievance redressal, among others. Odisha is the only state which has re-designed government process, whereby citizens need not visit government office for availing services, unless mandated by law. Our 5T mantra, Transparency, Technology, Teamwork, Time – leading to Transformation, remains the bedrock of good and responsible governance. In every sphere, we are aiming at using the best of technologies. Besides setting a benchmark in disaster preparedness, Odisha has emerged as the top performer in the startup ranking 2018. My government is committed to take all possible steps to build the right ecosystem to make Odisha the leader in technology."

Technology Sabha
An Express Group Initiative
INDIA'S LEADING E-GOVERNANCE SUMMIT
FEBRUARY 14-15, 2020 BHUBANESWAR

### Pioneering e-governance

One of the many highlights of the conference was the fireside chat between Manoj Kumar Mishra and Kamal Kashyap, Director – Public Sector Sales, HPE India, moderated by Srikanth RP, Group Editor, Express Computer and CRN India. As Mishra states, the overarching vision for using technology for improving governance is to connect with each and every citizen. Speaking about the Mo Sarkar initiative, he said, "Running since October 2019, Mo Sarkar is an exercise to change human behaviour in government offices with the help of technology. When citizens visit government offices, we want them to be treated with professionalism and dignity. This initiative has improved the satisfaction level of citizens from 60 per cent to around 85 per cent; in a short period. We also have eight STPI centres in the state, the highest among all other states in the country."

Sharing his views on emerging technologies that can further help the government, Kashyap said, "We have been privileged to be part of various initiative of the government, including the state data centre. IoT could be a technology which can help the state monitor its vast area."

Further elaborating on areas of collaboration, Mishra added, "We are upgrading the entire OSWAN, in order to have seamless data flow among all offices. We have around 4,000 months, which will be increased to 8,000 in the coming months. To build this structure, a collaborative approach is key. Development of citizens is crucial for development of the state; and we are looking actively at skilling."

The role of Software Technology Parks of India (STPI) has been instrumental in developing and promoting the IT ecosystem in Odisha and across India. In his keynote address, Dr Omkar Rai, Director General, STPI, stated, "STPI is at the forefront for promotion of software exports and the IT and electronics industry. The export in 2019-2020 stood at US$ 130 billion; whereas, it is estimated to grow to US$ 147 billion in 2020-2021. The IT industry contributes 7.0 per cent of India's GDP. India has 56 per cent of global IT outsourcing industry. STPI is continuously respositioning itself to meet the IT industry's demands. STPI wants to ensure that Tier 2 and Tier 3 cities also contribute to this growth. We will support 10,000 technology startups in five years; of which, 2000 will be from Tier 2 and Tier 3 cities. STPI will spend ₹ 6000 crore on software infrastructure. We have also launched a centre of excellence (CoE) for augmented and virtual reality in Odisha."

Shri Ashok KK Meena, IAS, Principal Secretary, Department of Finance, Government of Odisha, said, "A lot of systems have been developed and put to use by Odisha. For instance, OSWAS is an end-to-end solution wherein almost 97 per cent of files are processed electronically. We also have numerous other systems, thereby forming an ecosystem."

Indian Railways is known for its vast network and operations globally. Sharing insights on digitisation of Indian Railways, Puneet Chawla, Chairman and Managing Director, RailTel Corporation of India, in his keynote address, said, "Indian Railways carries 22 million passengers on a daily basis and has 13 lakh employees. Today, the user profiles are changing and this hyper-connected world has more connected devices than individual. RailTel is the ICT arm of Indian Railways and the fifth largest telecom infrastructure provider in India; and now we have transformed into an integrated ICT service provider. We have a multi-tier network architecture to support voice, data and video requirements. Our vision includes having incubator and accelerator units for the railways. We have deployed IP-based video surveillance systems for passenger security at 6124 railway stations across India. From April 2020, we will provide content-on-demand, which will be a game-changer in the country. We have already developed an ecosystem to support this project."

In a special address, Pratibha Singh, DDG, NIC, said, "NIC has re-caliberated itself in accordance with Odisha's mandate and the state's 5T mantra. We have developed a centralised farmer resgistration system and mobile-based pest advisory and weather monitoring system. Odisha is running a 100 per cent online transaction based system."

Gautam Ghosh, Deputy Director General, Department of Food and Public Distribution, Ministry of Consumer Affairs explained the computerisation of TPDS and process overview, which includes grievance redressal, online RC management, allocation generation process, transparency portal, supply chain management. In his

Dr Sreyash Satpathy, Senior Vice President & Head - Central Ministry, Government Coverage Group, Axis Bank


Manas Ranjan Panda, Jurisdictional Director - Odisha, Bihar and Jharkhand, STPI


Panel discussion: Adopting a proactive stance towards cybersecurity - Importance of cybersecurity


Panel discussion: Transforming nation through emerging technologies - The role of e-governance in citizen services

Kamal Kashyap, Director - Public Sector Sales, HPE India

Gautam Ghosh, Deputy Director General, Department of Food & Public Distribution, Ministry of Consumer Affairs

Abir Banerjee, Country Manager, Aruba, a Hewlett Packard Enterprise Company


Prasun Srivastava, Senior Solutions Architect, India and SAARC Region, Thales Cloud Protection & Licensing

Ruchin Kumar, Regional Director – India & SAARC, Utimaco

Sumit Wadhwa, General Manager - Head of Government Business, Samsung India

Kishore Shah, CEO - SPOCHUB, ESDS Software Solution

Power discussion by ESDS Software Solution


Power discussion by Samsung


Recipients of Express eGovernance Recognition Awards

Recipients of STPI Smart Exporter Awards

session titled, 'One nation, one ration card', Ghosh said, "A total of 27 states have adopted supply chain automation and 4.58 lakh fair price shops have installed PoS machines," while adding on integrated of public distribution system – some of its features include creation of central depository, de-duplication at national level, implementation of national portability and data analytics.

**Transforming through dialogue**

The panel discussion on, 'Transforming nation through emerging technologies: The role of e-governance in citizen services', was moderated by R Gopalakrishnan, IRTS, GM - Data Analytics, CRIS. The esteemed panel consisted of Sarvesh Singhal, Special Secretary, CEO, JAP-IT & Director, Space Applications Centre Jharkhand, Department. of IT & e-Governance, Government of Jharkhand; Padma Jaiswal, IAS, Secretary, Directorate of Economics & Statistics, Government of Puducherry; Ashish Kumar Singh, IAS, Principal Secretary, Transport and Ports (Home) Dept., Govt of Maharashtra; Srinivas Pendyala, Joint Secretary, e-Gov, ITE&C Dept., Government of Telangana; Abir Banerjee, Country Manager, Aruba, a Hewlett Packard Enterprise Company; Kishore Shah, CEO - SPOCHUB, ESDS Software Solution.

The panalists pointed out pertinent points such as while implementing emerging tech we should consider citizen's acceptance of it. Odisha is exploring skilling in Gig economy, digital media, apprenticeship, etc. Also, the students' certificates are secured in digilockers in Bhubaneswar. It was informed that government of Puducherry will monetise data for engaging in a public private partnership.

The panel discussion was followed by another interesting panel discussion on 'Adopting a proactive stance towards cybersecurity - Importance of cybersecurity. It was moderated by Muktesh Chander, IPS, Special Commissioner of Police (Operations), Delhi Police. The panelists included Sabarish Karunakaran, Head, e-Governance, Senior Principal Scientist, Kerala State IT Mission, Government of Kerala; Dr. Gopal Krishna Nayak, Director, IIIT Bhubaneswar, Y. Mallikarjuna Reddy, Director, IIDT Tirupati; and Shrikant Shitole, Senior Director & Country Head - India, FireEye.

The panelists came up with several informative comments like, cyber security is like a neglected child, and hence hardly any budget is allocated to it in organisations. It was informed that cybercrime is on the third slot in the world criminal activity list. Also it was pointed out that the providers of cyber security should realise that the technology should be less complex to use and that just having highly expensive gadget does not ensure cyber security, instead the awareness towards it does. It was also informed that we have more connected IoT devices than the entire human population today.

The two-day conference also recognised leading e-governance projects by governments across the country, with Technology Sabha Awards 2020. Speaking at the awards ceremony, Anubhav Patnaik, Advisor, Electronics & Information Technology Department, Govt. of Odisha said, "The Government of Odisha is committed to build a citizen centric, inclusive and development oriented information society where everyone can create access, utilize and save knowledge in a seamless manner to achieve full potential in promoting sustainable development therby improving the quality of life. The Governmnet of Odisha has been following a methodical approach by preparing overarching polices like ICT policies, e-governance roadmap, promotion strategy, IT procurement procedure, ESDM policy and guidelines and following closely to create a ICT enabling environment to enable citizen centric service delivery as well as boosting productivity and efficiency."

**Partners in transformation**

The two-day technology intensive conference featured numerous technology providers showcase their offerings, which can further boost digital transformation in governments. In a session titled, 'Accelerating e-governance initiatives in India', Kamal Kashyap, Director – Public Sector Sales, HPE India, said, "The technology world will evolve to be edge-centric, and e-governance will be cloud-enabled and data-driven. In the future, HPE envisions 'government as a service', which will redefine e-governance. Citizen centricity, security and data are three important factors of a digital government platform. Bhopal Smart City is a real-life example of open data portal for citizens and localised government cloud ecosystems."

In a separate session on advanced network and security solutions for today's modern government demands, Abir Banerjee, Country Manager, Aruba, a Hewlett Packard Company, stated, "India is transforming from 'data poor' to 'data rich', and there is a need to extract meaningful insights from data. Aruba is well positioned to address this. The new challenge today is learning about users from their interactions. The new digital world is all about connected factories, enterprises, cities, villages and citizens. Organisations need to be mobile-first, cloud-first and IoT-centric."

Mobility is among the crucial components of digital transformation in governments. Focused on 'Evolution to new mobile economy', Sumit Wadhwa, General Manager – Head of Government Business, Samsung India conducted a session wherein he said, "Mobility is at the core of an open economy. For every PC sold, five mobile phones are sold in India. The new era of disruption is happening due to AI, IoT, VR and AR, and Samsung is at the forefront of these technologies. Furthermore, 5G will bring a new wave of transformation through various applications. Over one billion devices are using Samsung Knox globally. Samsung builds over 60 per cent of the components for its devices, which further makes it more secure. Samsung Knox is enabling transformation to 5G and IoT in the mobile industry and it is ready to connect with the next generation of disruptive technologies."

With growing data pool and increasing adoption of new-age technologies comes a challenge – security. In a session titled, 'Data protection and key management, Prasun Srivastava, Senior Solutions Architect, India and SAARC Region, Thales Cloud Protection & Licensing, said, "We have been present in the Indian market since 1953, and have made significant investment. We also have major R&D centres in India and globally; we spend US$ 1 billion on R&D. Whereas, our exports from India stands at ₹ 800 crore. Data is the core product today, upon which many industries are build and we urge organisations to spend their security budget on data-oriented security. Encryption technology is as pervasive as data, and it's the most flexible technology to be used on edge devices."

Another session focused on security was titled 'Security and key management for payment systems', wherein Ruchin Kumar, Regional Director – India and SAARC, Utimaco, informed, "We are the oldest company for hardware security modules in cyber security, and our products have maintain a track record of adhering to leading industry standards and certifications. Blockchain transactions are becoming a reality today. Utimaco Block-safe value proposition offers blockchain specific generation of public and private keys. Block-safe hardware security models help governments ensure secure transactions."

Giving a perspective on digitising India, Dr Sreyash Satpathy, Senior Vice President & Head - Central Ministry, Government Coverage Group, Axis Bank, said, "Building a sustainable and scalable model should be the essence of e-goverance and disruption is required in the areas on fintech, AI, Digital Planet and blockchain." He also informed that Axis bank offers segment-specific solutions and is collaborating with start-ups to build and innovate products and offer an entire gamut of services to create seamless experiences.

Sepaking on 'Mission – Nation with DX, Kishore Shah, CEO – SPOCHUB, ESDS Software Solution, provided insights into the company's offerings. He said, "Over 200 partners are included in our iPAS platform. India is the largest country in terms of mobile technology adoption and we are trying to help governments in proactive governance. SPOCHUB is designed for ISVs and customers and its USP is assuring customers with quality process."

**Power of discussions**

In an interactive power discussion session with delegates in the government sector, Samsung put forth some of the products and solutions of the company outlining their usage and utility in various functions. A J Sirajudeen, Chief Manager, Enterprise Technical Solutions, Samsung, described how the company's smartphones can be put to multiple uses at an organisation. Briefing about other use cases, he mentioned that these smartphones are used for Anganwadi monitoring system, whereby audit of all registers of Anganwadi centres in done, and it is ensured that the supervisors visit each and every centre. The smartphones are also used for forest resource management, whereby forest rangers carry the devices to digitally feed in the details pertaining to the resources in the forest.

In another power discussion session, the team from ESDS Software Solution provided insights into the iPAS platform, which ensures proactive governance and technology integration. During the session, audience from various government departments shared their respective initiatives and challenges, which were well addressed by the ESDS team. For instance, in the area of training, ESDS has subject matter experts who train customers. Elaborating more, a representative from ESDS said, "iPAS offers 360-degree view and monitoring on work. The solution offers dashboard for district collectors, providing statistics to them. We have done iPAS implementation in two phases in the west and east part of Maharashtra."

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The India data center market size is projected to reach USD 1.5 billion by 2022 from USD 1.0 billion in 2018, growing at a CAGR of 11.4% during the forecast period (2018-2022).(Source: Research and Markets).

This is set to accelerate further, due to the Indian government's focus on data localization, which will encourage every business entity to host their data within India.

Considering the exciting developments in India (a host of technology majors setting up their own data centers), and the huge interest with respect to innovations in data centers, Express Computer, an IT business magazine from the Indian Express (P) Ltd., has decided to launch the inaugural edition of t**he Data Center & Infrastructure Summit.**

We invite you to participate in this conference, and avail of several rich opportunities – from one-on-one meetings, to power discussions, industry awards, an exhibition showcase, and conference tracks – to win the business you seek.

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- Lessons from the Masters: From migrating to the cloud to software defining a data center, CIOs share their perspective on key lessons learnt from the trenches
- Building an enterprise cloud strategy
- The perfect cloud: How to make private, public and hybrid clouds work to your advantage?
- Preparing your data center for the IoT revolution: What do you need to do now?
- Making emerging technologies work for you – a hands on guide from thought leaders on emerging technologies (AI, edge computing, Kubernetes, Containers, SD-WANs)
- Best practices for securing your cloud-based applications and protecting your data center from ransomware and DDoS attacks
- The 10 must have tools for a data center administrator

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