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Technology Senate

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This year, the Technology Senate will be hosted on 20th - 22nd June at the Hyatt Regency, Pune and will focus on the digital transformation of enterprises enabled by emerging technologies such as AI, Blockchain, Virtual Reality, IoT and Big Data.

This year, Technology Senate will also include senior technology heads (CIOs, CTOs, GM-IT) from PSUs. In total, Technology Senate will see the presence of over 100 senior CXOs and thought leaders.

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CRN EMERGING TECH CONCLAVE

In the past, India has been fortunate to leapfrog generations in several technologies, such as the time when the country leapfrogged into the mobile wireless era. This holds true for the digitalization era wherein both enterprises and governments are implementing / leveraging emerging technologies like AI, IoT, and Blockchain to enhance business performance as well as driving innovation in their industries.

As more and more organizations are embarking on this digital transformation journey, it brings a plethora of opportunities for the channel partners, who are joining forces with the vendors and their customers to co-innovate and build upon the emerging technologies.

CRN India recognizes this synergistic collaboration between vendors and partners; and hence, we believe that this is a perfect time to hold a national / multi-city conference on emerging technologies covering AI, Blockchain, IoT, Big Data Analytics, and RPA (Robotic Process Automation).

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COMPLETE TRANSPARENCY: Attendee database will be provided to partners (Name/ Designation/ Company)

KEY POINTS

- The transformative potential and impact of emerging tech with practical use cases
- Competitive advantage for partners who are taking digital-first approach and gaining incremental market share
- IT@2020: Preparing skills for the future

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- Panel Discussions
- Thought Leader Insights
- Partner Presentations

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Usage of AI becoming mainstream in India

With increased awareness about the transformative power of AI, the adoption of AI is now being seen across many industries. From large banks like HDFC Bank to e-commerce players like Pepperfry, AI is being used for a variety of use cases. HDFC Bank uses an intelligent AI-enabled bot for improving the efficiency of the credit decision process. Eye balling is of paramount importance in the credit decision process, and the bot mimics a human by eye balling the customer demographics for those who have applied for loans against the already existing base. For the signature verification process for clearing cheques, the bank is using machine learning with almost 80 per cent accuracy to process more than 2.5 lakh cheques a day.

> For the signature verification process for clearing cheques, HDFC Bank is using machine learning with almost 80 per cent accuracy to process more than 2.5 lakh cheques a day

RBL bank is using an AI backboned model to identify the optimal loading of ATMs. The AI solution analyses the customer's behaviour and ATMs, in order to refill the ATMs on a timely basis. Using AI, RBL has been able to maintain the fine balance between not letting the money lying wasted in ATMs (which is an expense for the bank) and ensuring that customers do not feel dejected in case of insufficient money in the ATM. The AI-powered model has proved quite successful, and the bank is being able to load 20-30 per cent less money in the ATMs.

E-commerce player, Pepperfry, is using AI to aid in product discovery for end users. AI is used to determine the appropriate products for a particular customer and the sequence in which these should be displayed to them. At Yes Bank, candidates are interviewed by an AI bot on a one-way video platform. Based on insights from the interview, the AI solution makes the first level evaluation much more convenient and effective without human bias, especially in large volume hiring. The solution also creates personality reports, for each job applicant, which tells Yes Bank about the applicant's relevance to the job.

Online pharmacy, Netmeds, uses AI to rate a particular prescription. As pharma product recommendations cannot be recommended to a user, the pharmacy uses machine learning and analytics to profile customers and recommend FMCG products or products that do not require a prescription and complement the pharma products that the customer buys. Apollo Hospitals is leveraging AI, ML to effectively guide patients and clinicians so that the clinical outcomes are further increased to the highest possible levels and ensuring the best quality and safety.

As more use cases emerge across industries, one can expect the trickle of AI success stories to become a flood!

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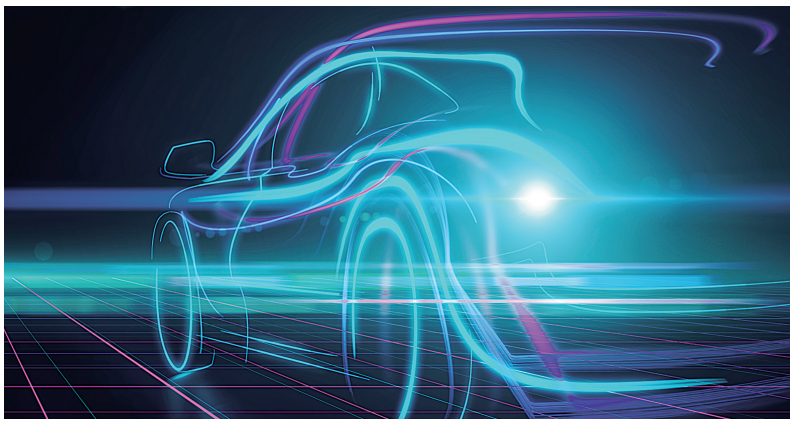
Lessons from digital transformation

Leading CIOs share how they have successfully charted the roadmap to digital transformation in their organisations

'In all our IT initiatives, we ensure that the customer is at the centre'

IN AN EXCLUSIVE INTERVIEW with Express Computer, Rajesh Uppal, Executive Director – IT, CIO and CHRO, Maruti Suzuki, speaks about his organisation's customer centric IT strategy

By Salvi Mittal & Abhishek Raval



What are recent digital initiatives at Maruti Suzuki?

The automotive industry is at a critical point in its journey, where the long term growth is going to be tremendous, with astonishing numbers in the next 10 years. Therefore, to manage that growth and deliver the increasing demands, IT has to support the transformation to move forward.

We are aggressively enhancing the customer experience and are working at dealerships to provide them a digital experience - online and offline.

Being the head of HR and an IT professional, I am focusing on the HR processes and technology innovation. We are managing the entire employee life-cycle on a digital platform, from hiring to employee self-service and performance management.

In order to be a forward-looking organisation, we are evaluating ways to transform our enterprise applications and make the infrastructure agile and open enough to conduct various interactions with multiple stakeholders.

For knowledge management, we are identifying ways to manage the unstructured data and big data, which will deliver the sense out of that data.

Digital twin as a technology has a lot of potential for the auto industry. Any plans on those lines?

Definitely; especially in the area of customer experience and engagement, we are looking big at Digital Twin technology. The customer works with us online, and when he walks into our showroom, we know who he is and what vehicles he is looking at. We offer the experience as per his expectations. In all our IT initiatives, we ensure that the customer is at the centre and we build our IT strategy around it.

Emerging technology is a big space and there are many technologies which have their respective maturity levels. Please highlight some PoCs that you are working on and which PoC is closest to go on to the production?

Robotic Automation Process (RPA) is a mature technology to work on. It is beyond the PoC stage and has started to add value to the business.

We started IoT sometime ago, which is also maturing and is giving results in the shop floors' efficiency and provides proactive management and visibility.

In big data and ML, we are currently at the PoC stage. A large amount of data has started to pour in through various sources, and data can be consumed really well in our various organisational functions.

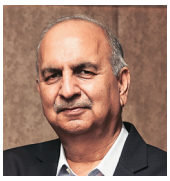
Under AI, we have basic bots and are becoming commoditised. But we are getting a deeper sense from our big data. We have a lot of PoCs under AI and we see promising results.

We are also leveraging virtual reality in various areas.

Please describe how are you leveraging RPA?

Standalone technology was taken up jointly with Suzuki and Maruti team together. Further, we had use cases from Japan and India, and POCs were initiated. The first POC was in finance, where a lot of documentation is now digitally managed, and the results were phenomenal.

We have identified around 40 areas where RPA can be implemented, and gradually getting them on the platform. Since the infrastructure is laid down, now it's just the matter of driving value in these areas. RPA is a tool to drive the efficiency and all the while collar will be using RPA, initially its only been used in the areas where a lot of transactions are happening.



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>
> **Rajesh Uppal,**
> Executive Director – IT, CIO, CHRO, Maruti Suzuki

> The first POC was in finance, where a lot of documentation is now digitally managed

I view Robotics Process Automation as an immersive technology used by everyone in the organisation. RPA will soon become an office tool for everybody.

On the hardcore technology side, from an IT infrastructure perspective, any IT referral cycles coming up?

In my view, IT hardware is very commoditised, new areas and plants are coming up are all back-end job. But a lot of applications are moving from on-premise to cloud area, so we do not have the infrastructure issues. For me, the cloud initially was cost saving, to handle these changes but now these cost-saving areas are becoming the area where you can quickly adopt new technologies.

What business outcome have you seen from these initiatives?

These are all business projects, rather than the IT initiatives and digital has been at its core driving the business results. The objective is to take the business to the next levels, which converts into the bottom line.

How traditional businesses are disrupted by a spark of the digital

VS PARTHASARATHY, Group CIO & Group CFO, Mahindra & Mahindra, gives a perspective of how traditional businesses are getting disrupted by the digital phenomenon

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The agility of technology has made its application spiral beyond all bounds and its seismic spread is evident and felt in every sector. VS Parthasarathy, Group CIO and Group CFO, Mahindra & Mahindra gives a perceptive of how traditional businesses are getting disrupted by just one spark of the digital.

Drawing a comparison, he shows a picture of a street in New York in the year 1900, where only one car could be seen among several horse-drawn carts; and then he swiftly changes the image to the one where there was only one horse-drawn cart among many motor cars in the year1913. "This is what happens when technology takes route. In 13 years, the tsunami of technology has changed the face of the street," he stated.

Technology has changed the countenance of industry in phases. "We started with industry 1.0 which saw basic mechanisation. Then dawned industry 2.0 where mass production was the essence of the tenure. Industry 3.0 is a mesh-up of automation, computer, electronics. The forthcoming Industry 4.0 will be a period where there will be one human plant manager, but the rest of the workforce will be machines," he informed. "According to a plant manager, today, machines can talk to each other enabling preventive maintenance, also the entire planning can be done online. The flow is automated and technologies including artificial intelligence, machine learning, big data can be put to use. Leveraging these technologies, mass production is possible more seamlessly," he added.

Focusing on his area of expertise, he said, "The automobile industry is getting disrupted at a Sputnik speed. At one side, the car OEMs, are vying with each other and on the other, the IT companies are up the sleeves to build a technology-robust car by getting the OEMs to physically assemble the parts. And if this is not enough, there are ride-hailing companies like Ola and Uber, which already has a platform and may look to redefine the transportation industry. It is thus becoming increasingly difficult to define the levels and contours of competition and from where it is coming."

> The future is about micro-entrepreneurship, whereby an individual will work for more than one company and company loyalty will derive new meanings
>
> **VS Parthasarathy,** Group CIO and Group CFO, Mahindra & Mahindra

> The forthcoming Industry 4.0 will be a period where there will be one human plant manager, but the rest of the workforce will be machines

Parthasarathy shared that car manufacturers, General Motors and Ford were big names in the automobile landscape for a long time. However, Tesla was launched in 2012 and over took the cap of General Motors and Ford in five years. This is an example of how traditional industry got disrupted by a spark of innovation.

Today the financial market is also not untouched by the technology paradigms. "You never heard of an ATM card before, but now we cannot do without ATMs. Not just that, crypto-currency, payment gateways and cash pooling among others are more commonplace than ever," he pointed.

On the equation of job scarcity and wealth he said, "We often see jobs are scarce even though there is no scarcity of wealth. The trouble here is not wealth creation but wealth distribution. India's GDP is 2600 billion, while it is 20,000 billion in the US. This accounts to 1200 dollars per capita per person. However, if we grow at the pace we are growing now which is about seven to 10 per cent while the US continues to grows at one percent, then by 2030 we will equal the GDP of the US. In tune with this process, people will invariably become wealthy. The only issue then will be wealth distribution."

"Emerging technologies are impacting the society, people, governance and businesses," said Parthasarathy, adding, "The future is about micro-entrepreneurship, whereby an individual will work for more than one company and company loyalty will derive new meanings."

"The mantra to a successful business is not conglomeration but federation and enabling the workforce, by allowing them to learn and re-learn," summed up Parthasarathy.

(The spokesperson was presenting at the Emerging Tech Conclave in Kolkata, organised by Express Computer)

Digital transformation at Tata Steel to have EBITDA improvement worth billions

THE DIGITAL PROGRAM WILL entail leveraging digital and IT to achieve business KPIs, which will impact the topline and bottomline. The company is following the stated vision of being a pioneer in digital steel making by 2025

Abhishek Raval
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In the beginning of 2018, Tata Steel has undertaken a massive transformation program enabled by digital technologies to create EBITDA improvement. "We are not talking about millions here but billions. The impact will be in billions," stresses Jayanta Banerjee, Global CIO, Tata Steel.

The program will entail leveraging digital and IT to achieve business KPIs, which will impact the topline and bottomline. The company is following the stated vision of being a pioneer in digital steel making by 2025.

In order to achieve the goal, the business, digital and IT have to work together. A dedicated team with IT skill sets is working hand-in-hand with the respective business units.

"An IT framework has been created, in the absence of which, no digital transformation can be achieved. It's like driving a Ferrari on a rough road. It's not going to work. The IT strategy has been divided into four phases and the digital strategy in three phases," says Banerjee.

IT strategy

The IT strategy has connectivity at its core followed by cloud and cyber security. Connectivity is critical, given the manufacturing plants, mines are located in difficult to operate terrains.

Cloud is being adopted in a big way. The target is to move most of the applications on cloud. It will drive scalability and agility. Cloud enables server provisioning in minutes, which was not the case in yesteryears. Cyber security will also be a huge focus, given the important role of cloud.

There are two more layers which will overlay on this infrastructure platform: The sensor and the applications layer. Machines can talk to each other through sensors and the man-machine interface can also be facilitated by sensors. These two are important data acquisition systems.

The next is the data office. "The effectiveness of the analytics, AI, machine learning is a function of the data quality. Unless the applications are integrated, supported by the IT infrastructure, with sensors, man machine interface looped together, you will not get the data right. Inspite of the right and quality data available, an inappropriate data governance, metrics, structure can derail the results desired. We are creating a data office, with all the essential requirements handled to its best to provide a single version of truth," informs Banerjee.

> Inspite of the right and quality data available, an inappropriate data governance, metrics, structure can derail the results desired
>
> **Jayanta Banerjee,** Global CIO, Tata Steel

> Tata Steel is also working on an IoT based feature for the contract workforce. It geofences the hazardous areas in a particular location

Digital strategy

Building analytics and advanced analytics and insights using AI and cognitive intelligence is fundamental to the strategy. This enables targeted decision making and converting instincts into insights. "In institutions, decisions are often taken on gut feel and instinct. It's not bad per se in management. But companies will now have to move towards analytics driven decisions," he states.

The last is the visualisation layer, which puts forth the data, so that it can be consumed in an efficient way leading to taking right decisions.

The cultural hack

Seeing is believing. The employees should be allowed to work with the technologies for a few months. This will convince them of the usefulness and they will not only adopt but also ask for more. For example, the blast furnace operator has to monitor at all times, the flame, temperature, colour, flame of the furnace and take decisions at times within seconds if not minutes. The statistical and mathematical algorithms will suggest the next action to be taken. In the past they were taking decisions on the basis of experience. Over a period of time, they would realise the advantage of technology over their personal gut feel.

Similarly, now, after high resolution cameras are deployed at the right places, monitoring the blast furnace, and also capturing the important indicators that need to be tracked with multiple angles, it helps the operators to take more informed decisions. It's also a safe practice compared to before when there was nothing that separated the operator and the blast furnace. Now, there is a wall erected. The employees appreciate this because it significantly enhances employee security.

Tata Steel is also working on an IoT based feature for the contract workforce. It geofences the hazardous areas in a particular location. A beep or alert is generated as soon as the system identifies movement in the geofenced area.

Bharat Forge achieves complete realisation from its IIoT investments

IN SOME PLANTS, productivity has increased by more than 5 per cent and energy saving has gone past 10 per cent, informs **Yogesh Zope**, Chief Digital Officer & Sr Vice President, Kalyani Group

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In the manufacturing industry, the demand is volatile and not every time, the plants are running at full capacity. Thus cost optimisation is necessary. Moreover, the expectations on the quality of the products delivered are also increasing significantly; the variants of the various models, both in the consumer and passenger vehicle segment, are more and are being released faster than before because of intense competition. Fifty per cent of Kalyani Group's revenue comes from the auto sector and so, the company has to respond to the requirements from the auto sector swiftly. "All these components put together measures the Overall Equipment Effectiveness (OEE) of the manufacturing plants. We have tight targets to deliver on the OEE. It also includes reducing the energy expenses, reducing the unscheduled downtime. The Industrial Internet of Things (IIoT) has the potential to deliver results in meeting the OEE targets and Bharat Forge is forging ahead with the IIoT implementation," says Yogesh Zope, Chief Digital Officer & Sr Vice President, Kalyani Group.

There are multiple digital initiatives underway at the Kalyani Group. The biggest of all is Bharat Forge's implementation of IIoT across the four manufacturing plants in Chakan, Baramati, Satara and Pune. The fifth plant is under construction in Nellore, Andhra Pradesh which will also be connected.

The company is approaching the rollout differently. "Apart from the technology aspects of sensorisation, connectivity, visibility and transparency, we are also stressing on change management, defining and setting up structures and providing the right resources for a smooth deployment. The employees are being re-skilled at the four IoT labs. Along with PTC, we have also setup a Centre of Excellence (CoE) for Industry 4.0. PTC has coinvested in the CoE, which has a combination of all the technologies like Industry 4.0, Augmented Reality / Virtual Reality, Additive manufacturing, advanced software for simulation, Product Lifecycle Management (PLM) and further integrating it with the ERP, etc," mentions Zope, adding that the team went to Fraunhoffer, Germany for a four-day program to understand the IIoT platform.

On the technical front, under the IIoT platform, over twelve thousand three hundred sensors are providing real time data from the manufacturing locations. "On a daily basis, more machines are getting connected. A new team has been setup and they are connecting machines and building dashboards. The forging lines are already connected and now the focus is on machining lines," informs Zope. The operational analytics has been achieved. Alerts are relayed to the concerned person on the manufacturing floor, in case of any change in the vibration, temperature in the machines. Many other such alerts on multiple parameters are already set. Over the next one year, the five plants would be connected but that would only be a stepping stone in the IIoT journey. Later on, the Swedish and German subsidiaries of the Kalyani Group will also be connected.

The target set has been to enhance Productivity by 5-20 per cent depending on the line or plant. "In some plants, the productivity has gone up past the 5 per cent mark; energy savings of about 9-10 per cent have been achieved in some plants. Over the next one and a half year, it's desired to completely eliminate unplanned downtime in hydraulics, pneumatics and electronics. The savings and efficiencies realised thus far is more than the total investments that went into the IIoT platform," claims Zope.

> On a daily basis, more machines are getting connected. A new team has been setup and they are connecting machines and building dashboards. The forging lines are already connected and now the focus is on machining lines
>
> **Yogesh Zope,** Chief Digital Officer & Sr Vice President, Kalyani Group

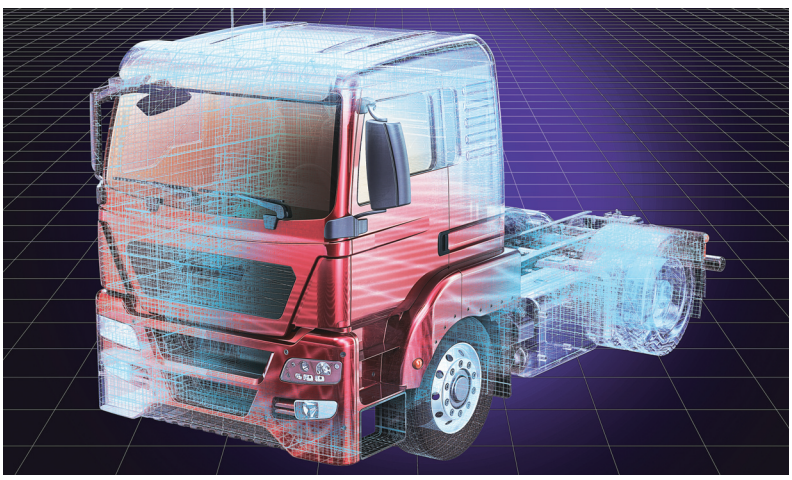
> There are multiple digital initiatives underway at the Kalyani Group

How does that happen? Zope gives an example of an incident six months back at a manufacturing plant. An operator, at about 2 am got an alert in the night about an inconsistency in the vibration in the forging line. He stopped the forging press and found out that one of the bolts was broken. He immediately changed the bolt. In the absence of such an arrangement, three more bolts would have broken resulting in a halt in operations for at least three shifts. The press manufactures one crankshaft every eight seconds.

At times, the information is available, but interpretation becomes a challenge. Bharat Forge is working on maturing the vibration technology and signature them to link with what kind of problems are preceded with typical signature patterns. This will help in providing insights into the data flowing in from the sensors.

How customer experience is driven by product insight at Ashok Leyland

EACH IOT POWERED vehicle generates one data package every second, one terabyte of data every day and 1.2 billion kilometers of data every month



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Ashok Leyland is an Indian automobile company and owned by the Hinduja Group. Founded in 1948, it is the second largest commercial vehicle manufacturer in India and headquartered in Chennai. Ashok Leyland started its telematic journey in 2005, which is now addressed as connected vehicles, under a broad umbrella. Until 2015, Ashok Leyland embarked on its Telematics 2.0 journey and provided deep insights on the vehicle performance.

Talking about the maturity levels of Telematics 2.0, Venkatesh Natarajan, Chief Digital Officer & SVP-IT, Ashok Leyland says, "We initially began with providing the vehicle diagnostics and track and trace features. Whereas, the humongous amount of data emitting out of sensors gave information beyond the track and trace information. The IoT sensors helped us move from health monitoring to prognostics and diagnostics, where the sensors would give out the alerts in advance."

Under IoT, Natarajan is tuning several systems, like, Active Drivers Assistance System (ADAS), which is a device to avoid collisions and followed up with a lane departure warning system, which send out alerts when the driver is breaking the lane, and driver drowsiness system.

Data as a service

The IoT powered vehicles generate one data package every second per vehicle, one terabyte of data every day and 1.2 billion kilometers of data every month. These data points may contain battery voltage, longitude and, oil pressure, altitude, etc.

The group is extracting meaningful insights and focusing on helping their customers to run their business better. They provide deep insights about the driver's behaviour and fuel management solutions and fuel pilferage solution.

"We are leveraging this data for predicting the battery failure, clutch failure, etc.; applying artificial algorithms and machine learnings. We provide a consolidated view," adds Natarajan.

Ashok Leyland has recently launched a digital market place, which consists of four digital platforms, i.e, i-alert, E-diagnostics, LeyKart and ServicerMandi.

I-alert is the connected big data vehicle platform, where they provide their customers with insights on vehicle health, driver behaviour, and fuel economy. ServiceMandi, is a digital platform which connects customers and the mechanics. LeyKart is digital e-commerce platform, through which the automotive industry has moved from B2B to B2C. E-diagnostics is for troubleshooting the problems in the vehicles.

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

> Ashok Leyland has recently launched a digital market place, which consists of four digital platforms

These platforms aim to provide more value to the customers and is aligned with the business objective. The group is adopting the DevOps methodology for rolling-out these applications.

"We function like a startup, where ideation to deploying the solution is significantly compressed," he explains. Also, leveraging machine learning algorithms and historical data to identify prospective customers.

Industrial IoT for a consolidated view

The group has started making some early investments on building IoT platforms which will be linked to their manufacturing automation systems.

Currently, the data generated by the connected devices in the shop floor is isolated, hence they are building an industrial IoT to consolidate the data on a single platform. And gradually, identify the ways to leverage the data for driving meaningful insights into the shop floor operations.

The transformation of RBL Bank into a digital hybrid bank

USING AN AI-POWERED MODEL, the bank loads 20-30 per cent less money in the ATMs, without changing the customer demographics

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"Banks are witnessing a substantial tranformation and digital banking wave, thus it is compelling to join a bank at this stage," says Sankarson Banerjee, Chief Information Officer, RBL Bank. Banerjee had joined RBL Bank in October 2018, and is accountable for spearheading the IT functions, strategies and designing the digital roadmap for the bank.

Banking has evolved into a 24x7 business, and banks are orienting their people, processes and technologies to build powerful core banking applications with personalised offerings. "System reliability and internal systems have to be 24x7 available, recoverable, resilient which require a significant changes in our infrastructure and designs," explains Banerjee, adding that banks are the enablers now, rather than the controllers of technology, forcing enterprises to rethink their technology stack, distribution strategy and channels.

Recent technology developments

At RBL Bank, Banerjee is spearheading initiatives to transform the bank into a digital hybrid bank, which is a composite of traditional infrastructure and digital frontend. It will enable them to significantly improve customer delivery capabilities.

They are heavily investing in cloud-friendly technologies and for front-end, they are investing in microservices and micro-segmentation. These investments offer a lot of flexibility, without increasing the cost of deployment and change.

"Since the bank wants to build standard servers and services, we are focusing on the cloud first or cloud-only technologies. Then, we are totally working on the new programming languages, i.e, Java scripts, Kotlin, etc., which are lighter and faster than the traditional languages and have turnarounds of 5X and 10X more than the traditional languages," states Banerjee, describing his IT roadmap.

Automation for everything

Further, Banerjee speaks about the key drivers leading to an increase in automation and AI adoption. Banks with multiple manual processes and interventions may not use necessarily robotics but are using process automation for straight-through processing.

"It's difficult for an individual company to lay down the hyper-personalisation model standalone, hence, we collaborate with academic institutes

Sankarson Banerjee,
Chief Information Officer, RBL Bank

The AI solution analyses the customer's withdrawal patterns from ATMs, in order to timely refill the machines

The cost of service is the key problem in banks. "With RPA, banks can implement the complex and sophisticated loans and dimish the human intervention. This kind of automation does not require higher reliance on hiring skillsets, as the skilled employees are harder to hire and pricey. Whereas Robotics Process Automation is depreciating the cost, initially, the cost is high but gradually the cost reduces," he shares.

Banerjee is also leveraging AI to make the customer experience seamless. He is closely studying customers and identifying customer trends and behaviours, driven by large scale data analytics. AI is used to identify patterns and predict customer demands based on their choices.

Personalised insights

RBL bank is using an AI backboned model to identify the optimal loading of ATMs. The AI solution analyses the customer's withdrawal patterns from ATMs, in order to timely refill the machines. "The ATM should never be empty but at the same time, money should not be lying wasted in the ATMs, which is an expense for banks and a tricky balance to achieve. The AI-powered model has proved quite successful, we are able to load 20-30 per cent less money in the ATMs, without changing the customer demographics," Banerjee explains.

It tracks down the different sources of data and applies AI to discover the partners.

"Hyper-personalisation has a lot to do with AI and analytics. It's difficult for an individual company to lay down the hyper-personalisation model standalone, hence, we collaborate with academic institutes. They have the brain power, and students who think laterally and once the theoretical model has started to form its shape using the data, we start drilling it out to apply it on our businesses," he adds. The cost to the server must be low, as banks operate at a very narrow cost to server ratios, hence the cost of delivering these servers must be as efficient as possible. "We are using automation, digitisation, and hyper-convergence to reduce the cost," Banerjee concludes.

'Digitalisation must be comprehensively integrated into business processes'

IN AN INTERACTION with **Salvi Mittal** of Express Computer, **Prasad Dhumal**, Vice President – IT, DHL Express India, highlights the digital objectives to enhance the customer and employee experiences

What does digital mean to DHL Express? What are some of your key initiatives?

We firmly believe that digital technologies play a key role in enabling efficiencies and driving growth for the logistics industry. Digitalisation helps in reducing costs by improving productivity, transparency, accuracy, and speed in shipment movements, ultimately benefiting customers. It is also imperative to ensure that the intent of embracing technology is to ease operations.

For DHL Express, our digitalisation objectives are to improve our customer and employee experience through operational efficiency.

MyDHL, an intuitive online shipping and tracking platform, has been designed to suit the preferences of our customers. The platform is simplified and highly efficient and ensures that we receive accurate real-time data for shipment processing in our facilities for faster flight connections.

Another initiative to improve the customer experience includes On Demand Delivery (ODD), a service that enables shippers in India to give their receivers across the border the power to select from a range of delivery options.

DHL Express proactively notifies customers via email or SMS about a shipment's progress and at the same time, allows receivers to select from a range of delivery options that best suits their requirements via the On Demand Delivery mobile-optimised website.

From an industry standpoint, the Express Cargo Clearance System (ECCS) was jointly developed by Indian Customs and Express Industry Council of India (EICI). The deployment of the ECCS has been introduced at Mumbai, Delhi and Bengaluru airports and this enabled us to progress from the archaic system of paper-based customs clearances. This has ensured faster shipment clearances, greater transparency and accuracy. ECCS links shipment data and its physical movement at the clearance ports via handheld barcode scanners, thereby enabling transparent real time shipment tracking through the entire process of customs clearances. Additionally, it eliminates the usage of paper in the process.

Not long ago, the industry saw the introduction of reforms such as the GST and E-way Bill. When these reforms were announced, we worked well in advance to help our customers prepare for the changes and to ensure compliance, right from day one. In fact, we were among the first in the industry to be GST-ready. We worked closely with our Finance, Operations and Commercial teams to re-design our systems and proactively guided and supported our customers through the initial days when there were teething issues.

We are continuously focused on improving our Electronic Shipping Solutions (ESS) capabilities for the customers' benefit. Today, we are proud to report that 98 per cent of our shipment data have been migrated to electronic platforms. Our ESS tool provides customers with a very simple and easy interface to submit GST, Courier Shipping Bill (CSB) data in time for regulatory-compliant shipment movement and export clearance. This data also helps customers in claiming discounts and benefits as per different export government schemes. This is how we leverage technology for customer benefit, while complying with local regulations.

When it came to the introduction of the E-way Bill, we introduced a semi-automated process where data could be extracted from our ESS solutions and uploaded on to the E-way Bill portal easily.

Every new reform is a challenge in itself for businesses across industries. With the introduction of reforms such as GST and the E-way Bill, we have had to revisit and revise some of our global IT systems and processes to incorporate provisions of the new reforms.

"Every new reform is a challenge in itself for businesses across industries. With the introduction of reforms such as GST and the E-way Bill, we have had to revisit and revise some of our global IT systems and processes to incorporate provisions of the new reforms

Prasad Dhumal,
Vice President – IT, DHL Express India

The HR processes are now online and automated, including performance management, leave, etc

What are some of the IT capabilities developed by DHL Express to optimise operations?

By leveraging our global and local expertise, we are constantly exploring ways in which we can incorporate best IT practices into our operations. Some of the capabilities we have introduced include:

- Our solutions like CSB V and Webservice help in supporting GST and E-way Bill related data elements for the convenience of our customers and internal operations
- Our Sales CRM (COMET) on Mobile for sales executives helps them plan their sales meetings and update it online without opening their laptops
- Latest Android scanners for couriers to capture real-time shipment status such as pickup and delivery. We have also installed Radio Frequency (RF) scanners at our service centers and gateway facilities for shipment processing
- We have developed web services and plug-ins for our online B2C customers for seamless data exchange between the systems
- An internal employee social networking mobile application – 'AsOne' that helps employees connect with each other across the company. Access to colleagues and information within the system is the key purpose of this application

The HR processes are now online and automated, including performance management, leave management, Mediclaim process, payroll, recruitment process, learning and development process, etc.

- We provide an online invoice download option via our Ezybill tool for our account customers
- We automatically provide softcopies of critical documents like Bill of Entry (BOE) and Duty Invoice required by our import customers for their internal processing ahead of shipment arrival at their doorstep

How are you leveraging advanced technologies like artificial intelligence, machine learning, and analytics?

At this point in time, our priority in India is to stabilise the ongoing digital initiatives like GST, E-way Bill, ECCS, etc, as they are very critical from the regulatory compliance perspective. We will soon turn our focus on more advanced technologies like AI, machine learning, which are currently being studied for feasibility in various functions. We also need to be mindful about the viability of these advanced technologies in India before implementing them.

JK Cement is banking on IoT, RPA, analytics for digital growth

JK CEMENT, one of India's premier cement companies, has undergone a massive digital journey in the last two and a half years. The company has now become more data-centric and technology-driven than ever before

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JK Cement has been a heavy user of the latest technologies like robotic process automation (RPA), Internet of Things (IoT), analytics and information security to gain a competitive edge. Since the solution is customisable and SAP integrated, today the company has greater control over the manageability aspect of the entire supply chain and delivery mechanism. This monumental change has been driven by Jitendra Singh, Chief Information Officer of JK Cement, who joined the company in 2016.

Speaking exclusively to Express Computer, Singh gives out details of this transformation and how JK Cement aspires to become a 90 per cent digital company by 2020.

He shares, "Our digital journey started with the suggestions and feedback taken from our re-engineering partner, Accenture's report. We saw that report as an opportunity to go digital as far as possible, covering the core processes such as order to cash, order to dispatch, plan to produce, procure to pay, record to report. With our due diligence, we started prioritising processes, either based on saving cost or generating additional revenues. We have rolled out more than 20 digitalisation initiatives across the organisation in the last two years."

SAP drives the digital journey

The first step of the company towards its digital direction was strengthening the core, SAP, with recent updates and upgrades. The options for the company was either upgrading to the most recent version or moving on to the latest offerings from SAP by S4 HANA. Instead of going in for S4 HANA as it is. The company migrated from the current state to a new state with EHP 8, followed by moving to Suite on HANA. It took one year for JK Cement to move to Suite on HANA, wherein the speed has increased multifold and performance of MIS and analytics has become better.

Singh says, "This was one of the low-hanging fruits for the company with immediate benefits to the organisation in terms of reducing the MIS like daily sales report, reporting time from hours to less than five minutes, parallel to that we found an opportunity in our sales and marketing stream where till that time only the disbursements of the loyalty scheme were online, rest of the processes were offline. We had a relatively small application-Sales Force App(SFA), which was capturing the minimum inputs from the fields; later we moved on to a full-blown CRM."

The company chose SAP C4C CRM which has improved the visibility of field sales force, customer details like outstanding, credits, etc. The next big change that JK Cement made was connecting the dealer's network, which earlier had no visibility. The company implemented a Dealer Network Automation application outside SAP. Today, the company enjoys better visibility of primary and secondary sales of its dealers.

Simultaneously, at the plant level, JK Cement has made several improvements in areas such as in-plant logistics (RFID), GPS based track and trace, online payment and invoicing. Enabling the vehicles with GPS, followed by providing of this link to dealers and distributors for live tracking of shipments; introducing single material code and inventorisation of freight were also some of the major reforms which the company has made with the help of technology.

Another significant move was the introduction of Analytics. The company selected Qlik Sense and SAP BusinessObjects Business or the purpose.

Today, the top management of JK Cement – from MD to CMO, CTO, and CFO – are all connected on the dashboard. Additionally, the payroll is also on the SAP SuccessFactors for HR.

The processes were technology-enabled, but to keep the workforce ready for this new change, Singh further ensured overall awareness and orientation of the company's workforce. He elaborates, "There were two sets of training – admin and end-user. We trained people countrywide on our new CRM, DNA. Our IT team travelled and provided training in batches along with online content provisioning. As a result, today, people are coming to us and are discussing their business challenges and solutions thereof."

RPA is a big bet

The company is implementing Robotics Process Automation (RPA) for numerous use cases where manual inputs can be minimised. It has already moved its accounts payable and certain HR workloads to RPA. Citing an example, Singh informs, "Until recently, we required to send the hard copies of invoices from plant to the head office. These copies would be re-validated and registered manually. However, using RPA, the copies are now scanned and the automatic transaction is generated and is forwarded to the finance department for timely payments. This transition has given credibility in the eyes of a supplier, which in turn puts JKCL in commanding better facilities from its suppliers"

> Conservatively speaking, we are 70 per cent digital and by next year, we will be close to 90 per cent digital. We are bringing more of our processes under RPA, close to IoT and superior analytics and MIS. The leadership team knows where it wants to reach, and it's impossible to reach that stage without technology
>
> **Jitendra Singh,**
> Chief Information Officer, JK Cement

> The technology team at JK Cement is further fine-tuning the processes with the help of value stream mapping

Embracing security

Surprisingly, security as a vertical was not so prominent in the organisation until last year. The company embarked on this journey in September 2018, after partnering with EY, to put security in place with the latest technology, but without going for overkill. "Right now, the cement industry being a commodity business is not considered data-centric. As the data dependency goes higher, the industry may receive greater attention in terms of security breaches. Now, the security policy is in place and best practices are getting institutionalised. Endpoint protection, control access, secured access and appointment of information security officer are some of the initiatives we have taken in the recent past," Singh shares.

Going forward

The company is now gearing up for S4 HANA journey. The technology team at JK Cement is further fine-tuning the processes with the help of value stream mapping. It will give estimates of different timelines from lead, ideal process cycle to manpower engagement. This value stream mapping is said to help the company in reducing the ideal timing by using RPA, removing redundant steps, customised and configuration the systems and software for the desired result. Both Grey and White cement division of JK Cement are looking at technology and automation as a growth engine, and the company has set a target to go 100 per cent digital.

"Conservatively speaking, we are 70 per cent digital and by next year, we will be close to 90 per cent digital. We are bringing more of our processes under RPA, close to IoT and superior analytics and MIS. The leadership team knows where it wants to reach, and it's impossible to reach that stage without technology. Our strategy is to move 100 per cent from on-premise to cloud, in the near future. Our cloud journey is very new, we have migrated to public cloud in certain cases, along with organisations made a wide shift to Microsoft Office 365," he emphasises.

The bottom-line objective for JK Cement is to create technology as a platform for people. Now, a good amount of data is being generated from different sources. The company will be using it for more business and may break in certain silos. Getting closer to end consumer with social media and analytics and transforming 35 plus years old plants with IoT and sensors wherever is possible and setting up new plants with the latest technologies – these are some of the company's thrust areas.

Sharing some of the key challenges for the company, Singh adds, "The way technology is advancing, my team needs to be prepared with the latest and the best. Manpower is something you can't replace 100 per cent every year. Selecting relevant technology partners, keeping the balance of cost-benefit versus, consulting and technology, etc., is crucial."

Pepperfry uses AI, ML for product discovery

THE FURNITURE MARKET in India has been growing aggressively, with digital players like Pepperfry renewing the experience of futuristic shopping. **Abhimanyu Lal**, Chief Product Officer, Pepperfry tells **Sandhya Michu** how the company is using emerging technologies

How are you simplifying your technology footprint to innovate quickly and deliver intelligent customer experience?

The choices that we make on technology are not driven by explicit simplification intent. We believe technology is the tool that helps one manage business and operational complexity. In our experience many of the more mature technologies have also evolved substantially over the years. A good example is PHP, which originated as early as 1994 and is therefore one of the oldest web technologies around. However PHP has seen massive improvements over the years.

We also use Java to power all our services. Java has seen a resurgence in popularity since it became the default platform for Android developers – even though Kotlin popularity has seen a sharp spike of late.

Pepperfry's technological architecture is completely developed organically and in-house. Our discrete products enable the front-end experience, the fulfillment and logistics experience, the customer support experience as well as the omni-channel experience. We bind these discrete systems together with a Data Control Network which ensures that appropriate information is available to the relevant user, both internal and external, at the right time.

Moreover, we have been focused on enabling our mobile application for furniture shopping through a tremendously user-friendly interface with superior technological amalgamations.

Consumers demand an omni-channel shopping experience, from buying a product to returning it. How are you delivering in this area?

We decided to pioneer the omni-channel approach in the industry. We have turned, what is classically considered the omnichannel experience, on its head and its worked very well for us. While historically many organisations implemented omnichannel by trying to replicate an offline experience in their online channels, it has often not been able to reap anticipated results because organisations are rarely able to avoid internal channel conflicts and online (which is the more scalable part of the business) ends up taking a backseat.

Therefore, being an online company, our approach towards omnichannel business is different. We established Pepperfry Studios wherein we aim to replicate and offer our consumers the online experience. Customers who walk in are guided through the site while simultaneously the products that are in the Studio serve as illustrations for what the customer eventually ends up buying. So customers get a 'touch and feel' experience but at the same time their purchase choices are not limited to the products which are available in the store. Instead, they have our entire catalogue to make a purchase decision. This approach has been a complete game changer for us, and our Studios are now contributing to more than 30 per cent of our total business volume.

Additionally, we are focused on driving users from our front-end platforms (website, mobile site and mobile app) into our Studios, wherever we feel that they will benefit from the expertise and assistance of our design experts. For example, a user who has placed products into the shopping cart but then subsequently not taken any action or for some reason was unable to complete the online payment, is an individual who will benefit from an assisted buying experience. Through our technology, we pipe these leads into the nearest Studio which then gets in touch with

this user and in a large number of cases is able to convert the lead into a satisfied customer.

How are you delivering AI-driven experiences to customers; what are the new areas where you investing in terms of technology-specific use cases of AI, RPA and analytics?

We have been using AI and machine learning extensively to provide consumers a superior shopping experience. One of the largest problems that an e-commerce platform attempts to solve is Product Discovery for users. When a customer visits our portals for the first time, we find that they often have a broad sense of what they want, but are open to evaluating multiple options. Therefore, our task is to highlight the most relevant products in order to display something that they like and therefore move forward in the purchase journey from simply browsing to actively evaluating a product.

This is one of the areas where we make extensive use of AI – or more accurately machine learning – to determine the appropriate products for a particular customer and the sequence in which these should be displayed to them.

We also use a similar ML based approach to determine what are the characteristics of products that are more successful than others and therefore what kind of products should the Supply or Category teams be sourcing. ML is also used to power recommendations that we display to users. For example, if a user is on an item specific page, we are able to display similar products to that user as well as products that are frequently bought along with that particular product, so that we are able to expand our users' purchase basket.

Finally, an application of ML that we are enthusiastic about and are investing behind in, is Visual Search. This will help customers get a set of similar products based on a piece of furniture that they might come across offline. As far as AR and VR is concerned, we believe there is some time before these technologies mature and realise their full potential in terms of customer adoption. To experience AR, there is a significant cost in terms of the app size, which translates into data costs for users. If we were to build AR into our mobile apps, then a large fraction of users might have to download a significantly larger app than they need and this can quickly lead to friction. However, this is definitely an area that we are investing behind and we also have a superior concept app ready. This application will be launched when we are certain that a large segment of consumers is actually able to make use of the functionality.

Furthermore, we have enabled a 3D experience for a large number of our furniture products where a user can see a product in 3D and also interact with that product even on their mobile phones. We have noticed a significant lift in conversion rates for products which have 3D models which clearly conveys that there is high consumer affinity towards this feature.

Technologies like data analytics, AI, machine learning are slowly disrupting customer services. How is Pepperfry looking at these opportunities?

Pepperfry is India's leading online home and furniture marketplace wherein our customers spend more than ₹ 10,000 per transaction on an average due to furniture being a big ticket category. Therefore it becomes essential for us to overcome any trust related barriers with our potential customers by engaging with them through multiple touchpoints and superior services.

For starters, we have built a customer support platform from scratch. This has allowed us to ensure that an agent who is interacting with a customer has all the relevant information available to her in order to be able to resolve the customer's query in the first contact itself. By ensuring that we have high FTR (First Time Resolution) rates, we are able to reduce the number of contacts required for resolution and therefore maintain a high level of service using a relatively modest sized team.

While the customer always has an option to interact with a real agent during the course of their purchases, we also have a chat experience powered by bots, ensuring that routine questions are answered seamlessly in real-time.

'We deliver globally accessible, infinitely scalable and completely autonomous enterprise data resiliency'

STARTED WITH THE AIM of democratising disaster recovery, today Druva is being trusted by over 4,000 enterprises globally. **Milind Borate**, Co-founder & CTO, Druva explains how his company is helping customers accelerate growth and make better informed business decisions through reliable data protection and management

By Sudipta Dev

Can you give a brief background of the company and share the major milestones achieved in the last one decade ?

We founded Druva in 2008 in Pune, India. Back then, we identified disaster recovery as a critical problem that was solved only in large enterprises and we started working on a simpler and more affordable solution to democratise DR. That's how Druva was born.

Druva has undergone multiple product iterations since its inception, most successful, some failures. When we started out, we aspired to be a software product company. Today Druva is built on AWS, offered as-a-Service and delivers data protection and management for the cloud era. We deliver globally accessible, infinitely scalable and completely autonomous enterprise data resiliency, are trusted by over 4,000 enterprises and manage more than 100PB of data worldwide.

Please highlight your key products and solutions (for Indian and global markets)

Globally, enterprises and businesses are struggling to manage growing amounts of data that are being stored in many different environments – from laptops to data centres to cloud services. The complexity, time and costs for businesses to protect, govern and manage their data lifecycle is increasing dramatically. Against this backdrop, Druva offers a SaaS solution that enables organisations to address these needs in a cost efficient, centralised and easy to manage manner, no matter where enterprise data is located. Druva's patented cloud architecture transforms backup data into an asset, making it more open and accessible so customers can streamline governance, improve cyber resiliency, and gain critical insights to uncover opportunities and expedite decision making.

> Druva's patented cloud architecture transforms backup data into an asset, making it more open and accessible so that customers can streamline governance, improve cyber resiliency, and gain critical insights to uncover opportunities

Who are your target customer segments and the benefits to their businesses through your solutions?

The core benefit of cloud goes beyond technology and Druva enables every enterprise to accelerate growth and make better informed business decisions through simple and reliable data protection and management. Regardless of industry, whether its healthcare, manufacturing, financial services, education or technology, all organisations are increasingly turning to their proprietary data to gain insights and drive their business forward. Druva is built around delivering cost optimisation, agility, innovation and improving time to market for its customers, no matter their focus or industry. Using Druva, customers can drive down costs by over 50 per cent by freeing themselves from the burden of unnecessary hardware, capacity planning, and software management.

What has been your focus on innovation, and its significance in your business strategy?

We believe that leveraging the cloud is the only way to manage and protect the vast amounts of data each organisation is managing, in a simple, scalable and cost-effective manner. Innovation started at Druva when we decided to build the first cloud-native data management solution in 2013, and we continue to focus on providing new features and services that take full advantage of the power of cloud.

At Druva, we focus on two aspects. First, we aim to make our existing solution faster and more powerful for customers while driving down costs by leveraging AWS' consistent innovations to deliver more value to customers. Two, we are committed to responding to new challenges being posed by today's complex and distributed data, building solutions to address these challenges and meet changing customer needs. For example, we are building solutions to let our customers have insights into their data and to enable them to discover their data. Some of these solutions are possible only now that public cloud has become a reality.

Your views regarding the evolving data security needs of enterprises and how is Druva positioning itself a key player in cloud data protection space?

As data becomes more fragmented and risks increase - with ransomware, GDPR, back-up/recovery requirements and the locality of data - a centralised way of managing information is required. Druva offers customers greater visibility into their backup data, with the ability to analyse it for value, and monitor for compliance as well as malicious attacks. While Druva offers an exceptional backup and recovery solution all through a cloud application, we are also helping enterprises combat bad actors (either internally or externally) by being delivering comprehensive backups within minutes, ensuring businesses are able to continue operations with minimal impact from any such incidents.

What are your future plans, in terms of new technologies and strategic geographical expansion?

Data has become the fuel for company success, driving insights, customer targeting and business planning and even training AI and machine learning models. Enterprises are increasingly looking to the cloud for a holistic strategy to manage this new kind of data that creates a comprehensive data lake, minimises data silos, and enables the use of these emerging technologies. Cloud is the ideal place to run these workloads given the near infinite compute, storage and networking available. Any way to extract additional value from it is critical to business success and the shift to data management is key, where data is not only protected, but properly archived, easily searchable, can be leveraged for analytics, and remains compliant the entire time.

FEATURE

Automation enables instantaneous disbursal of flight delay insurance claims

INSURANCE COMPANIES are using automation and blockchain to disburse flight delay claims even before they are filed by the passengers

Abhishek Raval
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The wave of emerging technologies like automation, RPA, AI, ML, blockchain, wearables and others have impacted businesses including travel insurance. The space of insurance has commoditised and the new age born-in-the-cloud insurance companies are leveraging technology to enter into new areas. These companies are empowered by technology tools to provide seamless and superior service experience.

Flight delay is one such area, especially during the winter season, due to fog related reasons or in the rainy season. There are insurance companies, who are providing flight delay insurance and disbursing claims proactively even before these are filed for.

Digit General Insurance (DGI) offers domestic flight delay insurance. In the business mix, the travel insurance contributes 39 per cent, which is the second biggest LoB for DGI. The claims process is automated and simplified. For instance, in case the flight gets delayed by 60 minutes, DGI informs the customer proactively.

"Usually, the customer forgets that he has bought an insurance policy. Hundred per cent of flight delay claims are automatic. The passenger gets an SMS, in reply to which, he sends his boarding pass and bank details as soon as the flight is delayed beyond the given time. We also have partnerships with various players to monitor domestic flights. The analytics runs at the backend, tracking how many customers who have bought the policy from us and are travelling in the same flight," explains Gangadhar S J – Head Technology – Digit General Insurance. The systems are developed in-house and they are programmed to track the flights 24*7.

Following is the business mix of Digit General Insurance: Travel insurance (39 per cent); motor (42 per cent); personal assets including mobile (19 per cent), in volumes.

Blockchain for flight delay insurance disbursal

Bajaj Allianz General Insurance is providing blockchain based flight delay insurance – 'Travel Ezee' – to its policyholders for international flights. Travel Ezee was launched in June, 2018, wherein the claim is automated if the flight gets delayed by six hours. The target is to bring it down to two hours. "Insurance companies are hesitant on paying claims. Thus, this is a customer experience and acquisition strategy, and we want to pay claims, even before they're filed by passengers," says Sourabh Chatterjee, President and Head – Technology, Direct Sales, Travel, Bajaj Allianz General Insurance.

The objective is to make the customer realise the experience on service, and convince him to buy other travel products from Bajaj Allianz General Insurance. Travel insurance is highly commoditised and blockchain can prove to be a differentiator in immediate claim disbursal.

Why blockchain and not another technology?

Insurance is basically a contract between the passenger and the insurance company, with many other stakeholders involved – the travel aggregator, banks, etc. Blockchain has the characteristic of being immutable when it is used to host the insurance contract on a cloud platform.

The smart contract put on a cloud brings all the participants in the contract on a common trust platform, wherein the smart contract is hosted on the systems of each of them. It drastically eliminates any scope of tampering, which is difficult to do with other technology options available in the market.

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Head Technology,
Digit General Insurance Company

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Sourabh Chatterjee,
President & Head Technology,
Direct Sales & Travel,
Bajaj Allianz General Insurance

Smart: The future of manufacturing

THE FIRST EDITION OF Smart Manufacturing Conclave served as a platform for IT leaders from the manufacturing sector to engage and learn how new-age technologies can transform the industry

Inauguration and lamp lighting ceremony

Bakshish Dutta, Country Manager - India & SAARC, Druva

Viral Gandhi, Group CIO, Piramal Enterprises

Panel discussion - Enterprise security vulnerabilities on the shop floor

Abhishek Deshmukh, Sr Consultant - Manufacturing & IoT Practice, SAS India

Arjun Laxminarasu, Marketing Manager, Qlik

Vinay Jammu, Technology Leader, Physical-Digital Analytics & Software, GE Global Research

Rajeev Papneja, Chief Growth Officer, ESDS Software Solution

The Indian Express Group's Express Computer magazine organised its maiden Smart Manufacturing Conclave, in Khopoli, near Mumbai at Novotel Imagica. The event was attended by more than 100 senior IT functionaries from manufacturing companies from across India. On the sidelines of the conference, the Smart Manufacturing Awards recognised organisations from the manufacturing sector, for their innovative use of new-age technologies.

The keynote session from Vinay Jammu, Technology Leader, Physical-Digital Analytics & Software, GE Global Research and Viral Gandhi, Group CIO, Piramal Industries, was followed by the conferring of the Smart Manufacturing Innovation Awards were the highlights of the one and a half day residential event. The first session by Vinay Jammu, touched upon the potential of digital twin, additive manufacturing and immortal machines. Vinay Jammu, Technology Leader, Physical-Digital Analytics & Software, GE Global Research defines digital twin as a personalised living learning model i.e business domain + AI = digital twin. The sensor based machines constantly learn from the machine behaviour and keep looping back the requirements, thus making the machines immortal. For example, the digital twin (DT) technology has enabled machines at GE to be used for many years at a stretch without much depreciation.

In the aviation industry, DT allows for predicting engine breakdown due to corrosion. This can be done when domain (material sciences) + AI can be combined. The data from worldwide map of dust particles is inspected alongwith the flight map and the data from NASA, and a DT model can be run to predict distress in jet engines followed by inspecting the ones, which have passed the threshold. This has saved millions of dollars for airline companies. It has also optimised the aviation operations using AI.

This can also be applied for the supply chain operations - the industrial suppliers, parts providers, assembly lines, etc.

Another use case is predicting boiler tube leakage with AI. The design, operational and inspection data from the boilers can be constantly monitored to predict erosion and accordingly predict the expected outages in the boilers.

GE is also working with two Indian aluminium companies for improving the efficiency of aluminium smelters. They guzzle electricity and even one per cent electricity cost saving can result in tremendous savings in dollar terms. In this case, the domain concerned is electro-chemistry + ML = to better pot leak prediction.

GE has adopted the DT model, not only for products but also for processes, parts, and systems. There are about 1200,000 twins operational so far.

In his session titled, 'Monetise your IoT data using multi-phase analytics', Abhishek Deshmukh, Senior Consultant – Manufacturing and IoT Practice, SAS India pointed out that a lot of investment is being made to create IoT and Industry 4.0 ecosystem, in the manufacturing sector. He said, "IoT is spread across different areas – digitisation of factories, connected mobility, telemetrics, smart homes, smart appliances, etc. This will generate lots of data; for instance, connected factories create 1.0 PB of data every day, whereas, connected cars create 4.0 TB of data every day."

Citing these statistics, Deshmukh emphasised on the need for multi-phase analytics amidst growing adoption of IoT in the manufacturing sector. He also spoke on some of the key challenges facing AI and IoT together – non-availability of data, multiple forms and shapes of data and holistic data management.

Smart practices

A panel discussion was organised on Smart Manufacturing - best practices for taking manufacturing efficiencies to a new level. The participants included Piyush Chowhan, CIO, Arvind Lifestyle Brands; Ketan Karkhanis,Head – IT, Clariant in India; Jagdish Lomte, CIO, Thermax; Nabuath Khan, Practice Head - Manufacturing & IoT, Analytics, SAS India and Ranjit Metrani, VP- Sales & Chief Revenue Officer, ESDS.

Cloud and Industry 4.0 technologies was the highlight of the discussion. Ranjit Metrani said, "In India, on an annual basis, over US$ 90 bn is spent on IT out of which about US$ 4-5 bn is on the cloud. Cloud will be the enabling technology for all Industry 4.0 technologies." Piyush Chowhan felt that cloud was still costly. It is the stepping stone for IT transformation, but not the answer to all questions. Jagdish Lomte gave an example of how accessing engineering data was difficult from the cloud, but there are absolutely no hassles in getting transactional data. Nabuath Khan agreed that cloud was costly. He explained the benefit of cloud in R&D. Hitherto it took months for getting the desired results in the R&D department but now, cloud enables parallel computations and the results can be achieved in days.

On the point of Industry 4.0, Ketan Karkhanis informed about the demand from the plant managers in his company to go for predictive maintenance solution. In response, a PoC will be kicked off soon.

SMART MANUFACTURING CONCLAVE
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Jagdish Lomte informed that, as far as the concept of Live enterprise is concerned, Thermax is 15-20 per cent live and is already using IoT for chillers. The boilers will soon be IoT enabled.

Nabuath explained how a manufacturing company has saved US$1.1 mn in six months by adopting the SAS analytics solution. The maintenance person is regularly informed about the trend shifts in the machines. This results in predictive and proactive upkeeping of the machines.

Industry Internet of Things, also referred to as IIoT, is garnering attention of manufacturing organisations across the country. Let alone the talks surrounding this technology, the manufacturing sector has started witnessing real use cases. In a session on IIoT and emerging technologies, Dr Rajeev Papneja, Chief Growth Officer, ESDS Software Solution, while citing an industry report, said that the IoT market is expected to reach an estimated valuation of US$ 14.4 trillion. Of this, 25 per cent will be aimed at reducing time-to-market. While referring to a book on China's re-industrialisation, Papneja affirmed that these trends will lead to re-industrialisation in India as well.

He said, "IIoT is not just about sensors. It is about enhancing business analytically and operationally by use of IoT, cloud and software, thereby leading to increase in efficiency. IIoT will not exist without cloud infrastructure."

Responding to concerns about cloud being perceived as costly, Dr Papneja added, "Cloud seems costly, but it also brings huge savings. For instance, reducing even one per cent of inefficiency can result in significant savings."

Digital culture

The next session was by Viral Gandhi, Group CIO, Piramal Enterprises. He spoke about 'How do we create a culture of digital transformation'. Its paramount to bring about a cultural shift in the context of digital transformation because over 50 per cent of the energy is spent in getting the business ready for the technology upheaval.

The steps initiated at Piramal Group as a part of culture hacks program includes Piramal Techfest. It involves encouraging and taking the employees / top management to startups and business leaders to understand more about the potential of IT in bringing about business transformation. An IT Academy has been launched and the technology team is undergoing programs for upskilling.

He also briefed on a set of cultural hacks, which are as follows: Think big, start small and scale fast; push but don't pull; from know it all to learn it all; short wins (quick PoCs and celebrate wins). Gandhi defines a healthy culture with a glue / grease example. In a healthy culture, the togetherness of shared values acts as a glue and the grease is resiliency, fresh thinking and innovation. Even if an employee / teams fails, they are rewarded.

The Piramal Group has demonstrated success in digital initiatives. The Robotic Process Automation (RPA), chatbots; Real Time Manufacturing Intelligence (RTMI), analytics and AR / VR adoption has delivered good results for the group.

In this increasingly data-centric world, supported by technologies such as IoT, data management has gained equal importance. Speaking on 'Simplifying data management – The SaaS way', Bakshish Dutta, Country Manager - India & SAARC, Druva, provided a brief on Druva's journey. Bakshish educated the audience about Druva Cloud Platform and its unique approach – no hardware, no software, no complexity.

Pharma perspective

The second panel of the day discussed the potential of technology in the pharmaceutical sector. The topic was, 'Lessons from digital transformation: The Pharmaceutical Industry Perspective'. The Panelists include, Gyan Pandey, CIO, Aurobindo Pharma; Naga Prasad Vaitla, Vice President – IT, Granules India; Suryamohan Surampudi, Sr. Director & Head of GxP IT Administration & Assurance, Dr Reddy's Labs; Avadhut Parab, Global CIO, Wockhardt. Parab informed about the initiatives taken in the last one year on the digital front. The idea of making the medical representative as a super representative (rep) was initiated. The rep was empowered with a chatbot, that has a 360 degree view about the doctor. A Zoom software is being tested, which will lessen the travel time of the rep. Creating stock

Sathyanarayanan A, GM – IT, Ashok Leyland

Panel discussion - Lessons from digital transformation - The pharmaceutical industry perspective

Panel discussion - Smart manufacturing - Best practices for taking manufacturing to a new level

Richard Dsouza, CEO, Mahindra Integrated Business Solutions, Mahindra & Mahindra

Power discussion by ESDS Software Solution

Power discussion by Qlik

Winners of Smart Manufacturing Awards

Power discussion by Druva

Winners of Smart Manufacturing Awards

Power discussion by SAS

intelligence for the rep and the stockists is also underway. The company is exploring to use AI in biotechnology, to increase yield by over 20 per cent; the plan is also to use AI in capacity forecasting too.

Vaitla informed about using technology in the area of training. VR is being used for employees to be trained on various apparatus because all the equipments to be used cannot be bought separately for training. It provides a look and feel of the equipment without actually using it. A curriculum has been created for the said purpose. Design thinking method has been used for process changes. It has resulted in changes in SOPs.

Aurobindo is also running various projects enabled by IT. In the field of logistics, technology adoption has resulted in efficiency in the movement of goods. The adoption of IT is slow but regulation is kicking in faster technology acceptance and serialisation is an example to demonstrate and so is electronic batch records, because auditors are doubting the integrity of the manual record. Downtime is a major issue and predictive maintenance tool is providing the answer. PoC is also on to digitise the log books. The company is also automating the laboratory and R&D.

At Dr Reddy's, the company is into its third year of the digital journey, which began in 2016. The senior management was taken into confidence before taking up the digital roadmap. It had three pillars: data availability, centralisation of data and data analysis.

- **Data availability:** Data acquisition systems were implemented. So far, 70 per cent of the systems have become paperless.
- **Centralisation of data:** Involves formation of data lake and pooling in a uniform repository. Data from all the 20 plants is getting congregated.

Qlik did a power discussion with select attendees and gave an overview, about data analytics and the associated challenges and opportunities. What Qlik customers have done right, is they have articulated the business requirement around the right data models. The company which fail to do so, cannot extract the best out of their investments in data analytics solutions.

Data analytics have a deep impact on the organisation's decision making, if used in the right manner and with a business requirement in mind. Data literacy is paramount and the employees should be trained in the right skills. It's also important to show the possibilities of how in varied ways, the data analytics solution can deliver results.

Qlik cited a survey on challenges of data analytics and established the premise of the discussion. The survey said, 44 per cent of the employees lack data literacy; 22 per cent said, lack of institutional sponsorship; 11 per cent felt lack of data ownership and another 22 per cent said, lack of understanding of data.

In its power discussion session, the SAS team showcased SAS' IoT use cases and informed the attendees on the areas where the company is working in – transport, smart cities, insurance, healthcare, etc. The SAS team was of the view that IoT, without analytics, can't provided dividends; and IoT can't be implemented by a single provider.

On a query related to end-to-end implementation, a spokesperson from SAS pointed out that IoT implementation can't be done by a single solution provider; it has channel partners' play. "IoT is an ecosystem. If you have to successfully solve a problem, there has to be an ecosystem play. We, at SAS, work with our partners to connect you to machines," the spokesperson said.

An interesting part of the discussion was around the stages of IoT implementation in India and globally. Through graphical representation, the spokesperson said that Indian organisations are currently at level 3 and level 4. However, the industry is now moving into level 5 and level 6. To this, the audience opined that levels of implementation depend on industry verticals.

Powerful deliberations

Day 2 began with a breakfast power discussion hosted by Druva, the cloud data backup provider. The company spoke at length about 'Backup as a service, simplifying data management, the SaaS way'. The company primarily provides two products - 'Insync' for end user data and 'Phoenix' for server data. Phoenix provides a visual description of the trend of the data generated. The long term retention of data is separately priced. The Druva application is written on Amazon cloud. The data is uploaded based on the network speed of the enterprise.

- **Cloud ranger:** Helps customers to orchestrate snapshots on EC2 and data copies are also made available in other availability zones in case of accidental deletion of data in the host country. The company provides test services to check whether systems in other availability zones are functioning normally in case if the host region is down.

Druva is actively working with IT, ITeS and pharmaceuticals as they are heavily regulated.

Themed, 'Building the application that drives your business', the power breakfast session by ESDS Software Solution delved into the application development offerings by the company, since most of its customers know of ESDS as a cloud service provider. Sharing more, Ranjit Metrani, VP – Sales & Chief Revenue Officer, said, "The biggest chunk of our application development business comes from the government sector – around 45 per cent – but we do business across verticals."

Metrani also emphasised on ESDS' patented vertical scaling model, which provides cost-effectiveness, driving benefits and value. Furthermore, Metrani educated the audience about its work done with various government organisations across India.

Qlik addressed a session on the four fundamental ways in which data analytics is changing the face of manufacturing. Three quick case studies were discussed to put the point across. Godrej Consumer Products reduced their time to analyse the reports using the tool from Qlik, which can slice and dice the data at will. Hitherto, the decision making was a time consuming process because of traditional reports.

Lupin could get a single source of truth at the HQ, which was not the case before implementing the Qlik tool. Before, the legacy SAP and BI tool could not provide the data as required. AstraZeneca was accused of selling a drug for the wrong disease. A hefty fine was levied on the company. Qlik provided a solution that streamlined adherence of norms for AstraZeneca.

Tech-enabled manufacturing

Deliberating on the importance of RPA in the manufacturing sector, Richard Dsouza, CEO, Mahindra Integrated Business Solutions, Mahindra & Mahindra, informed, "The key technologies under RPA include Screen Scrapping, Business Process Automation and AI."

He further elaborated on how each of these technologies work and how is Mahindra & Mahindra leveraging them. He added, "RPA and AI go hand-in-hand. We have used AI to interpret dashboards, ensuring that users understand analytics."

In another session, Sathyanarayanan A, GM – IT, Ashok Leyland, spoke about the 3D Experience Platform at Ashok Leyland. He also shared an array of use cases. For instance, in supply chain function, some of the use cases include quality reporting, inventory management, order scheduling and tracking, supply chain risk and management, master data management and production routing.

Day 2 also saw a panel on 'Enterprise security vulnerabilities on the shop floor'. It was Moderated by Keyur Desai, CIO – Essar Ports & Shipping, Head InfoSecurity, Network & Communications – Essar. The panelists include Swaminathan Venkatachalam, CISO, Godrej Industries; Beena Nayar, IT Head, Forbes Marshall; Ravikiran S Avvaru, CISO, Toyota Kirloskar Motor.

Swaminathan began with reasoning, on why the manufacturing industry is targeted. The information security team is involved later in the implementation cycle rather than in the beginning. The departments are working on the IT projects without taking the CISOs office into confidence.

Another major reason is timely patch management in the OT systems on the shop floor. The refresh cycles in the OT machines are less than the IT and thus patch updates are missed in the OT machines. For example, the legacy systems continue to use Windows XP, for which Microsoft has announced to discontinue support.

Beena Nayar said, "The human factor remains to be the weakest link in cyber security. IT security should be a part of the organisational culture. Companies should invest time in organising IT security awareness programs. Employees who report the security flaws should be rewarded. Forbes Marshall is running similar programs for the employees."

Avvaru stressed on conducting training on the shop floor. He said, at Toyota Kirloskar, at the divisional level, the security teams visit the shop floor for training. The classroom training is very theoretical and doesn't have the capacity to build scenarios.

Srinivasan spoke about following the security hygiene, for example, a company cannot have an email system and the SCADA system on the same network.

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