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EXPRESS COMPUTER

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PARTNERS, CALL US TODAY TO BOOK YOUR PLACE AT THE BFSI IT INDUSTRY EVENT OF 2020

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TECHNOLOGY CONCLAVE
JANUARY 24-25, 2020 PUNE

The Indian BFSI sector continues to drive innovation and set the digital agenda for the other sectors. In fact, Gartner estimates BFSI IT spends will be around \$11 billion in 2020, a 9.1% increase from 2019. Yes, this is the age of apps, algorithms, AI, Machine Learning, delivery of loans in minutes, open APIs, chatbots, self service, improved efficiencies and Digital only banks.

Express Computer understands this huge digital shift in the BFSI sector, and has hence conceptualised the **BFSI Technology Conclave** – a conference that will host India's foremost thought leaders and influencers in this space. This will be the fifth edition of the conclave.

BFSI LEADERS/IT HEADS FROM THE FOLLOWING INSTITUTIONS WILL BE ATTENDING THE EVENT:

- Reserve Bank of India
- IRDA
- Ministry of Finance
- Ministry of Revenue
- Public Sector & Co-operative Banks
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- Public and Private Insurance Companies
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- Lessons and perspectives from transformational digital leaders
- Open Banking, Next Generation Chatbots and startup partnerships
- A status check on Artificial Intelligence and Blockchain
- Using RPA for taking automation to the next level
- Hackathons for improving competitiveness
- Enterprise Security: How to proactively protect your company in the digital era

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Prabhas Jha (Sales) – +91 9899707440, prabhas.jha@expressindia.com, Srikanth RP (Editorial) – +91 9819687097, srikanth.rp@expressindia.com

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New Delhi: Prabhas Jha - +91 9899707440, prabhas.jha@expressindia.com | Mumbai: Ravindranath Nair - +91 9820955602, ravindranath.nair@expressindia.com
Bangalore / Chennai / Hyderabad: Durgaprasad Talithaya - +91 9900566513, durga.prasad@expressindia.com Praveen Kumar Soman - +91 985429991, praveenkumar.soman@expressindia.com | Kolkata: Debnarayan Dutta - +91 9051150480, debnarayan.dutta@expressindia.com,
Ajanta Sengupta - +91 9831182580, ajanta.sengupta@expressindia.com
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EXPLORE BHARAT

DISCOVER INDIA'S
NEW BUSINESS HUBS

CRN INDIAN EXPRESS GROUP

Today, tier II and III cities such as Surat, Jaipur, Indore, and Patna have shown an economic growth rate of more than 40%. This paradigm shift in the tier II and III cities is quite evident in the current economic scenario where an extensive number of startups are emerging with the motive of solving more localized problems with the help of on-demand applications, consumer tech solutions, online delivery, ride sharing and more, thereby driving the growth of IT in these cities.

As IT is an integral part of every sector, with the rise in investments in any sector in tier II or III cities, investments in IT too will grow simultaneously. A study by AMI Partners suggest that SMBs in tier II and III cities exhibit a substantially higher growth-rate in terms of their IT spending compared to their compatriots in tier I cities; thus, they are likely to be the future growth-engines of SMB in terms of IT spending.

It has also been observed that channel partners in these cities are no longer attached to traditional SMB, education and home segments. In fact, they are looking to work closely with new set of vendors and startup companies in the areas of emerging technologies. Most importantly, these tier II and III cities are land of immense resource and workforce and ripe with possibilities and future of success.

To tap the emerging possibility and growth of these non-metro cities, **CRN India & Express Computer** is introducing a new market connect initiative - Explore Bharat.

TARGET AUDIENCE

- Small and Medium Business organizations across vertical industries
- IT Channel Partners (SIs, hardware/software partners, managed service partners, solution providers, ISVs, application partners, networking partners, data center partners)

KEY CITIES TO BE COVERED

In the first phase of Explore Bharat, CRN India and Express Computer will go deep down into following cities of each region:

| North | West | South | East |
|-------------------------------|-----------------------|-----------------------|-----------------|
| Chandigarh/ Mohali/ Panchkula | Nashik Surat | Mangalore Amravati | Patna Raipur |
| Bhopal | Gwalior | Kochi | Bhubaneswar |
| Jaipur | Ahmedabad | Mysore | Ranchi |
| Ludhiana | Indore | Vishakhapatnam | Guwahati |
| Dehradun | Nagpur | Thiruvananthapuram | Howrah |
| Lucknow Jammu | Bhilai/ Chandrapur | Coimbatore | Jamshedpur |

Disclaimer: Sponsor has a choice to select from the following options:
Be a part of both SMB and Channel Partner forums across cities | Be a part of only SMB forum
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WHY TO PARTNER

CONNECT - Network and collaborate with potential business owners as well as traditional and emerging IT players of each city

REACH - This multi-city platform will help you to expand footprints

EXPLORE - Target the untapped industry segments

ASSOCIATION TIE-UPS - CRN will be combining forces with Channel Associations in each of the cities

VISIBILITY - Each city will get prominent coverage in print/online editions of CRN

MULTIMEDIA CAMPAIGN - EDMs, Print Ads, Banner Ads, eNewsletters as well as a microsite that will feature event and vendor product information

FOR MARKETING OPPORTUNITIES AND MORE INFORMATION, PLEASE CONTACT

For Editorial : Nivedan Prakash - +91 9769639910, nivedan.prakash@expressindia.com

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New Delhi: Prabhas Jha - +91 9899707440, prabhas.jha@expressindia.com, Vivek Thakur - +91 9871614501, vivek.thakur@expressindia.com Mumbai: Ravindranath Nair - +91 9820955602, ravindranath.nair@expressindia.com, Deepak Patel - +91 9820733448, deepak.patel@expressindia.com Bangalore / Chennai / Hyderabad: Durgaprasad Talithaya - +91 9900566513, durga.prasad@expressindia.com, Praveenkumar Soman - +91 985429991, praveenkumar.soman@expressindia.com KOLKATA: Debnarayan Dutta - +919051150480, debnarayan.dutta@expressindia.com, Ajanta Sengupta - +919831182580, ajanta.sengupta@expressindia.com

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Editor: Srikanth RP *
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The democratisation of AI



In India, AI is becoming pervasive and has now seen adoption in a huge number of firms that are looking to automate some of their key processes. While the usage of chatbots is common now, the potential of AI is being explored to solve some unique problems. For example, Uttar Pradesh state is using an AI powered video analytics tool to monitor prison activity across 70 prisons in real-time. The AI solution will ensure that law enforcement authorities are notified immediately as soon as something unlawful is detected.

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Similarly, in the case of jewellery giant, Tribhovandas Bhimji Zaveri, AI is being used for automating product and attribute identification. TBZ is using AI to look at the design of each jewellery and automatically capturing all the attributes. This will help the firm in not only tracking what is available in stock but will also help it in saving manpower and in estimating cost and pricing.

HDFC Life is using AI to build applications such as Face Sense which compares the images of

customer visiting its branches for payouts with their KYC submitted at the time of policy issuance. This helps the insurer to determine whether they are the same customer, thereby reducing the risk. The firm also uses text mining techniques to read customer e-mails and identify the ones who are unlikely to renew their policies.

At ICICI Lombard, when a motor policy comes for renewal past its due date, a surveyor comes and checks the vehicle for any damages. This process has been made AI enabled. The vehicle owner can take a few photographs and upload it for the AI algorithm to check for any damage. In case the vehicle has dents, spots, any kind of damage – then the AI engine decides, based on the photographs whether the policy is eligible for renewal or not. Currently, close to 60 per cent of motor policy renewals, that are past their due date and require an inspection, are processed through AI.

At Wockhardt, an AI-based solution alerts the probability of an employee leaving the firm. This has helped the firm in curbing attrition. AI is being used as a teaching assistant to help students learn at their own pace at IIT Guwahati.

Titan has taken AI to a different level, and has used AI to create new designs of watches. The firm has created an AI based design tool, which after learning from images of existing watches is able to create new watch designs. The AI tool has the ability to blend aesthetic elements of successful watches and re-imagine watch forms. This not only helps in reducing design turnaround time, but also augments the capabilities of its watch designers. Over a period of time, as AI systems analyse massive amounts of data, they will be able to solve some of the biggest problems known to man (example, urban flooding, cure for cancer).

In the future, as AI systems learn and unlearn, expect IT to push the benchmarks of excellence in every business process.

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MUMBAI
Ravi Nair/Deepak Patel
The Indian Express (P) Ltd.
Business Publication Division
1st Floor, Express Tower,
Nariman Point, Mumbai- 400 021
Board line: 022- 67440000 Ext. 527

Ravi Nair
Mobile No. +91 9820955602,
Email: ravindranath.nair@expressindia.com

Deepak Patel
Mobile No. +91 9820733448,
Email: deepak.patel@expressindia.com

Branch Offices
NEW DELHI
Prabhas Jha/Vivek Thakur
The Indian Express (P) Ltd.
Business Publication Division,
Express Building,

B-1/B Sector 10,
Noida 201 301,
Dist. Gautam Budh Nagar (U.P.) India.
Board No : 0120 6651 500, Ext:270
Direct No : 0120 665 1270
Fax No : 0120 4367 933

Prabhas Jha
Mobile : +91 9899707440
Email id: prabhas.jha@expressindia.com

Vivek Thakur
Mobile : +91 9871614501
Email id: vivek.thakur@expressindia.com

CHENNAI
Durgaprasad Talithaya
The Indian Express (P) Ltd.
Business Publication Division,
8th Floor, East Wing,
Sreyas Chamiers Towers
New No.37/26 (Old No.23 & 24/26)

Chamiers Road,
Teynampet, Chennai - 600 018

Durgaprasad Talithaya
Mobile: +91 9900566513
Email: durga.prasad@expressindia.com

BENGALURU
Durgaprasad Talithaya/ Praveenkumar Soman
The Indian Express (P) Ltd.
Business Publication Division
502, 5th Floor,
Devatha Plaza,
Residency road,
Bengaluru- 560025

Durgaprasad Talithaya
Mobile: +91 9900566513
Email: durga.prasad@expressindia.com

Praveenkumar Soman
Mobile: +91 9895429991
Email:
praveenkumar.soman@expressindia.com

HYDERABAD
Durgaprasad Talithaya
The Indian Express (P) Ltd.
Business Publication Division
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Somaji Guda, Hyderabad – 500 082

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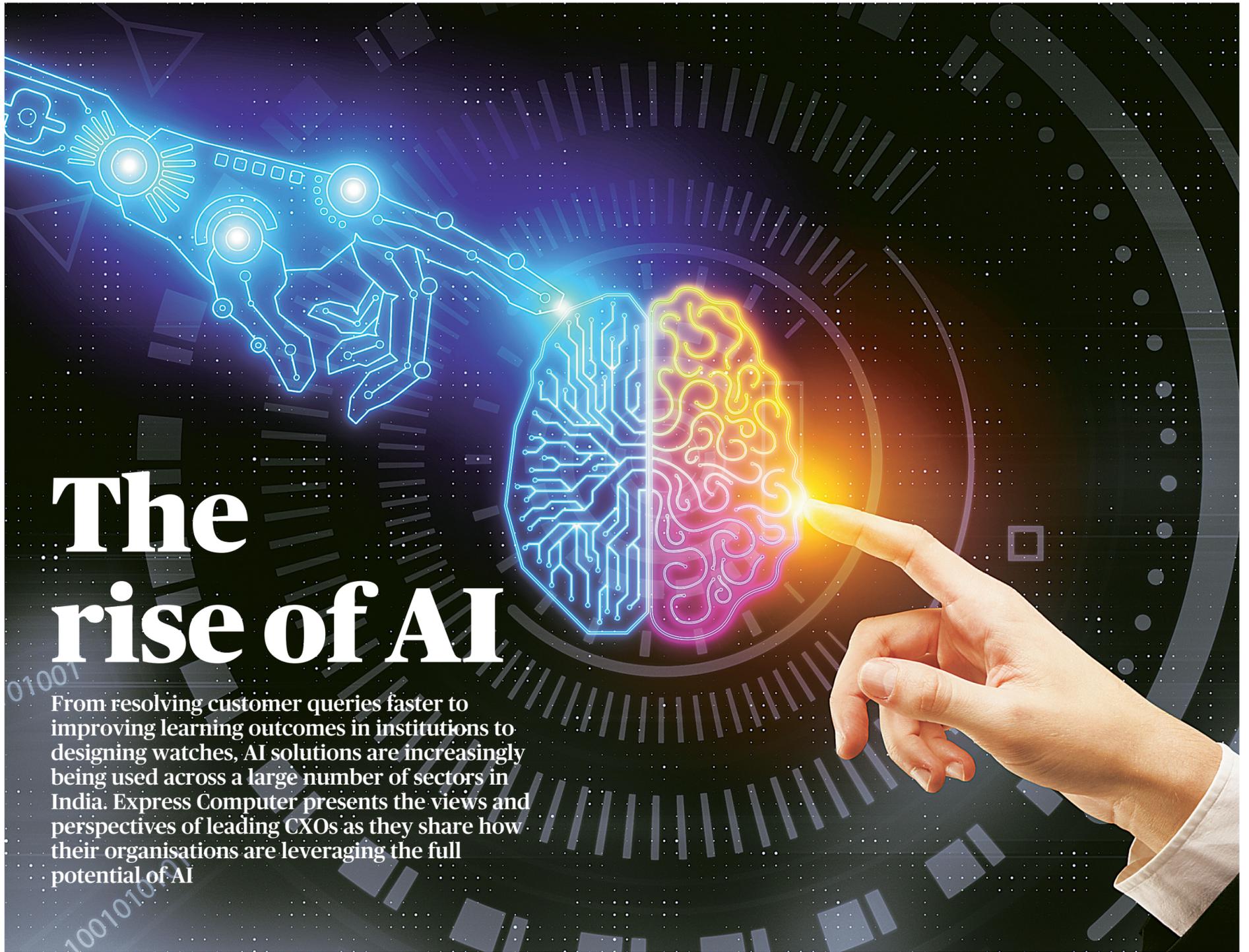
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(Nr. Ankurhati Check Bus Stop),
Dist. Howrah- 711 409

Debnarayan Dutta
Mobile No. +91 9051150480,
Email: debnarayan.dutta@expressindia.com

Ajanta Sengupta
Mobile: +91 9831182580
Email : ajanta.sengupta@expressindia.com

AHMEDABAD
Nirav Mistry
The Indian Express (P) Ltd.
3rd Floor,
Sambhav House,
Near Judges Bunglows,
Bodakdev,
Ahmedabad - 380 015,
Mobile No. +91 8866874517
Email: nirav.mistry@expressindia.com



The rise of AI

From resolving customer queries faster to improving learning outcomes in institutions to designing watches, AI solutions are increasingly being used across a large number of sectors in India. Express Computer presents the views and perspectives of leading CXOs as they share how their organisations are leveraging the full potential of AI

AI is used across the entire customer value chain in HDFC Life

HDFC LIFE, ONE of India's leading private life insurance companies, has been at the forefront when it comes to technology based innovations. HDFC Life uses AI across various processes, and believes that AI provides strategic competitive advantage to the company. **Parvez Mulla**, COO, HDFC Life, shares his perspective on the critical role of AI for HDFC Life

By Srikanth RP



What are some of the key processes in which you are using AI?

AI is used across the entire customer value chain in HDFC Life – right from the lead generation stage, where we use computer vision to create a selfie quote to the claims processing stage, where we use machine learning techniques to predict early claims.

We have looked at AI in five categories – Vision AI, Speech AI, Text AI, Machine Learning

and cognitive bots.

With computer vision (Vision AI), we have built applications like Face Sense which compares the images of customer visiting our branches for payouts with their KYC submitted at the time of policy issuance. This helps to determine whether they are the same customer, thereby reducing the risk. Age-timer uses generative adversarial networks to help customers visualise how they would look when they age. This nudges

them to save for their retirement.

We also have built an in-house chat bot Etty, which is deployed on WhatsApp and provides 24/7 service to customers. Sentiizer uses text mining to read customer e-mails and identify the ones who are unlikely to renew their policies.

Our work on Speech AI has enabled us to automate simple renewal calls through our speech bot sVar. We are also able to automate the analysis

of calls through Emolyser thereby identifying the ones which result in unsatisfied customers. These calls are further analysed for more details. **What have been some of the key benefits?**

Machine learning models at the underwriting stage have enabled detection and avoidance of likely claims of over ₹200 cr. Our voice-bot sVar has enabled us to generate PTP (Promise to Pay) from deep lapse customers. Face Sense has been implemented in some of our branches. It enables us to mitigate the risk of wrong payouts. Data lake coupled with Amazon Elastic Search allows us to de-dupe customers instantly

Significance of AI in the digital journey of your firm?

AI is a critical piece of our digital strategy. As a part of Data Labs, AI is one of the five key pillars of our corporate strategy. We have invested in building an AI Centre of



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Parvez Mulla,
COO, HDFC Life

Excellence in Bangalore. Here, we have a team of full-time data scientists and AI engineers of HDFC Life, who have, within the short span of about a year, delivered several interesting products. At the same time, we are interested in learning from the insurtech, fintech and startup ecosystems and have launched an initiative called Futurance, to reach out to the startup ecosystem with clear, well-defined futuristic use cases.

What have you been able to do today that would not have been possible without using AI?

The investment in analytics and AI has enabled several new capabilities. While the list of benefits is long, here are a few use cases which we have successfully implemented at HDFC Life:

- Investment in data lake has allowed real-time customer de-dupe and several cloud native applications
- Machine learning models have enabled us to write the right kind of business and facilitated in predicting and improving persistency
- Face sense and liveness check have reduced the risk of wrong payouts and fraudulent annuities

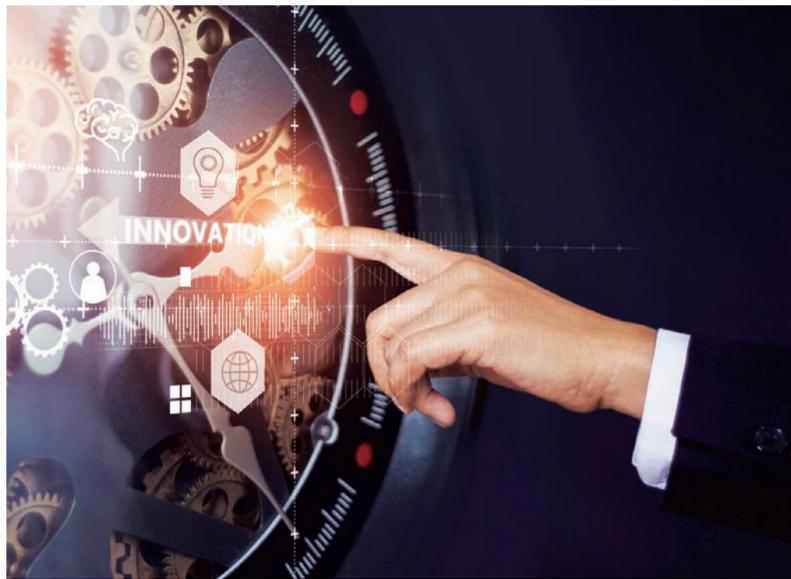
Evolution of AI in your firm - do you see AI handling more complex processes, now or in the future?

Certainly! While we have covered significant ground, there is yet a lot to achieve. We are constantly working at both building new AI capabilities in-house as well as working with external partners to rapidly integrate new promising technologies. Smart collaboration between business and data teams are likely to be the future. The horizons of what cognitive machines can do is expanding everyday and is re-defining the art of the possible.

The key milestones in Titan's AI journey

DESIGNING A NEW watch is a combination of art, science and engineering – melding visual appeal, form factors and comfort with reliable precision to create timepieces that are a pleasure to wear and a treasure to preserve. For decades, Titan has been a leader in this space, with brands such as Fastrack, Raga, Nebula and the eponymous Titan winning the continued admiration and wallet share of discerning consumers. Recently Titan's Artificial Intelligence (AI) experts asked themselves: could algorithms learn from designers and designs and serve as capable assistants augmenting their creative teams? Titan today is doing just that. It is training its AI system to learn from images of its watch portfolio and create new watch forms. **Krishnan Venkateswaran**, Chief Digital & Information Officer, Titan, speaks about how AI is providing new capabilities for Titan

By Srikanth RP



How is Titan leveraging AI?

We use AI in the following key processes:

► **Forecasting:** Titan uses cutting edge Deep Learning techniques (LSTM, ELM) to forecast retail sales. These forecasts are widely used in areas such as sales planning, merchandising planning, inventory management, marketing intervention planning, among others.

Delivering accuracy levels of over 95 per cent, our forecasts have been instrumental in delivering tangible business outcomes such as significant inventory savings, higher merchandise alignment and so on.

► **Marketing campaigns:** AI models (CNN, LSTM networks) are being utilised for enriching Titan's customer

database. This enriched data is leveraged at Titan to run personalised marketing campaigns, a key driver of enhanced customer engagement and revenue.

► **Product design:** Utilising a cutting edge AI technique called GAN (Generative Adversarial Networks), Titan has created an AI based design tool, which after

learning from images of existing watches is able to create new watch designs. An ability to blend aesthetic elements of successful watches, re-imagining watch forms and reducing design turnaround time are some of the ways in which this tool will augment the capabilities of our watch designers.

► **Chatbots:** Titan has built its own AI based chatbot platform, which is being used both externally (for customer queries) as well as internally (for employees queries). Key benefits of the platform include: Cost savings (30-40 per cent automation), improved agility (catering to customer requirements) and enhanced consumer insight (understanding of requirements and issues).

► **Customer feedback analysis:** NLP based Machine learning techniques such as word embedding, topic extraction, sentiment analysis are being applied to extract insights from customer feedback. These consumer insights are shared across the organisation and help address customer pain points across areas such as product, pricing, store and staff experiences.

What have been the key benefits?

Some benefits include: enhanced consumer insights, significant inventory savings, cost savings, improved customer experience and new capabilities in design.

How critical is AI in the digital journey of your company?

Titan is leveraging digital technologies across our business value chain in order to deliver industry leading products, services and experiences, both physically and digitally. AI - Machine Learning and Deep Learning algorithms are playing a critical role in this journey, by providing new capabilities (real time, design creativity, etc) or vastly improved capabilities (prediction, recommendations, etc). Key areas where AI is being utilised at Titan include: merchandising, marketing, customer experience, design, inventory management and retail operations.



Our AI journey is progressing well with successful applications deployed across several complex areas. Going forward, as we expand AI usage, it is expected that AI will take on even more complex applications in areas such as IoT, manufacturing, merchandising, etc

Krishnan Venkateswaran,
Chief Digital & Information Officer, Titan

What have you been able to do today that would not have been possible without using AI?

Many applications such as chatbots, synthetic design tools, image recognition applications, real time recommendation systems, NLP etc cannot be built without using AI technology. Additionally, in applications such as forecasting, merchandise optimisation, using AI based models gives superior results to other options.

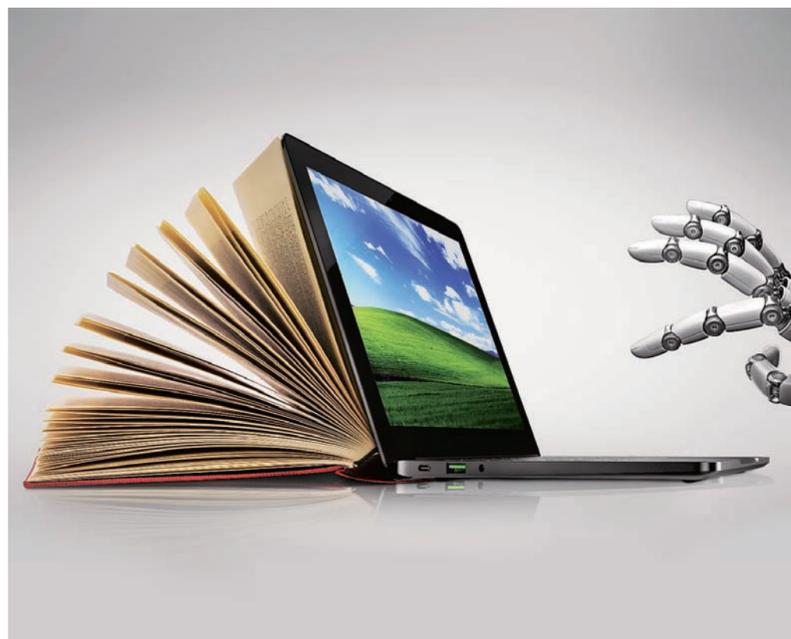
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Use of AI-based assistants have eased the burden on human teaching assistants

IIT-GUWAHATI IS using AI to preserve knowledge and enhance the quality of learning. **Dr Praveen Kumar**, Professor – Dept of EEE, IIT-Guwahati, highlights how his institution is using AI to create an expert system based on AI. This helps the next generation of engineers to learn from the experiences of the past members who are no longer in the lab

By Srikanth RP



How is your institution leveraging the power of AI?

At e-mobility lab (EML), IITG we use AI for three distinct purposes:

► **As an expert system:** Over

the years the lab has executed several projects in the area of EV and has a rich repository of "know-why". We are now training the AI system using collective knowledge and

intend to use it for future projects.

Since engineering design is an art and different experts have different approach to the same problem, we have found

that using AI is the way to preserve this diversity of knowledge. We have also found that using an expert system based on AI helps the next generation of engineers to learn from the experiences of the past members who are no longer in the lab. This enables us to pass the knowledge from one generation to the next and maintain the continuum of information flow. We have named this AI-based expert system as "Smart-Engineer" and it leverages IBM Watson AI platform and IBM Cloud.

► **As a teaching assistant:** At IITG we are using the AI to assist the students in learning. Since students come various backgrounds and have different levels of language proficiency, the AI tutor helps them in learning at their own pace. Moreover, it helps them keep tab on the important information such as examination timings, the syllabus, assignment deadlines, etc. The use of AI-based assistant has eased the burden on the human Teaching Assistants (TAs) and has made delivery of

information fast and accurate. We call this AI-based teaching assistant as "ALBELA." This has been built with the help of the IBM team.

► **As a repository:** Every year fresh PhD students join our group and many graduate out. Whenever we give the PhD thesis of graduated students to new students, they seldom understand what has been done. We are working on an approach where a thesis written by the team members is being trained using AI. The AI enables in converting the thesis into a set of Q/A and will help the new team members to understand what was done by his/her predecessor. We have named it as "Smart Thesis Archiving and Repository (STAR)."

What have been the key benefits?

In our experience, AI based systems are



We have also found that using an expert system based on AI helps the next generation of engineers to learn from the experiences of the past members who are no longer in the lab. This enables us to pass the knowledge from one generation to the next and maintain the continuum of information flow

Dr Praveen Kumar,
Professor, Dept of EEE,
IIT-Guwahati

excellent for converting information to knowledge, and to represent the knowledge in an easy and accessible manner. The flexibility of making a query and getting an answer is a beautiful way of learning and passing the knowledge down the generations. Moreover, the systems are scalable and can cater to the needs of many users simultaneously.

How do you plan to leverage AI in the future?

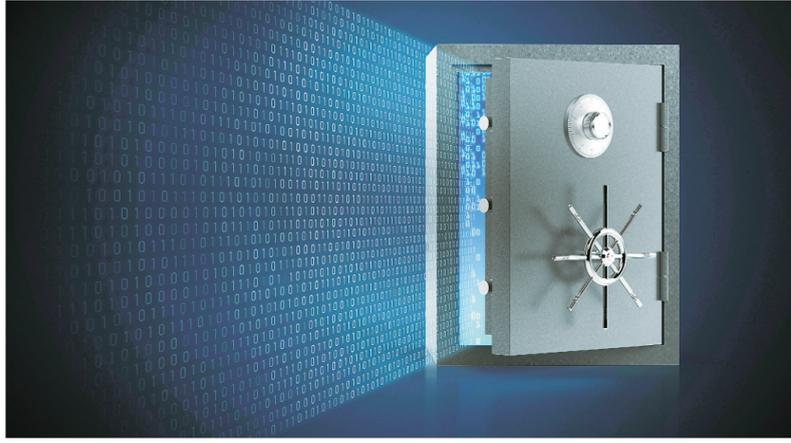
We are very new to AI and are still exploring various application areas. I think in the next 5 to 10 years it will pervade in all the dimensions of our lab's activity, and we will be using AI even without realising it. We are sure that in the near future, we will be using AI in engineering system design.

6 | COVER STORY

AI helps Deutsche Bank open new opportunities

THROUGH THE USE of AI, Deutsche Bank is able to strengthen controls even further in areas such as suspicious activity monitoring, fraud detection, credit risk scoring and ratings, says **Ash Malik**, Managing Director, Global CIO for the Chief Administrative Office and Head of the India Technology Centres, Deutsche Bank

By Srikanth RP



What are some of the key processes in which you are using AI?

At Deutsche Bank we see AI as the theory and development of computer systems able to process and

exhibit behaviours akin to a human beings and perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between

languages.

We use this evolving technology, where the programming instructions and logic utilises learning behaviours, in a number of ways. For our back office

processing, we use cognitive automation, which is extending robotics automation with AI. We also use AI as part of a suite of advanced analytics tools to identify patterns in data that can help us improve our business propositions and avoid unwanted risks. We also have robo-advisors and virtual assistants that leverage AI in the form of Natural Language Processing (NLP).

What have been the key benefits?

We see a three-fold benefits of using AI. Firstly, we improve efficiency, for both our staff and clients, by automating repetitive interactions including those with highly unstructured data. The second benefit is risk management. AI helps us



We will continue to develop and deploy AI technologies across all spectrums of client engagement, sales and trading

Ash Malik,
Managing Director, Global CIO
for the Chief Administrative
Office and Head of the
India Technology Centres,
Deutsche Bank

identifying potential anomalies in internal data and processes, faster and much earlier. Finally, it helps open new opportunities for our clients, by enhancing our offerings to them and improving relationship management.

How critical is AI in the digital journey of your organisation?

We see significant further potential from using AI. It is of a number of technologies that we will leverage to increase efficiency and deliver superior outcomes for clients. The ability to combine AI with other tools and technologies means that it can provide a backbone component for many business solutions.

What have you been able to do today that would not have been possible without using AI?

Through the use of AI, we have been able to strengthen controls even further in areas such as suspicious activity monitoring, fraud detection, credit risk scoring and ratings. It helps us identify and create client-specific opportunities through deep analysis and insights from internal and external data.

Evolution of AI in your firm - do you see AI handling more complex processes now or in the future?

Yes, we will continue to develop and deploy AI technologies across all spectrums of client engagement, sales and trading including algorithmic trading, credit, risk management and compliance, human resources and legal functions.

Bajaj Allianz GI working on advanced applications of AI

THE COMPANY HAS completed the first phase of the automation journey and will soon implement AI in claims, underwriting, etc. A robust data infrastructure is also being built, says **Avinash Naik**, Senior VP, Technology, Bajaj Allianz General Insurance

Abhishek Raval
abhishek.raval@expressindia.com

In the mid of 2016, Bajaj Allianz started the AI journey as a part of the Innovation Program.

The easiest to automate were taken up first – beginning with customer services (implemented chatbots on the mobile app, website, Alexa and Google Chrome), some operational processes, which includes making certain mundane tasks in the financial operations to be RPA enabled.

AI will now be used in some matured use cases – claims adjudication. “We are evaluating how the motor insurance claims can be automated without any manual intervention. AI can be used in scanning the photographs sent by the customer and the claims can be decided upon by the algorithm itself. In terms of the amount of claims that can be offered based on the AI enabled damage evaluation. We are also looking at the underwriting engine that learns on itself and adjusts rates based on the



claims experience,” says Avinash Naik, Senior VP, Technology, Bajaj Allianz General Insurance.

While the machine learning platform is updating and learning in the background, the real intelligence will be built over a period of time.

The benefits have been many. “We have been able to improve the productivity of the customer service representatives and divert them to more intelligent tasks,” says Naik. The operations team is freed up from doing the mundane policy-form handling

job, which has been completely automated.

Bajaj Allianz is building a data lake on the cloud environment, using some of the native services available on the cloud to make the infrastructure ready for advanced use cases of AI. The current solutions are more pointed for certain use cases. Going forward, the matured application of AI for complex use cases will work on tremendous amount of data. It will require a stable and scalable solution to process data seamlessly. “This will



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Bajaj Allianz General Insurance

help us leverage some of the out of the box services for AI – image recognition, Optical Character Recognition (OCR), etc. There are platforms within the cloud model, which allow companies to write their own analytical models, algorithms to scale quickly, instead of beginning from scratch,” says Naik. This journey has just begun at Bajaj Allianz and within a year, analytical models are expected to be launched.

The company has adopted a two pronged strategy to acquire data for AI applications – dumping all the historical data residing in the company’s systems. The second part of this is to enrich the current data with external data sources like the Government and third party data available in the public domain. This will be pooled into the data lake. A data management platform will also be implemented to make this data available on a single platform.

Analyst’s view on AI

Svetlana Siclar, VP Analyst – Gartner



In 2018, AI implementations grew 10 per cent worldwide compared to 2017, but this year, the adoption increase was just 5 per cent, less than last year. Moreover, out of 23 per cent of organisations that were planning to be in production with AI this year, only 5 per cent made it.

Although the number varies by a region, directionally the numbers are right: The reason for this is the shift from early adopters who are all in to fast followers – large enterprises.

Now is the time for enterprise AI: it means less “do it yourself” efforts and more reliance on prebuilt or preexisting solutions, such as AI cloud services and enterprise applications with AI capabilities already built it (think Salesforce Einstein, Microsoft Dynamics, Oracle Financials, SAP Leonardo, ServiceNow etc.). Several industries are much more aggressive and successful in adopting AI. High-tech manufacturing, life sciences, media, retail, insurance and financial industry are the most visible ones in the AI space.

Companies that are successful take an approach of automating routine, manual tasks, rather than automating an entire process; they use AI for cost efficiencies and most of all, they improve customer experience, often adapting consumer capabilities to their business. The most popular type of implementations currently is chatbots. It became clear this year that human augmentation is a more valuable proposition than full automation. It takes deliberation to come up with ideas that make a measurable impact. Those who have those ideas are currently ahead of others, not necessarily because of AI technology, but because they understand how to use this technology well.

TBZ looks at using AI to automate product identification

A well known brand in India, Tribhovandas Bhimji Zaveri (TBZ) is known for its wide range of eye catching jewellery. The company which is has a history of over 150 years, is now looking at leveraging emerging technologies such as AI, Blockchain and Virtual Reality. The jewellery business is an intensely competitive industry



We would like to use AI to look at the design of each jewellery, and help in automatically capturing all the attributes

Pooran Jaiswal,
CTO, TBZ

segment, and the more choices customers have, the higher are the chances of sales. TBZ is looking at leveraging AI to better understand what the customer wants to buy.

Says Pooran Jaiswal, CTO, TBZ, “Each jewellery piece has close to 30-40 attributes. Every store has over 2,000 designs of jewellery. Each day, our jewellery designers

create different types of designs across our stores. We would like to use AI to look at the design of each jewellery, and help in automatically capturing all the attributes. This will help us not only in track what is available in stock, but will also help us in saving manpower and in estimating cost and pricing.” TBZ is using an Oracle-based solution.

ICICI Lombard uses AI for claims processing, fraud detection and policy renewal

INSURANCE MAJOR ICICI LOMBARD has always looked at adopting new technologies like AI and ML that can help the company in acquiring, retaining or in better servicing customers



Abhishek Raval
abhishek.raval@expressindia.com

Leading insurance company ICICI Lombard has an internal team of data scientists developing AI and ML models for some of these use cases. The results thus far have been impressive and they will continue to improve as the AI programs become smarter with more accurate data

► **Medical claims processing:** AI is being used to

process the cashless claims as requested by the hospital. The policy related information; doctor's diagnosis and the course of action recommended by the doctor is ingested in the AI algorithm, which decides the admissibility of the case. This was decided by a doctor at the insurer's end, earlier. Based on the case admissibility, an ML program decides on the optimum claim amount to be sanctioned based on the overall policy sum insured and other parameters.

For example, if the claim amount requested is for an amount of ₹1 lakh, then an ML algorithm could potentially predict an initial sanctioned amount of 80,000 based on the information provided by the hospital and the policy terms and conditions. The ML program sends a message to the effect to the hospital. The final sanctioning amount is established during the discharge of the patient from the hospital.

This entire initial

sanctioning process takes about 90 seconds. The same process when done manually would take three to four hours. "We have introduced this a few months ago for corporate health claims. It started with a single digit success rate. In the last few weeks we have reached 40 per cent. In effect, of all the corporate health claims, over 40 per cent are processed using the AI/ML process. The rest of the 60 per cent goes through human intervention.

The doctors can thus dedicate more time doing the investigation for more complex cases leaving the simple cases for AI to process," says Girish Nayak, Chief – Service, Operations & Technology, ICICI Lombard GIC.

► **Policy renewal:** Typically when a motor policy comes for renewal past its due date, a surveyor comes and checks the vehicle for any damages. This process has been made AI enabled. The vehicle owner can take a few photographs and upload it for the AI algorithm to check for any damage. In case the vehicle has dents, spots, any kind of damage – then the AI engine decides, based on the photographs whether the policy is eligible for renewal or not. This has been operational since December 2018. Currently, close to 60 per cent of motor policy renewals, that are past their due date and require an inspection, are processed through AI.

This renewal process, when done manually used to take about 72 hours depending on the availability of the customer. Now, it happens almost instantly and at the time the customer chooses. The



We started off with the AI journey working with a couple of vendors. However, over time, most of the technology for AI has been built by the internal team of data scientists. This gives us a competitive edge

Girish Nayak,
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Close to 60 per cent of motor policy renewals, that are past their due date are processed through AI

surveyor visits the place personally, if the motor renewal case isn't qualified to be handled by AI.

► **Fraud detection:** Previously, there were certain hard coded triggers and rules that were set for isolating the claims to be sent for further investigation. They are potentially, fraudulent claims. "Earlier, this was done manually but now, it's being done by AI and ML. It's giving us results, which are as good as was previously delivered by the fraud detection team," says Nayak. It will only improve over a period of time as the algorithm learns and auto-corrects through continuous self-learning. The technology has been built by the internal team of data scientists at ICICI Lombard.

The entire processing for AI and ML is done on cloud. "We started off this journey working with a couple of vendors to get started. However, over time, most of the technology for AI has been built by the internal team of data scientists. This gives us a competitive edge," concludes Nayak.

AI powered app at PNB MetLife gives a fillip to customer service

IN AN EXCLUSIVE INTERACTION with Express Computer, **Samrat Das**, CIO, PNB MetLife Life Insurance Company speaks about the strategy for their AI powered app KhUshi - a customer service application, and also highlights the company's Robotic Automation Process journey for driving operational efficiency

By Salvi Mittal

What are some of the key processes in which you are using AI?

At PNB MetLife, technology enables us to align to two of our core values – 'Make Things Easier' and 'Put Customer First'. Our strategy is structured around the concept of 3Ds – Digitise, Data and Disrupt.

We digitise our day to day processes, which enables us in seamless customer delivery; we mine data and draw insights to mark predictable behaviour of the customers, thereby paving us the way to be future ready; we believe that the digital landscape is constantly evolving and hence we disrupt to keep our digital journey ongoing.

Digital transformation had been a challenge for Indian companies for various reasons. Overcoming this challenge has been the main agenda of many CIOs, including myself. However, at PNB MetLife we are able to constantly evolve our technology seamlessly through sets of processes that help in the transition.

While implementing newer technologies, we aim at creating an environment of cost and time efficient

processes that ultimately enhance the customer's experience. Being a life insurance company, our main focus during the transition period stays on keeping the information and data secure. We take intense measures during this period so that there are no lapses during transition phase.

In today's times, we need to realise that digital transformation cannot happen in a silo. A business needs to see benefits from digital assets and solutions. We are happy to state that at PNB MetLife, our digital processes are based on the benefits, which add value to the business.

Last year we launched "KhUshi", a customer service app, an AI-powered app from an insurance company which is capable of understanding the language via text and speech and provide assistance to consumers.

What have been the key benefits?

KhUshi has enabled better customer services by improving our response time. These processes have also helped us in better analysing the sentiments of our customers through the

chatbots. Our chatbots help us to automatically provide information, facilitate a purchase and help stay connected to our customers and deliver them the service they need, 24x7.

Also, since we now have an upcoming set of customer "the millennials" we have moved from "being served to self-servicing mode of service" and hence, providing a personalised experience has become even more paramount than ever. Our apps such as KhUshi allow us provide hyper personalised services to our customers, giving us an edge over the competitors.

How critical is AI in the digital journey of your firm?

We abide by the principle of digitising data to create disruption. We have constantly tried to disrupt the life insurance industry in India with our technology. In today's digital era the technological ability of any firm depends on how efficiently are they able to process the vast amount of available unstructured data for better predictions or business processes. We believe technology is a continuous process and at



PNB MetLife, we are constantly innovating. Be it new regulations or practices, we develop technology, which are imperative to business.

With everything becoming dynamic in this ever-changing era, it has become imperative to embrace meaningful technological solutions and embed them with the business operations to enhance business capabilities. One of such technologies, which was designed with an agenda of aiding sales force with better efficiencies, is eBranch. We launched eBranch in 2016. This 24x7 virtual branch eliminates any dependency on physical infrastructure across bancassurance distribution partners, thereby enabling

faster transactions, resulting in enhanced operational efficiency and better productivity. We have integrated such value driven technologies for several functions – all resonating one of our values – 'Make Things Easier'.

In terms of security, we have robust compliance processes which mitigates such risks. All our technological innovations are regulated by such guidelines.

What have you been able to do today that would not have been possible without using AI?

At PNB MetLife we have embarked into the journey of driving operational efficiency through the lever of Robotic Process Automation. One of the process we have automated is Auto Debit Mandate process.

We introduced RPA for rule based high volume transactions, which are repetitive in nature. RPA plays a vital role in shaping up our digital journey. It allows us to continuously relook at our existing processes and optimise the efficiencies. Besides, the robots which we have deployed are inter-

operable, which means that during month ends or high-volume days, we can make them multi-task and involve them in other processes as well, an aspect not possible for manual systems.

We deployed RPA technology in our organisation six months back for driving operational efficiency. Going forward, as a part of our digital journey, we would come up with process enhancements and our robots will be capable of handling more complex operations then.

Our AI initiatives such as the app KhUshi has allowed us to making better predictions and providing more personalised and customised solutions and services to our customers.

Regarding evolution of AI in your company - do you see AI handling more complex processes now or will it be in the future?

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We deployed RPA technology in our organisation nine months back for driving operational efficiency. Going forward, as a part of our digital journey, we would come up with process enhancements and our robots will be capable of handling more complex operations.

Recently, about eight months ago we have also implemented robotics for 30 internal processes. We implemented these robotics processes based on two principles - substituting only the efficient process with robotics and enabling interoperability to optimise value. We plan on further building these capabilities.

How Hike is redefining social connections with AI

HIKE HAS BROUGHT in the hyper-personal and hyper-local elements by addressing eight-nine Indian languages and by doing sticker recommendations in an effective fashion at a low latency of few milliseconds. Dr. Ankur Narang, VP- AI and Data Technologies, Hike speaks with EC's **Abhishek Raval**



Please share the core guiding principles that you have learned about AI after having worked at some of the top technology companies in the world?

AI essentially is computer programming that learns and adapts from user behaviour. The potential waiting to be unleashed from AI to transform the world, as we know it, is immense. At Hike, we are deploying AI to redefine social connections and empower consumers to

supercharge expression. We are leveraging ML libraries like TensorFlow and some amazing homegrown talent at Hike, but some core principles that continue to guide me are:

- ▶ Focus on high impact AI projects, that can deliver solid business ROI to the company.
- ▶ Delivering through agile methodology; deliver initial output and get buy-in from key stakeholders to stay

invested.

- ▶ Data collection and cleaning critical to obtaining high-quality results.
- ▶ Cross collaboration with business, product, tech essential for AI and ML teams to deliver meaningful impact to the company. Hence, this collaboration should be at the core for ensuring success of AI projects.

Output can be probabilistic. Hence, that needs to be taken into account while deploying for real-world applications.

Output from the AI model needs to be comprehensible to give rational explanations to the domain experts.

What kind of AI roadmap have you set for AI in Hike?

At Hike, the belief is that technology should wrap itself around people and not the other way around and that AI is definitely leading the way to actualise this vision. We have achieved great strides at pushing ML models on the device to help users find stickers they like in real-time and we are on track to enhance the hyper-personal and hyper-local user experience even further. AI & ML is at the core of the company. We've used it in amazing ways to scale

expression like never before.

Our areas of research and application include Natural Language Processing (NLP), Computer Vision and Social Network Analysis (SNA). From creating the largest library of conversational stickers of over 1 million stickers to pioneering research and development in the field, we're excited to enable the next leap in the ecosystem.

We are pushing the boundaries and building a new social future with AI at the core of it. The world is evolving at such a rapid pace, it's only natural for social mediums to do so as well. Social connection is a core human need, important enough to dedicate a mission to. We believe the timing couldn't be better. We're excited to do this with homegrown AI & ML talent.

What have been the benefits of using AI at Hike?

AI has opened the door for tremendous innovation, to further improve things that we today assume have reached their limits. So much more is possible today that wasn't even just a few years ago.

From building radically unique products at the intersection of product, design, engineering and art to cutting-edge work across NLP,

Computer Vision and more. We have been able to make some significant leaps here—from showcasing at renowned global platforms such as TensorFlow World, IJCAI & ECIR to live application of research through our powerful sticker recommendation and discovery features. It's also interesting to note that Hike is the only player that is using NLP to solve for local languages at a mass scale.

With a huge focus on research-led innovation, we have also led partnerships with local academia such as Indraprastha Institute of Technology Delhi (IIT-D). Our unique advantage of enabling locally relevant research, especially for a diverse market like India, has been key for these partnerships. Cultivating a culture of AI innovation has immense benefits both for Hike as well as the ecosystem. As an initiative in this direction, we have recently launched the Hike Patent Programme, which not only incentivises Hike employees with rewards and grants but also lends legal and market guidance to prospective patent filers.

What are your views on having a robust supportive IT infrastructure for AI; for

example, the required amount of data integrity and consolidation/ data lake or warehouse, etc.

Data is the building block of artificial intelligence. Thus, a robust IT infrastructure enabling a solid data storage strategy equipped for the burgeoning data growth is pivotal to AI's success in any organisation. Enterprise Data Warehouse and Data Lake are needed to support diverse data sets that can be used for AI applications. Data flows need to be robust and scalable with high performance. Efficient infrastructure including CPU and GPU clusters are needed to build scalable and complex AI applications for large scale data. Streaming data infrastructure such as Kafka pipelines are needed to provide AI solutions leveraging a combination of online and offline data. Last but by no means least, data security and privacy powered by a robust AI infrastructure are key to ensure the confidence of the user and customer enterprise.

Please tell us about Hike's participation in the Tensor Flow World 2019 conference?

Hike's vision is to build a new social future where social products are joyful. A future

which will see products built around people and not the other way around. To enable this vision the company is guided by six intrinsic principles. A key principle here is advancements in tech and AI. These advancements enable us to push richer and more personalised experiences in real-time to the users. This is where events like TensorFlow World 2019 play a key role. This is the first event this year that saw the best minds in ML come together and discuss the role and impact of TensorFlow and TensorFlow Lite in the community. It was great to represent Hike as the only 'Made in India' company and deliver a keynote on our AI-driven innovations and the unique aspects of how we deliver sticker recommendations. To further elaborate:

With TensorFlow and TensorFlow Lite, the kind of work Hike has accomplished is pretty unique in the country. We have brought in the hyper-personal and hyper-local elements by addressing eight-nine Indian languages and by doing sticker recommendations in a very effective fashion at a low latency of few milliseconds.

AI to check attrition for Wockhardt

THE COMPANY HAS completed a successful pilot of an AI tool. It has the necessary predictive value to preempt potential attrition, says **Dr Murtaza Khorakiwala, MD, Wockhardt**



Abhishek Raval
abhishek.raval@expressindia.com

Wockhardt has a large sales organisation that meets the doctors. There are thousands of medical service representatives that are always on the field. Attrition is high in this function. "We wanted to reduce the attrition and we were looking for ways on how can we achieve that. This would help in keeping in constant touch with the customer and thereby maintaining the business value and also keeping check of human resource management cost – hiring, training the representatives," says Dr Murtaza Khorakiwala, MD, Wockhardt.

AI came to the rescue. "What we have found out from the AI enabled solution is that before the Medical rep leaves, he has decided five-



We wanted to reduce the attrition and we were looking for ways on how can we achieve that

Dr Murtaza Khorakiwala,
MD, Wockhardt

six months in advance," reveals Khorakiwala. The level of engagement, performance and KPIs of such representatives who are in an exit mode, starts getting impacted. There are certain metrics that can be shared with the reporting manager, which will alert him about the probability of a particular employee leaving in the near future. The manager can take proactive action to stop the potential attrition.

The tool has been found with a high productive value. There are various tools that companies can apply in their respective scenarios.

The PoC was successful and the tool was found to be having the predictive factor. "This will soon be implemented in the respective business process and then be extrapolated across the organisation," concludes Khorakiwala.

ICICI PRUDENTIAL LIFE INSURANCE - USE OF ARTIFICIAL INTELLIGENCE

Initially, AI was used in chatbot - for FAQs, product features, etc. It evolved to a stage of doing transactions through the chatbot platform. "We have moved from using AI in smaller processes to now, when the usage has been expanded to all major processes," says Ganessan Soundiram, CTO, ICICI Prudential Life Insurance

AI is used in the underwriting space. The firm has used AI over and above implementing the underwriting engine. It has reduced the underwriting time from 15 minutes to three minutes. "Now, we are planning to move to pattern recognition in terms of improving the



Ganessan Soundiram,
CTO, ICICI Prudential Life Insurance

service processing TAT in underwriting, claims and customer servicing. For instance, we would be able to predict the reason of the customer calling the call centre, even before he submits his query," adds Soundiram. Currently, 1.5 lakh requests are resolved by the AI enabled Life Insurance on the Go (LIGO) channel for customer service.

The company is also using AI in claims. The TAT has improved after using AI - It is 2.3 days after the claim is submitted. AI is also being used for voice IVR.

Tata Capital to soon use AI in running marketing campaigns

EXPERIMENTS ARE OVER in the areas of intelligent search, smart ads, sharper content delivery and seamless learning

Abhishek Raval
abhishek.raval@expressindia.com

The endeavour of Tata Capital is to democratise data in such a way that all functions can take decisions based on data. This will help in making decisions far sharper, will increase efficiency, productivity and effectiveness across the organisation. AI is leveraged throughout the customer journey: from the on-boarding stage and right through the exit stage.

"We use machine learning for scorecards, underwriting thus enabling faster and seamless loan disbursement decisions," says Abonty Banerjee, Chief Marketing and Digital Officer, Tata Capital.

Recently, the company launched the VoiceBot 'TIA' within the Tata Capital mobile app for personal loans. Powered by artificial intelligence, TIA is designed to voice-assist the personal loan customer journey, check loan eligibility and aid the customer through the loan approval process in minutes. TIA aims to create a whole new conversational experience for customers using speech recognition technology, natural language understanding and text-to-speech technology. TIA has the ability to answer customer queries, assist in

simplifying the loan process, help customers choose the right offering and help the customer avail a loan sanction within the Tata Capital app.

Following are some experiments done with AI in marketing campaigns and some of them will be implemented soon. AI influencing marketing outcomes is possible in the following areas:

▶ **Intelligent search:** As advanced technology solutions grow smarter, it's important to remember that audiences are becoming smarter as well. Thanks to social media and rapid-fire search engines (like Google!), people find what they are looking for faster than ever before. AI and big data solutions can actually analyse these search patterns and help marketers identify key areas where they should focus their efforts.

▶ **Smart ads:** Marketers like Tata Capital are already experimenting with smarter ads, with account-based marketing solutions, but AI helps teams take this a layer further for truly insightful analysis. AI solutions are dig deep into keyword searches, social profiles, and other online data for human-level outcomes.

▶ **Sharper content delivery:** Audience analytics can go past the typical demographics level, to understand people on an



We use machine learning for scorecards, underwriting thus enabling faster and seamless loan disbursement decisions

Abonty Banerjee,
Chief Marketing, Digital Officer, Tata Capital

individual basis. Now, marketers can use AI to both identify potential clients or buyers, and deliver the ideal content that's most relevant to them. With big data, machine learning, and AI combined, a marketer can do all of that

▶ **Seamless learning:** Past learnings can be implemented seamlessly in current and future campaigns. Over time, these AI solutions will become even more intelligent, effectively eliminating waste, greatly increasing conversions, and promoting real-time decision-making.

Uber employs AI to connect physical world with digital in real-time

IN AN INTERVIEW WITH Express Computer, **Megha Yethadka**, Director, Program Management Tech, Uber shares how AI, ML and data science are extremely important for daily operations in Uber

By Salvi Mittal



“ We have an exclusive team within Uber called, Uber AI, responsible for the research and advancements in artificial intelligence to solve challenges across Uber

How is AI impacting the digital agenda at Uber? And, how is it a critical factor in the digital journey?

We want Uber to be the operating system in everyday lives for millions of Indians and around the world. Achieving this goal requires

effortless prediction and optimisation at every turn. At Uber, opportunities range from matching riders to drivers, to allocating jobs to food delivery partners, to suggest optimal routes, to finding sensible pool combinations, and even to

create the next generation of intelligent vehicles. All these challenges need to be met at the Uber scale - 700 cities across 63 countries for rides and 500+ cities in 36 countries for eats. Hence, we are combining state-of-the-art artificial intelligence (AI)

techniques with the rich expertise of data scientists, engineers, and other users.

AI is at the core of tech at Uber and extremely important in our journey to connect the physical world to the digital world in real-time. Hence, we have an exclusive team within

Uber called, Uber AI, responsible for the research and advancements in artificial intelligence to solve challenges across Uber.

How is Uber leveraging AI for predictions and monitoring of customer and driver behaviour, leveraging data to empower the customers?

Uber's daily operations generate a humongous amount of data, such as the number of trip requests or food orders, which gives us visibility of how and where to improve our services. We apply data science, artificial intelligence, machine learning, and other innovative technologies in our daily processes.

For example, predicting the traffic and the patterns over the course of the day to provide our users with better traffic predictions, ETA and hassle-free routes. We also extensively leverage data science and AI methods for personalising experiences, automating processes, scaling customer services, building the next set of innovations such as self-driving, etc.

Machine learning, deep learning, and probabilistic programming have shown great promise in generating

accurate forecasts. In addition to standard statistical algorithms, at Uber, we have build forecasting solutions using these three techniques.

How is AI helping you identify and react to problems, and propose the right services?

Uber is about igniting opportunities around the world through mobility. AI is at the very core of the digital world guiding physical mobility.

For instance, we are driving self-service and resolutions on the app. Through NLP, we would understand customer issues and route them correctly to agents and solve issues efficiently. AI also performs ticket analysis to identify how to best handle these queries and issues, forming an approach of feeding it back potentially into the product to improve user experience and leading to more defect-free products.

The broad streams where we extensively deploy AI to develop state-of-the-art computer vision and machine learning solutions, conversational AI to make all Uber interactions as natural as talking to a friend. Further, leveraging sensors along with

algorithms to solve for crash detection, enhanced location accuracy innovations, and even sent phone mounts to drivers for safer driving. We also invest in AI research areas which are very relevant to Uber.

How are you creating the right balance of the skillset to compliment this high-end technology?

We run substantial work in Uber's machine learning operations for Advanced Technologies Group, Uber AI and core tech groups from India. We also run a Machine Teaching incubator to research on setting up industry-leading practices for ML Ops and building tooling and technology that helps scale machine learning and training data creation across Uber.

The skill sets at Uber tech run deep to broad. We are in a growth phase and hiring the right talent continues. We are hiring at all levels - best campuses and lateral with a high bar. Also, there are many on the job learning opportunities. Besides events, fireside chats, tech talks, workshops, tech fairs employees can opt for a rotation program to work in different teams and locations.

‘We are working on truly cutting edge AI and NLP technologies’

YES BANK HAS made significant investments in the futuristic skillsets of AI and ML to leverage enterprise data and derive key customer insights using AI/ML models for superior customer experiences, says **Ritesh Pai**, Chief Digital Officer, YES Bank

By Abhishek Raval



What are the core guiding principles that you have learnt about AI over these years?

From India market perspective, over the past three-four years, AI has evolved from being a nascent phenomenon to becoming a credible strategic tool for addressing business problems. We will witness more action in next six months compared to the last couple of years. This is primarily because a larger ecosystem, outside of traditional banking and financial services is leveraging AI and bots as a

service, and creating a lot of value-additions. Besides industry trends, every organisation should have a clear vision of what they want to achieve using AI solution, with some degree of creativity and innovative approach. One needs to use the platform to their advantage. The winning strategies employed by banks that are undergoing an AI-enabled transformation reveal how to best capture the opportunity. These strategies highlight the need for a holistic AI strategy that extends across banks' business lines, usable data, partnerships with external

partners, and qualified employees.

What kind AI solutions are being used by YES Bank?

During our AI journey of over three years, YES Bank has experimented with and experienced the entire gamut of AI solutions. From simple pre-defined FAQ knowledge database creation for our enterprise YES Bot to a far more sophisticated Microsoft LUIS NLP and cognitive services enabled YES ROBOT for our customers, we are now doing POC for more complex use cases. Certain repeat transactions such as monthly

“ It is critical to have a computationally robust IT infrastructure in place to support huge and varied data pool for advanced analytics, machine learning and deep learning activities for AI based projects

rent payment, utility bill payments and mobile recharges can be entirely automated with limited or no human intervention. These scenarios unlock the true potential of AI banking of future.

What kind of questions should be asked to vendors when buying AI solutions / tools?

Sophistication of the machine learning tool and robust AI model training using quality data are key parameters to gauge the effectiveness and relevance of any AI solution to the business problem at hand. Next comes the augmentation of core AI engine with ancillary services such as Natural Language Progression (NLP), facial recognition, speech to text, Optical Character Recognition (OCR), Robotic Process Automation (RPA) and so on. Vendors should be comprehensively evaluated for core AI features, complementary services and integration with other external applications for holistic AI solution. Specific to BFSI domain, vendors should also be assessed with respect to data security, privacy, compliance, data storage and adherence to regulatory guidelines.

What are your views on having a robust supportive IT infrastructure for AI, for

example, the required amount of data integrity and consolidation / data lake or warehouse, etc?

It is critical to have a computationally robust IT infrastructure in place to support huge and varied data pool for advanced analytics, machine learning and deep learning activities for AI based projects. YES Bank effectively leverages its private cloud infrastructure to address such demanding requirements. Consequently, our systems are flexible and scalable enough to handle applications which have an elastic workload such as statement printing. At the same time, our platform is capable and future-ready for leveraging any cognitive and bespoke service which suits our requirement and best fit for the use case in hand.

What kind of AI roadmap have you set for AI at YES Bank?

Our flagship AI powered chatbot - YES ROBOT - is a comprehensive, secure, 24*7 Personal Banking Assistant for customers and is currently available on our website and Facebook Messenger. Almost three years ago, YES Bank understood the importance of AI in banking and made it an integral part of the bank's digital transformation journey. With several industry first initiatives launched on YES ROBOT, we have witnessed tremendous

acceptance from our customers with total interactions reaching to a cumulative of 11 million as of today. We introduced various services such as booking of deposits with just an OTP for both domestic and NRI customers, managing nominee, instant application for 65+ banking products with CRM integration and many more to ensure utmost convenience to our customers at their home without need to visit a branch or call up a human for assistance.

Currently, we are working on powering more customer touch points such as phone banking and customer care support with our core AI engine. In the near future, we would be extending AI bot services to additional channels/applications such as Whatsapp, IVR and to IoT interfaces like Alexa and Google assistant.

Benefits from AI at YES Bank?

The adoption rate and feedback towards our flagship AI chatbot, YES ROBOT has been encouraging especially with the launch of Industry first feature of booking FD/RD using AI channel. A total of ₹12 billion worth deposits are already booked using YES ROBOT within a year of enabling this feature and has become the most preferred digital channel for booking deposits. With recent addition of nominee management

feature, the entire deposits booking service is now paperless. It has helped the bank enhance its customer service by reducing the time-of-first-response to just a few seconds. The chatbot is witnessing over a million interactions per month responding to approx. 5.3 lakh customer queries last month. Benefits are immense, it empowers users to get their basic banking queries and requests addressed anytime anywhere. Also, it allows our branch staff to be effective in addressing more complex customer requirements.

YES Bank has a dedicated budget for AI. Please share how is the allocation done and what themes have been picked up for this year?

The bank has done significant investments in the futuristic skillsets of AI and ML to leverage enterprise data and derive key customer insights using AI/ML models for superior customer experiences. We are working on truly cutting edge AI and NLP technologies to revolutionise chat and voice bots for offering industry first innovative experience. AI projects drive value across the business, especially in customer service, cost optimisation and revenue generation. Projects promising maximum and quickest RoI are prioritised for execution.

JK Tyre uses AI for making tyres smart and predictable

BEING THE PIONEERS of radials in India, the company has done it yet again by introducing 'Smart Tyre' as an extension to its initiative of providing mobility solutions to both commercial and passenger vehicle owners



Sandhya Michu
sandhya.michu@expressindia.com

Leading tyre manufacturer JK Tyre & Industries, has been a pioneer in using emerging technologies at its different manufacturing plant across India for making the company more agile and scalable. Currently, it has been testing several pilot projects using artificial intelligence, machine learning, RPA and analytics. Recently, two of its Mysore and Chennai plants

have been migrated from legacy IT infrastructure to modern hyper converged infrastructure that has helped the company to keep operational and maintenance overheads to the minimum. JK Tyre has started embedding machine learning and AI for making tyres predictable and enhanced the tyre safety on the road.

Based on his 20 years of industry experience, Sharad Kumar Agarwal, Head - IT, JK Tyre & Industries Ltd is excited about the role of

technology will play in the future of the tyre industry. "We are now entering an exciting, unprecedented time in technology - with the pace of change and innovation continuing to accelerate. We are poised to drive the biggest change since the dawn of the information age. Technology will continue to transform the way we work and live, raising many questions about both opportunities and challenges."

JK Tyre is always keen to evaluate and adopt newer technologies to drive

innovation and process improvement. "We see great potential in industrial IoT technology, AI and ML, and look forward to scaling it into additional plants. In terms of IoT we have successfully completed our pilot projects and we are now planning to deploy horizontally across our plants. Moving forward we are taking a big leap in AI and ML so we can have better control on inventory, assets, warranty and claims process. We intend technology to become not just an enabler but one of the core drivers of our organisation growth," he continues.

Artificial intelligence and its ability to augment human workers is one of the most influential forces shaping the future of work. Together, AI and alternative work arrangements are creating an augmented workforce that challenges organisations to fundamentally reconsider how jobs are designed and how the workforce should adapt. AI can spark new ways of working that blend the best of what machines do with what humans bring to this collaboration.

Sharing the use case of AI, he informs that the company has recently launched a Smart Tyre, which can give data

about how safe or unsafe is driving on the road. It has acquired a Pune-based company for a product called Treel, which has the technology for tyre pressure monitoring system. "Being the pioneers of radials in India, we have done it yet again by introducing Smart Tyre as an extension to our initiative of providing mobility solutions to both commercial and passenger vehicle owners. The introduction of Treel Sensors is the first such high-tech move towards creating smart monitoring and maintenance of tyres. We have launched an app for the same. The driver can see what is the current pressure in the tyres to be safe on the roads," Agarwal informs.

Moving beyond a back-end tool for the enterprise, AI is taking on more sophisticated roles within technology interfaces - from autonomous driving



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Sharad Kumar Agarwal,
Head - IT,
JK Tyre & Industries Ltd

vehicles that use computer vision, to live translations made possible by artificial neural networks. AI is now consistently being used to add frictionless intelligence to people's interactions with technology, creating opportunities to make any interface both simple and smart - driving wider, faster adoption of technology, and providing better outcomes for people. It's not a fluke that AI is growing so pervasively; its reach reflects the value it brings to interactions, making each one more natural and simple. Advances in natural language processing and machine learning make technology more intuitive to use.

"We are looking forward to adopt the usage of above use cases of natural language processing to launch a voice bot to interact with the customers and machine learning to derive analytical business insights," shares Agarwal.

INTERVIEW

The evolution of Mastercard from a credit card company to a leader in digital payment technology

THE US-BASED GLOBAL payment and technology company, Mastercard's India Technology Hub is working to create several low-cost acceptance solutions, in partnership with different fintech startups, to accelerate the adoption of digital payments in the country. **Sukanyya Misra**, Senior Vice President, India Technology Hub at Mastercard shares the digital transformation journey and how using AI and ML is proving to be a great way to make digital exchange safer and more seamless

By Sandhya Michu



Please tell us about the latest deployment of a tech project at Mastercard. What were the business pain points?

The India Technology Hub is Mastercard's largest technology hub outside of the US. We work closely with global and regional technology and business teams to innovate and implement solutions. The India hub plays a major role in bringing many digital

payment solutions and technologies to life. This is across a host of services such as payment safety, clearing solutions, processing, payment gateway services; powering Mastercard's digital, marketing and loyalty programs and enhancing the employee digital experience. These teams play a critical role in developing solutions that make digital payments more accessible, safe, and secure for everyone.

In the fast-growing digital economy in India, there is immense opportunity to bring people into the financial mainstream so that they can transact and grow using powerful digital tools. The pain point in most growing economies is how to ensure connectivity to the last mile so that people in remote areas, micro-merchants and farmers are also included in the growth journey. A great example of our efforts in this direction is the Mastercard Farmers Network - a mobile platform that digitises agriculture marketplaces, payments, workflows, and provides farmers an easy and secure way to buy, sell and receive payments for agricultural products via their feature phones. The tool was developed by Mastercard Labs for Financial Inclusion in Nairobi, Kenya and The Mastercard Labs team in India fully customised it for India, even adding local language capabilities. The platform was rolled out under the name e-Rythu (e-farmer in Telegu) by Mastercard in Andhra Pradesh, in partnership with the state government. The tool aims to help small-scale farmers looking to sell their produce to connect with the right buyers more efficiently in local

language and receive the best possible prices.

Can you share with us the focus areas in your role as a technology leader at Mastercard, taking into consideration the next few years?

I lead the Mastercard India Tech Hub and I'm responsible for driving and optimising strategy for the Hub and its alignment with Mastercard's local and global operations. To elaborate this further, I focus on the India Hub's growth, operational efficiency, talent acquisition and development as well as agile transformation. Another important responsibility for me is to foster a culture of innovation and excellence at the Hub, with a focus on diversity and inclusion and the company's commitment to be a 'Force for Good'. The India Tech Hubs in Vadodara and Pune will continue to grow to cater to Mastercard's global talent needs in both core and digital technology. Mastercard is working to create several low-cost acceptance solutions, in partnership with different fintech startups, to accelerate the adoption of digital payments in the country.

Please share some of the key challenges and

achievements of Mastercard's digital transformation initiatives. What are the significant digital elements?

I see Mastercard driving digital transformation in many spheres. We are leading several efforts with banks, merchants and product companies to enhance the penetration of digital payments in India. These efforts are helping equip small and micro-merchants in tier 2 and tier 3 cities to come into the financial mainstream. Together with our industry partners, we aim to reach 10 million merchants by 2020. Our technologies are enabling digital solutions that are empowering consumers to transact in a simple, safe and secure manner. Take for example, Mastercard's mPOS solution that converts a simple smart phone into a payment acceptance terminal, helping small and micro-merchants go digital with ease. Or the recently launched Mastercard Identity Check Express that makes mobile payments frictionless and more secure. Apart from this, our digital transformation journey as a company has been momentous - evolving effectively from being seen as just a 'credit card' company to, over the years, transforming

into a leader in digital payment technology. Today our network swiftly processes billions of transactions, every year. Our technologies make digital payments more secure and experiences more seamless. We provide insights and expertise that help businesses, banks and merchants prosper in a digital world. We are connecting people, businesses and governments around the world, to priceless possibilities.

What are the required new-age skills of a technology professional?

According to a recent McKinsey Report, the strongest growth in demand will be for technological skills, which will rise by 55 per cent and by 2030. This surge will affect demand for basic digital skills as well as advanced technological skills such as programming. The demand for data scientists and specialists across the areas like artificial intelligence, machine learning and robotics are growing. Businesses are now looking for subject matter experts who can work across diverse portfolios. In addition to these core skills, a professional must possess soft skills that will help them perform better and drive

success in their careers. One must develop communication and business skills in addition to technical expertise.

How does Mastercard use artificial intelligence and machine learning technologies? How these technologies can help improve the turnaround time to tackle fraudulent transactions?

A great way to make digital exchange safer and more seamless is to leverage artificial intelligence and machine learning technologies. With NuData, a Mastercard company, we use advanced intelligence to assess patterns of behaviour, detect Botnet automation and determine the reputation of devices. This allows us to detect patterns of fraudulent activity and take preventive action.

With Brighterion, another Mastercard company, we use artificial intelligence technology that we believe is truly unique - for detecting and preventing payment and other types of first-party fraud in real time. Another example is the Mastercard Safety Net which leverages Mastercard's global network to identify unusual behaviour and potential attacks - often before the bank, processor, or merchant is even aware.

How an app is changing the healthcare scenario in Gujarat

GUJARAT HAS INTRODUCED many initiatives in the Health and Family Welfare Department, which have helped citizens to a great extent. In order to find out how successful the TeCHO+ app is and how it has brought a paradigm shift in the coverage and quality of health services, Express Computer's **Vishwas Dass** interacted with **Dr Jayanti S Ravi**, Principal Secretary, Health and Family Welfare Department, Government of Gujarat. The key features of TeCHO+ for the field workers include alerts and reminders for due health services, digital checklist to ensure compliance with standard clinical guidelines and decision tree triage for screening among others



Please tell us about the TeCHO+ project of the Department of Health and Family Welfare. How successful has the project been over the past few years?

Technology enabled Community Health Operations, better known as, TeCHO plus or TeCHO+ is an initiative of the Government of Gujarat in collaboration with Argusoft, Sewa Rural and UNICEF to further improve coverage and quality of health services using a state-of-art mobile enabled public health solution that can help in achieving the sustainable developmental goals (SDGs) related to health, nutrition and wellbeing. This comprehensive health technology solution has two components - mobile and web application for tracking health services and health status of the citizens. It was initially a job aid used by the auxiliary nurse midwives (ANMs) at the field, but now covers all cadres of field health workers of the health department as well as the supervisory cadres in the health facilities.

The key features of TeCHO+ for the field workers include alerts and reminders for due health services, digital checklist to ensure compliance with standard clinical guidelines, decision tree triage for screening and risk stratification of serious illnesses, customised treatment notifications based on risk stratification, and short video clips for counselling. The list of services that they have to provide are very clearly shown to them in an easy to use interface and since the application also works offline, they can view these and enter data even if there is no internet. They also can view auto generated reports of the work done by them instead of manually maintaining paper records.

The key features of TeCHO+ web application for the supervisory staff include the ability to track the work done by the field workers such as how many people logged into day or number of pregnancy registrations and all such important aspects plus performance reports about the work getting done on the field. They also get reminders for high risk cases and notifications for stock

outs on which they can take timely action.

TeCHO+ also has a call centre interface which verifies quality of data and also help in referral of high risk cases through 108 ambulance services.

Since its launch in October 2017 by the Prime Minister Narendra Modi, all 10,793 ANMs of Gujarat have been provided with TeCHO+ application enabled smart phones. The project is presently working in all the 33 districts and eight municipal corporations. A total of 6.4 crore citizens (98 per cent of estimated state population) are already registered by ANMs through TeCHO+ mobile application. More than 8.5 lakh m-transactions occur in RCH module of TeCHO+ every week. Evaluations of pilot have noted 16 per cent reduction in infant mortality rate and found it to be highly cost-effective. The project has reduced inequities and promoted gender equality as all users of the TeCHO+ are women health workers. The scope of TeCHO+ has expanded by including other health domains such as non-communicable diseases in context of the Health and Wellness Centers of Ayushman Bharat, tracking of malnourished children and children with cerebral palsy.

It is learnt that TeCHO+ consists of eight indicators. Could you shed some light on how this app is helping the government improve health services in the state?

TeCHO+ is a boon for the health department as it effectively delivers the desired results. For instance, it ensures real-time tracking of the services delivered to people at their doorsteps. Since, TeCHO+ uses the Family Health Survey as the base denominator, the health status of a citizen is being tracked longitudinally, which has always been a key expectation for a long time.

Maternal Mortality

Ratio (MMR) of Gujarat is 91 per one lakh livebirths. Gujarat is committed to achieve Sustainable Development Goal of MMR 70 in 2022 and 45 in 2030. To achieve this, it is essential to ensure provision of due services to every pregnant woman without disruption of service; early identification and tracking of early signs of high risk and timely treatment/referral services if required. TeCHO+ can play an important role in real-time tracking.

Infant mortality rate of Gujarat is 30 per thousand live births, the same has been desired to be 10 in 2022 and six in 2030 under the SDGs. This can only be achieved by providing timely services to each newborn where TeCHO+ will play an important role.

Similarly, TeCHO+ will help in reducing total fertility rate and unmet needs, ensuring minimum three years spacing between two children, increasing the percentage of full immunisation of children 0-1 years, increasing use of contraception, control of communicable and non-

communicable diseases, reducing prevalence of malnutrition, anemia control and diagnosing psychiatric diseases and providing proper treatment.

TeCHO+ also has call centre interface which is managed by the call centre at GVK EMRI. The call centres makes reminder / call services through 104 helplines to increase awareness and get due service, to receive treatment of high risk pregnancy and child-related diseases, ensuring institutional delivery and services to mother and child of out reached and underserved areas. It also verifies the authenticity of the services reported in TeCHO by directly calling the beneficiaries to ensure service delivery. High risk mothers and children will also be tracked through this helpline and PHC medical officers, ANM will be informed about the status of these beneficiaries. There will be provision of ensured referral linkages in high risk cases. Supervisors and health officials will receive an alert message if due services are not being provided to high risk mothers and children.

What major changes has the TeCHO+ app brought in the working style of ANMs?

The ANMs now have a very handy list of work items curated for them and they have to provide these services-without having to run through multiple registers or determine by themselves as to who has to be given which service on a certain day.

The system helps in timely identification and immediate treatment to beneficiaries especially in the case of high risks. Real time data entry ensures that the work that they do is immediately noticed by the supervisors and due appreciation is received. The supervisors find the timely reports beneficial for taking corrective action quickly and improve the overall health profile of the entire state. With the help of inbuilt video, it is

easy for them to counsel the beneficiaries. The app is useful for timely identification and immediate treatment to the beneficiaries. The ANMs now have access to data that is verified and without duplication which they can trust more rather than the paper-registered data where the data may even be very obsolete. A full referral cycle with clear cut paths for handling high risk cases provide more transparency and tracking of a beneficiary who was reported by the ANM.

How do you tackle duplication and migration cases through TeCHO+ app?

TeCHO+ is having enhanced migration module to track migration of beneficiaries and thus minimising the duplication of data. In TeCHO+, an ANM can migrate a beneficiary from her location to another location right from her mobile interface as the entire state location hierarchy is available. There is also a full confirmation cycle where the other ANM also confirms the migration after meeting with the beneficiary who has moved into her location temporarily. There are also several other scenarios that are covered where the call centre also is involved in ensuring a proper migration and continuity of health services at their new location.

What are your plans of incorporating more services into the TeCHO+ app? Do you plan to include services like finding nearest hospital through this app for citizens?

An app called 'My TeCHO' has been developed and will be launched very soon. It will be available on the Google Play Store as well as Apple



TeCHO+ is a boon for the health department as it effectively delivers the desired results. For instance, it ensures real-time tracking of the services delivered to people at their doorsteps

Dr. Jayanti S. Ravi
Principal Secretary, Health and Family Welfare Department, Government of Gujarat

iStore soon for citizens. This has a host of features including a feature where one can find guidance related to his/her health problems, tracking of health records, triaging for any health conditions and seeking assistance from the govt health system or even the private eco system for resolution of their health concerns.

How exactly has the TeCHO+ app helped in taking better care of the expecting mothers and new born babies in the state?

One of the key benefits of the TeCHO system is improving the timeliness in attending to issues that can save lives. As of October 14, 2019 total 92.9 per cent of pregnant woman, 91.07 per cent of children registered and 85.36 per cent children have been fully immunised during this financial year.

Do you believe information technology has played a key role in this project?

Technology has played a very key role in this whole thing. Medical science is very advanced today and there are very clear protocols that are available in the public health system to manage most of the high risk scenarios or NCDs. But one of the issues were these protocols could not be applied in a timely manner. Now TeCHO+ has become the bridge at the last mile and the timely diagnosis, referrals is shaping it into a great life saving technology.

What is the current status of health survey of the citizens of Gujarat?

Till date total of 6.48 crore population has been enrolled in TeCHO+ and as per the estimation, only six lakh people are yet to be enrolled.

One of the key benefits of the TeCHO system is improving the timeliness in attending to issues that can save lives



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Prabhas Jha (Sales) – +91 9899707440, prabhas.jha@expressindia.com | Srikanth RP (Editorial) – +91 9819687097, srikanth.rp@expressindia.com

FOR SPONSORSHIP & EXHIBITION BOOTH

NEW DELHI: Prabhas Jha – +91 9899707440, prabhas.jha@expressindia.com **MUMBAI:** Ravindranath Nair – +91 9820955602, ravindranath.nair@expressindia.com
BANGALORE/CHENNAI/HYDERABAD: Durgaprasad Talithaya – +91 9900566513, durga.prasad@expressindia.com, Praveen Kumar Soman – +91 985429991, praveenkumar.soman@expressindia.com **KOLKATA:** Debnarayan Dutta – +91 9051150480, debnarayan.dutta@expressindia.com
Ajanta Sengupta – +91 9831182580, ajanta.sengupta@expressindia.com

FOR DELEGATE REGISTRATIONS

Vinita Hassija: +91 9820590053, vinita.hassija@expressindia.com