

# Everything you want to know about AI in India

Best use cases of how AI is transforming  
businesses



# Why AI can be a game changer for India

In the past, India has been fortunate to leapfrog generations in several technologies, such as the time when the country leapfrogged into the mobile wireless era. Legacy did not matter and another such opportunity beckons India once again. If executed well, a well thought out Artificial Intelligence strategy, can take India into a different league. For example, Accenture in a recent report, has highlighted that AI can boost India's annual growth rate by 1.3 percentage points by 2035.

In sectors like healthcare, India clearly needs affordable and improved access. AI can be a huge differentiator as AI can be used for quickly

identifying patterns from thousands of images in cases involving diseases such as cancer. This is significant as India sees more than one million new cases of cancer every day. NITI Aayog has already taken steps in this direction by trying to create a national repository of annotated and curated pathology images, which aided by AI will help in accurate, precise and comprehensive detection of cancer. Similar opportunities exist in agriculture (precision agriculture), education (reducing dropouts) and transportation (reducing congestion and improving traffic flow).

In the enterprise sector, AI has already been used to great effect. Almost every bank is using an AI-enabled chatbot to quickly resolve customer queries. Financial institutions can also use AI-based solu-

tions to identify abnormal transactions. Some firms are also experimenting with AI-based techniques to detect cyber attacks early and reduce the time taken between detection and response.

That said, AI's real potential can be seen from the examples of numerous AI focused startups, who are developing innovative solutions to solve traditional problems. For the casualty insurance sector, BRIDGEi2i Analytics Solutions, provides automated identification of defect type, damage counts and severity using drone images, as manual inspection of rooftops to assess damages is expensive. Similarly, Staqu's AI-based solutions are used by the police forces of Rajasthan, Punjab and Uttarakhand to identify criminals in real time from CCTV footage. This has already helped the police bust eight terrorist modules and apprehending more than 400 gangsters.

Though India today does not have the required skillsets in AI, it is trying to catch up with the rest of the world through a renewed thrust. NITI Aayog has already submitted a detailed paper to the government, and has suggested creation of a multi-stakeholder marketplace for AI. As the NITI Aayog paper on AI notes, "India provides a perfect "playground" for enterprises and institutions globally to develop scalable solutions which can be easily implemented in the rest of the developing and emerging economies. Simply put, Solve for India means solve for 40 per cent or more of the world." Just as India became the software services powerhouse of the rest of the world, can India don the mantle of providing domain-based AI as a service to the globe? While these are early days, the potential to be the AI garage of the world is bright and can change the country's fortunes significantly.



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# AI WILL UNLEASH THE POWER OF OTHER TECHNOLOGIES

AI applied on alternate, external sources of data to provide significantly better results, especially when there is no formal source of credit history

**A**rificial Intelligence (AI) has become a buzzword now, however, it is an area of technology and domain knowledge that has been developing for decades. It has been called by different terms including, neural networks, data science, cognitive systems, etc, over the years. AI basically involves making a computer 'think' like a human being. Trying to make it learn by itself. The

computer is programmed to learn from data and responses it gets over time, and to fine tune its own response based on that learning. The uses of this technology can be quite broad based, from planning, recognising objects or sounds, speech or even writing poetry.

“In the last few years, AI has matured to the point that it can be applied by enterprises to provide considerable value,” says Aruna Rao,

Sr EVP & Group Chief Technology Officer, Kotak Mahindra Bank. It can be applied to structured data, for example customer data or transactions information available in an organisation's application database. It can also be applied to unstructured data. For example, the click logs of a customer browsing on the portal or social media activity. Machine Learning (ML) and Deep Learning are aspects of AI technol-



**At Kotak, we follow a mix of appointing AI skilled talent as well as training veteran personnel**

**Aruna Rao,  
Sr EVP & Group Chief  
Technology Officer,  
Kotak Mahindra Bank**

ogy that involve putting this data together and having the computer analyse it to come up with meaningful and practical conclusions. Such technology has been applied to a wide range of decisions, from making credit decisions for loans to customers, to offering a customer discounts on products that he/she is more likely to purchase.

### **AI will augment existing technologies**

Data analytics and AI will underpin many other technologies and will power them to provide greater value. For example, in business rule engines, conventional logic will be augmented to use AI applied on alternate, external sources of data to provide significantly better results, especially when there is no formal source of credit history. “Core banking systems will have embedded AI to raise alerts on suspicious pat-



terns of transactions for a customer. AI will be used to better understand an individual’s habits and preferences to personalise and improve a customer’s experience on mobile and desktop interfaces,” says Rao.

### **AI at Kotak Mahindra Bank**

Kotak Mahindra Bank has established a big data platform and upgraded its data warehouse capability, facilitating improved analytics and AI. This capability is now being leveraged for different purposes. “One area, where it is being applied,

is voice-bots and chat bots. ‘Keya’, the first AI powered voice bot in the Indian banking sector, was built using Natural Language Processing (NLP) technology, augmented by AI,” says Rao. Developed on a library of millions of phone banking conversations, Keya services customers in English and Hindi and facilitates the resolution of customer queries in a single interaction.

### **Talent sourcing for AI**

AI requires different types of skillsets. This includes technology

skills to be able to extract the data, manage big data platforms and design tools. And it also requires data scientists, who understand statistics and use it to analyse and build business models to predict behaviours. “At Kotak, we follow a mix of appointing AI skilled talent as well as training veteran personnel, who understand banking and the existing technology landscape in the new proficiency. We have hired specialists and a part of the expertise is built from training the existing team,” concludes Rao.



# NITI AAYOG AIMS AT 'AI FOR ALL'

**Anna Roy, a 1992-batch** officer of the Indian Economic Service and an advisor at NITI Aayog, who was instrumental in bringing out the paper on National Strategy on AI, sets the roadmap in 'AI for All' mission

**By Sandhya Michu**

**I**n the domain of Artificial Intelligence (AI), NITI Aayog has been developing India's National Strategy on AI and is also reportedly in the advanced stages of creating the National Data and Analytics platform. NITI Aayog has been working along with the academia, government departments and agencies and technology companies to define the best practices for the usage and implementations of AI.

Roy says, "The core focus of NITI Aayog is to collaborate on devising implementation framework for solutions based on emerging technologies; work to identify best practices and propagate solutions across the country; identify suitable financial support channels for funding pilots based on emerging

technologies in different states, as well as establish centres of excellence."

Sharing more about the discussion which NITI Aayog is having around the National Strategy for AI, she says, "The government is working on an objective of the #AIforAll strategy. We are looking at high impact areas that India could bet on. The world is certainly looking at AI, but does India need it? If yes, what are its unique applications?"

In her deliberation, she pointed out that the maximum AI deployment has happened in sectors with commercial interest. The government needs to play a bigger role while aiming at inclusiveness. Although in comparison to its global counterparts, India is a bit late to

## NITI AAYOG OUTLINES KEY RECOMMENDATIONS TO IMPROVE AI ECOSYSTEM

### Promoting research

- ▶ Focus on both core and applied research; grand challenges and CERN for AI

### Skilling

- ▶ Decentralised training mechanisms, promotion of job creation in new areas

### Accelerating adoption

- ▶ Three-pronged marketplace approach for data, annotation and deployable models

### Ethics, privacy and security

- ▶ FAT framework, consortium of ethics council

the AI party; however, the energy and enthusiasm of the Indian government is at its peak.

Internationally, there is a race between China, the US, and Russia in the AI space. It is clear, for instance, that China doesn't just want to develop AI solutions for itself, but also set global standards. International commentators have also noted how the gap between the US and other countries on the defence front is reducing as its rivals adopt AI solutions rapidly.

Urging the Indian startup ecosystem to build AI solutions that are 'Made to work for India', the government has now geared up to formulate guidelines and policies for AI utilisation in different industries. As the first step towards streamlining AI utilisation in the

country, the Task Force constituted by the Ministry of Commerce and Industry has recently released its report on the adoption of AI in the country. The report has suggested building an AI policy with a five-year mission with a targeted investment corpus of US\$ 184 million (₹ 1,200 crore) spread across different initiatives under various government departments.

Talking about the areas where AI utilisation can add significant value and retain the competitive edge, thus preventing the future loss of jobs, she mentions, “Manufacturing, FinTech, healthcare, agriculture/food processing, retail/customer engagement, aid for differently-abled/accessibility technology, public utility services, education and national security.”

The most important challenge in India is to collect, validate, standardise, correlate, archive and distribute AI-relevant data and make it accessible to organisations, people and systems without compromising privacy and ethics. Data is the fuel that powers AI and there is a need for creating ecosystems that could encourage free flow of data and information. “These are the areas where the Indian government must focus to play a prominent role.

THE POTENTIAL USE CASES IN FOCUS SECTORS	
<b>Agriculture</b>	<ul style="list-style-type: none"> <li>Soil health monitoring and restoration</li> <li>Corp health monitoring and real time advisories to farmers – Precision Agriculture</li> <li>Advanced detection of pest attacks</li> <li>Prediction of crop prices to inform sowing practices</li> </ul>
<b>Healthcare</b>	<ul style="list-style-type: none"> <li>AI driven diagnostics like imaging diagnostics</li> <li>Personalised treatment</li> <li>Identification of potential pandemics</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>Adaptive learning tools for customised learning</li> <li>Intelligent and interactive tutoring systems</li> <li>Predictive tools to inform pre-emptive action for students predicted to drop out of school</li> <li>Automated rationalisation of teachers</li> </ul>
<b>Urbanisation</b>	<ul style="list-style-type: none"> <li>Smart homes and smart public facilities</li> <li>Safety systems</li> <li>Crowd management</li> <li>AI driven service delivery</li> </ul>
<b>Mobility</b>	<ul style="list-style-type: none"> <li>Autonomous trucking</li> <li>Intelligent transportation systems</li> <li>Community based parking</li> <li>Route flow optimisation</li> </ul>

If implemented well, these guidelines pertaining to different sectors can certainly lead to an improved quality of life for Indian citizens as well as generate employment and

growth,” states Roy.

### Challenges

Only four per cent of AI professionals in India have worked on

emerging technologies such as deep learning and neural networks. Serious research work in India is limited to less than 50 researchers, concentrated mostly at institutes like IITs, IIITs and IISc. Moreover, India ranks 19th globally in the country wise H-Index, she points out.

### A new opportunity

There are three foundation pillars for AI in India: technology advancements, collaboration, and adoption. As there are fears around AI eating up jobs, Roy believes that it will not be the reality, which is also the reason why NITI Aayog’s document focuses on skilling. She also said that jobs are changing; 46 per cent of the Indian workforce will be engaged in entirely new jobs that do not exist today or jobs that have radically changed the required skill sets. There will be a demand-supply gap of two lakh data analytics professionals by 2020. Demand of AI specialists in India will grow by 60 per cent by the end of this year.

The NITI Aayog discussion paper recommends incentivising creation of jobs that could constitute the new service industry – jobs that would ideally be a part of the

AI solution development value chain, but require a relatively low level of expertise, so as to create employment at scale. For instance, work like data annotation can employ a large quantum of human resources.

In the area of AI competence, the papers have also recommended building research capabilities which will be the key to India's ambitions of becoming a global leader in AI. The paper has suggested the need of setting up a simplified and agile two-tiered structure. The other one is through recognition and standardisation of informal training institutions. According to the discussion paper, tech-hubs like Bengaluru have many traditional IT training institutions establishing courses in new-age technologies, yet they are not standardised.

### Marketplace for data

NITI Aayog has proposed creation of a multi-stakeholder marketplace. A three-pronged, formal marketplace could be created, focusing on data collection and aggregation, data annotation, and deployable models. There could be a common platform called the National AI Marketplace (NAIM). The



## India provides the perfect playground for enterprises and institutions globally to develop scalable solutions, which can be easily implemented in the rest of the developing and emerging economies

### Anna Roy, Advisor, Niti Aayog

benefits envisioned are to incentivise unlocking of data, reducing asymmetry of information, encouraging specialisation, and explore co-funding of annotation of large data sets with wide application in sectors of focus.

A good governance structure for marketplace is also needed. "We want to promote startups, so we have proposed International Centres for Transformational Artificial Intelligence (ICTAI), wherein startups can develop AI tools. A lot of startups will come up in data annotation, data generation. That is why we have proposed the marketplace," says Roy.

Roy said that implementation is the key for success of AI in India. "Consultation has been done on the

strategy, and now we will be looking at implementation," she says. Each recommendation would have to be taken up on its own – it would need consultation with the academia, government agencies, and other stakeholders. For rolling out AI projects, one needs to consult with local bodies as well. "This is a macro matter – whether it is a civic body or a state body will depend on what problem we are solving. The government is extremely keen to take AI as the thrust area. The ministry has submitted a report on AI and is looking forward to implement AI in all governance and across the industry. She also assured the government's full support for the AI industry and to build and maintain a startup

ecosystem that promotes innovation," she says.

### NITI Aayog's approach

Providing a background of prevailing gaps and India's positioning vis-à-vis other countries, Roy suggested recommendations to overcome these gaps. She emphasised the implementation plans for all recommendations, establishment of timelines and funding requirements for actions and undertaking of proof-of-concepts (PoCs) in sectors of focus.

"Niti Aayog will act as a platform for cross-learning and reaching out for project-specific help. It will need further state governments' support to help unlock data sets of value, shape direction of research and collaboration and fund research institutions such as ICTAIs and COREs. India provides the perfect playground for enterprises and institutions globally to develop scalable solutions which can be easily implemented in the rest of the developing and emerging economies," concludes Roy.

*(She was speaking at the recently held Express Computer and Amazon Internet Services Pvt Ltd conference in Delhi)*

# YES BANK HAS A DEDICATED BUDGET FOR AI

The bank is working on multiple initiatives on Artificial Intelligence (AI); from using AI to reform its call centre strategy, to opening up new lines of businesses. Ritesh Pai, Senior President & Country Head, Digital Banking, YES Bank, in an interaction with **Abhishek Raval**, shares more details

## What is YES Bank's AI strategy?

AI has a lot to do with how good the Natural language Processing (NLP) engine is - it is the heart of AI. Under our strategy, the central NLP will be owned by the bank, but still we will continue working with multiple partners, because they may have expertise in a specific domain. For example, some company might be good at customer acquisition, another may be an expert in RPA. We are working with a partner, who will reformat our call centre strategy.

For YES Bank, digital has to translate into the four principles we operate upon. It should fulfill either

of the four - create new business line, deepen the existing businesses, build operational efficiency, or open up a way for better customer service. Deepening the existing business is the area the bank has targeted. The bots created by the bank give us a 'Go' or a 'No Go' signal in providing retail loans and credit card issuances. One of the branches of AI, Robotic Process Automation (RPA) is helping us process voluminous activities like salary upload, clearing and settlement, reconciliation, etc.

Specifically, the time taken for a typical salary file upload, has come down to three minutes from 45 min-

utes. These are the operational efficiencies that have arrived after adopting RPA. There is a pipeline of 100 processes that we plan to automate.

Thirdly, the bots created by the bank are answering the FAQ kind of questions, which were hitherto answered by call centre agents, or through emails. These include questions related to ATM, branches, banking products, processes. The advantage we have found in the bots answering the queries is, they are standardised and there is hardly any variance in giving responses to the same questions. Usually, the same question asked to dif-

ferent call centre agents are answered differently, which is not the case with bots. The constraint of time for serving the NRI customers because of the time zone difference is also solved. Bots can serve at all times of the day, non-stop. We have also reduced call centre hiring. YES ROBOT, our retail facing chatbot has reported over 3 Million interactions since its launch last year. The bot has resulted in approximately 10% increase in bandwidth at our customer care.

Bots have also been integrated with Facebook Messenger to cross sell, upsell and engage customers in a better way.

### Are you exploring AI for opening up new line of businesses?

Because of the India Stack, many payment platforms have taken roots in India. As a result, banks can offer services to non customers too. Typically, mobile banking and internet banking can be offered to our savings account holders. However, because of UPI, IMPS, AePS, travel cards etc, banks can sell many other products to non YES Bank customers as well, which brings us the valuable access to data, which wouldn't have been available otherwise. This data can be a rich source to cross and upsell many of my conventional banking products to the non YES Bank customers and also in the process create new business lines.

YES Bank is in a pre-PoC stage to generate new business innovation using AI. We are working on getting our algorithms in perfect shape. They will cater to customers, who



**The allocation depends on whether we are doing something independently or partnering with an organisation. It may not be very cost intensive for the bank, while working with a FinTech company**

were until now, in a transactional relationship with the bank. But we want to convert this into a relationship based banking, which rests on trust, so we don't want to leave any margin of error. The algorithms are being fine-tuned to convert them into a 'secret sauce' to make them the exact fit for the customers.

We are also exploring how we can sell more of our current products to our relationship based customers.

### How are you approaching the area of sourcing the right AI talent?

We started off by working with many FinTech companies, which also exposed the organisation internally to AI. Now, with our active engagement with University Relationship Management, wherein we pick up bright students from the top B-schools, a certain percentage

of talent comes from this channel. This is annual activity that we plan to conduct.

### How have you allocated the budget for AI?

YES Bank has a dedicated budget for AI. The allocation depends on whether we are doing something independently or partnering with an organisation. It may not be very cost intensive for the bank, while working with a FinTech company. The Capex in this case may be high, but whatever revenue we generate will be shared with them.

As far as RPA is concerned, which is more internal to the bank, the costs will depend on the platform used for developing the solution. If the investment fulfills any of the four objectives mentioned before, budget is not a constraint because there will be a specific ROI on it.



**AI POWERED  
HUMANOID  
ENABLES OVER 100  
SALES BOOKINGS  
AT A HOME EXPO  
FOR PURAVANKARA**

**The two humanoids** - Mitra and Mitri - were recently introduced at one of the flagship home exhibitions, Bengaluru Home Habba. A major advantage was seamless customer data accumulation in almost 10 times lesser time in comparison to any conventional method. In an interaction with EC, Ashish Puravankara, MD, Puravankara Projects provides more insights

#### **How has the introduction of Mitra and Mitri helped Puravankara?**

At Puravankara there has been a concerted effort to bring in technological know-how in every possible segment to give unparalleled customer service experience. The introduction of bots is a stepping stone towards bringing the integration of technology in the real estate space. It's for the first time that any realty player has done so. A part of our larger scheme of work involves integrating proptech in all spheres of our functions.

The two humanoids - Mitra and Mitri - which we recently introduced

at one of our flagship home exhibitions, Bengaluru Home Habba, were the first touch points for all visitors coming to the fest and handling visitor management system. The biggest advantage we had was



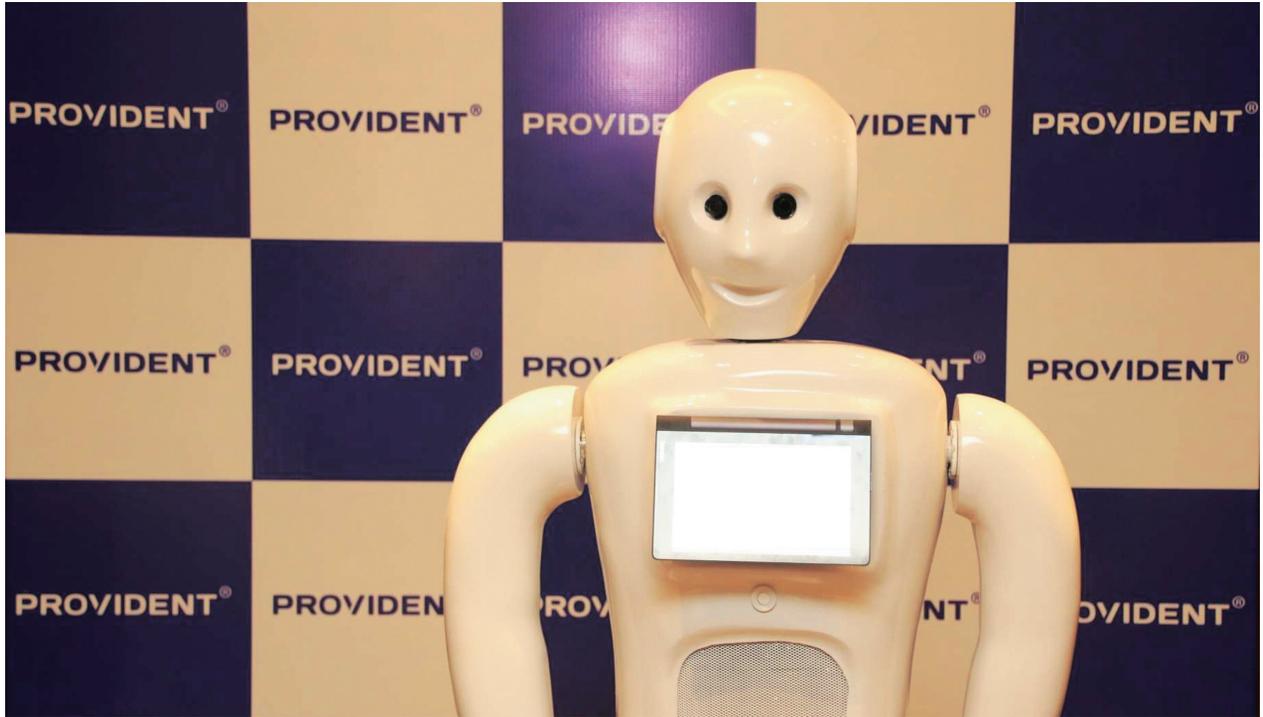
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seamless, accurate customer data accumulation in almost 10 times lesser time in comparison to any conventional method. In the regular format, the same thing would have taken close to 100 hours which is

now reduced to just approximately seven to eight hours.

**Please elaborate on how the bots will be the first touch points for customers and how they would help in handling visitor management system.**

The bots will be the first customer touchpoint for data acquiring, storing and analytics, using voice and touch panel enabled data capturing. When a customer interacts with the robotic interface, data is moved into the Customer Relation Management (CRM) system, Sales Force, and thereby creating direct, correct and more importantly, insightful



data. This in turn will translate into a more relevant and faster turnaround of customer enquiries and improved customer engagement with deeper customer insight.

The focus here was to give uni-

form experience to each of our visitors with accumulation of correct data along with real time integration to our central (customer) database. Introduction of bots has helped us in achieving this objective to a great extent. In our three-day

expo, we received close to 1,500 unique visitors (walk-ins) and closed more than 100 sales booking.

**With the help of AI, what is Puravankara able to do now, that wasn't possible before?**

Artificial intelligence has paved the way for scientific data accumulation and eliminating the chances of duplication because of human error. This has led to a greater degree of efficiency in our processes, both internally and externally. The



## **Artificial intelligence has paved the way for scientific data accumulation and eliminating the chances of duplication because of human error. This has led to a greater degree of efficiency in our processes, both internally and externally**

manner in which data is collected and stored has made it easier for us to identify leads which we believe have high potential for final sale conversion. Moreover, it is not about what we were not able to do earlier; the core objective lies in how efficiently we are doing it.

In addition to these, the robots' ability to interact with customers has garnered appreciation from all quarters and has made data procurement easier. The wait time for a customer to be assigned a sales executive was brought down to an average of two minutes compared to 10-15 minutes in the past. This has helped us in efficient customer management and has resulted in happy customers.

**Please share statistics, in terms of the CSAT score; how has it helped in faster turnaround of customer enquiries and improved customer engagement**

### **with deeper customer insight?**

This is an ongoing process. Ascertaining the exact impact of AI integration to our core business will take some time. Though our initial experience suggests the induction of AI has drastically brought down the time taken for data accumulation and real time integration to our central customer database. Essentially, it leaves us with faster, accurate and precise information about our customers. This will help us towards faster turnaround time to the queries of customers and with more facts and data at our disposal, we can now give them more customised service as per their requirements.

With regards to our CSAT scores, on an average it is somewhere between 75-85 per cent. We hope with the implementation of AI there will be a 5-10 point increase in our over-

all customer satisfaction index.

### **How has this initiative helped in business proficiency?**

With the introduction of the AI element through humanoid robots, we have been able to scale up the overall efficiency of our customer interfaces, and the standardisation of customer experience, improving the overall business proficiency.

### **How has the introduction of AI created a new-age home buying experience?**

Being early adopters of technology has always been at the forefront of Puravankara. Whether it is technology adoption at construction line or customer touch-point, we like to be at the cutting edge of all things – 'PropTech'. So AI integration in our business practices is the next judicious step, maintaining the evolving

needs of the home buyers.

Data accumulation and real time integration through AI is just the starting point, it still has immense potential which is yet to be explored. In this dynamic age, assimilation of AI, machine learning and big data is going to be the norm in the near future for realty business. Adoption of these technologies will ensure that home buyers have a great start to their journey of buying a home.

Moreover, it will help to address the issue pertaining to percolation of information to the end-user. With usage of AI and the likes, this will standardise dissemination of information to the customer, empowering them with more facts and data to make the final decision. Meanwhile, it will help the developers in widening their customer base and customise their services for each of our customers, based on their needs.



# AXIS BANK TO RAMP UP INVESTMENTS IN DIGITAL TECHNOLOGIES

**THE BANK INTENDS** to increase the digital budget by approximately 25 per cent in 2018-19; investments will continue in Axis Aha, the AI/ML based chatbot. Further with multiple channels, the focus this year will be on investing in an omni-channel kind of a platform.

**Praveen Bhatt**, Head - Digital Banking & Customer Experience, Axis Bank, shares more information



## **The next phase of digital banking will be, with the power of data, in guiding the customer in how can he use the best options available in the market for achieving his objectives**

**You were a COO and CFO at Axis AMC, and have helped set up the company in 2009. How has your experience helped in coming up with ideas in your current role?**

In IT, at times, the investments are upfront and secondly, one has to invest in something new, but beyond a point, it has to have an RoI, either in reducing costs or enhancing customer ease. There are a number of requests that flow from different businesses like cards, forex, MFs, insurance, etc, to add more features. Every feature addition has a cost of development. They have to be prioritised. We look at business cases, in terms of whether adding a proposed feature will reduce the costs or enhance customer ease, which should result in a reduction of consumer requests or complaints.

Consumers no longer stick to categories. They compare bank apps to any other non-banking app. We also

have to understand that mindlessly adding features fails to cut the ice with customers as they desire simplicity and in any case they only use selected features. Ultimately there is a cost of development and marketing for the concerned feature. My experience of a CFO at Axis AMC always keeps me cognisant of this aspect.

### **What are the latest updates in the area of technology at the bank?**

Speed and availability are two key ingredients for a successful digital operation. Thus we are constantly upgrading our hardware, so that systems are available 24x7. The failsafe mechanisms are in place for mission critical applications. Secondly, we are investing in tools that allow us to ascertain where customers are dropping off in various journeys within their app. These an-

alytical tools are coded to strip information on whether the issue is on the bank's side or in the customer's device. This helps in taking remedial action.

### **What is the digital strategy you plan to adopt at Axis Bank?**

Branch was the only channel of communication between the customer and the bank, during the initial days of banking. However, over the years, many more have been added. Bots are the latest communication tool and they empower the customer to do a lot more than what was possible with the initial communication channels. In the last few years, banks – with the emergence of the UI, UX, design thinking – have started investing in how they can ease the friction which exists in the customers using the banking services.

Digital is playing an important role in making this possible. For example, the most frequently used banking services include bill payments, balance check, fund transfers and at the most investments in MFs, etc. We focus on how we can ease them in the best possible way.

The next phase of digital banking will be, with the power of data, in guiding the customer in how can he use the best options available in the market for achieving his objectives. For instance, after checking the balance, the customer would ask how can he use the money in the best possible way and maybe the bank can advise to open an FD or to target more food related offers to those who are spending more on food.

### **Which initiatives are underway on the digital front?**

We are working hard to ensure that we are ready for the next wave of automation - from navigational to

conversational banking. Axis Aha, our AI and ML based chatbot, is a significant step in this direction as it allows customers to complete transactions and thereby significantly reduce the TAT to serve requests. Axis Aha solves queries faster compared to the past, when the customer was required to go for elevated searches on Google and then come to Axis Bank website. A lot of work is underway to solve the top five to six most frequently asked queries.

**Please discuss the ratio of transactions on digital channels and at the branches.**

Upto 60 per cent of the transactions are digital. Our aim is to ensure that all products and services can be brought or serviced through digital channels. But there are some products which would have a physical leg. For some products like personal loans, our aim is to source 50



per cent completely over a digital channel.

As per the RBI's latest figures for mobile banking, Axis Bank tops in terms of value and the number of transactions among private banks. On an average, the monthly value of transactions on the mobile app is 24,000 crore.

**How do you manage information security while working on digital banking initiatives?**

Before any release cycle, there are rounds of User Acceptance Testing (UAT), followed by testing with a closed user group (CUG) environ-

ment. Subsequently and finally, it goes through a Beta stage before going live. We look at security at two levels. The first is at the device level, followed by transaction level checks. While Axis Bank's app is downloaded by the customer, the number is matched with the list of the registered numbers. If the mobile number is not registered, the customer cannot be onboarded on the app.

Secondly, we consciously limit transactions on a rooted or jailbroken device and also inform the customer accordingly. Every release of ours goes through a thorough information security check. The VAPT

tests are done, and the vulnerabilities are identified and categorised into high, medium, low. The high and medium level vulnerabilities are not released. They are cleared only after getting required security layers are embedded with them. The low level security releases also go through the same process.

**Please discuss the composition of the digital team at Axis Bank.**

The channel team handles internet banking and mobile banking. The second team handles marketing and the third manages services like account opening, personal finance management, etc. The ASAP team has to work on fine-tuning their services, such that immediate delivery is possible. For instance, the account opening team has to make sure there are no drop-offs in opening of the account; the PFM team has to be expert in MFs, other investment options; and the bill



## **There are releases of new features that are planned every two months and it can be done without any delay, when there is a well rounded process understanding**

payment unit has to create expertise in its channel. These expertise in various services is ploughed back in internet and mobile banking services.

It's important to note, the service delivery cost (for sourcing an account) on the ASAP channel of services provided on IB and MB is 70 per cent cheaper than through the branch model.

A new vertical – Consumer Insights and Design Thinking – has been formed recently. Rapid prototyping is done with a number of features to test with consumers. This is to test, how it goes with the consumer, whether they are liking or rejecting the features – this saves costs. The wireframes are prepared and sent to the consumer and their response is registered. At times, features are redesigned because they were not easily identifiable on the screen. It's quickly re-arranged and released.

### **What will be the investment areas in 2018-19?**

We will continue to invest in Axis Aha, as we will consciously move towards conversational banking. Further with multitudinous channels, the focus this year will be on investing in an omni-channel kind of a platform that will help customers get a single view of customer interactions across our channels. The digital budget will be increased by approximately 25 per cent in 2018-19.

### **What are your views on including digital in every step of customer journey?**

My focus has always been on using the power of digital to lessen the pain points faced by the customer, while doing everyday banking. The norm has been to use digital to automate processes, reduce the manual burden and engage the employees in more productive work; however, there are not many customer facing

initiatives taken.

The importance of consumer connect that I had established over these years also helped me in understanding the customer journey for various banking products and services. This made me realise that digitisation at times is not necessary for every step of consumer interaction. Digitisation should be done to suit the consumer and not the bank. At times, when he requires to speak to a human then, we have to appreciate it. For example, the home loan journey is a very long one, which begins months even before the customer buys a home loan. He starts by checking various properties on various aggregator sites. Our presence there is important because we have to acquire the customer right when he has begun hunting for the right house.

We have partnered with Magiebricks.com. The Axis Bank app has the properties listed against

which, the Axis Bank home loan is available. This assures the customer that the bank has done some due diligence for the property. After he identifies the property, the need is for a human interaction to check whether his financial profile qualifies for buying the property. This is where the customer needs an emotional assurance, best offered by a human. Next, he wants to track the loan disbursal to him finally, which can be done digitally. As I have also handled operations and finance, the understanding of processes is deeper. It helps in co-ordination with other departments. The digital banking piece works in slots. Not the entire feature is released in one go. They might also be released in short capsules. There are releases of new features that are planned every two months and it can be done without any delay, when there is a well rounded process understanding.

# 5 WAYS IN WHICH ARTIFICIAL INTELLIGENCE AND BUSINESS INTELLIGENCE CAN CHANGE THE INDIAN MARKET

AI will have a profound impact on the society and in shaping it. It will especially affect the emerging markets where the main workforce is non-intellectual labour. By **Nitin Gupta**, Co-Founder, CEO & CTO, NeuroTags

**A**I is a collection of technology which helps us make sense of data and predict the outcome of new events based on learning from the historical data about the similar events in the past. AI is more or less similar to human intelligence, i.e., classifying or predicting the next outcome based on current and historical events. AI, in

general, helps in automating and optimizing the tasks which are done by humans. AI will have a profound impact on the society and in shaping it. It will especially affect the emerging markets where the main workforce is non-intellectual labour. As it makes the robots more intelligent in doing the repetitive laborious tasks, the human jobs in

manufacturing will diminish. The world market may not remain dependent on China for manufacturing, in-fact the US would be at advantage because of the cheaper power as it would be more economical to run the automated robots-run production lines where energy is cheap.

► **Repetitive Jobs would diminish** – In India, a lot of jobs in manufacturing and IT maintenance would diminish. However, for at least next 5 to 10 years the opportunity lies in training the workforce to create and tune the AI technology so that it can be employed in helping the companies across the globe adopting AI. There are close to 3.5 lakh jobs open

in the AI domain across the globe, and the good thing is most of those jobs can be carried out remotely. Another advantage is that India has created its name in IT services so gaining the projects in AI services will not be an uphill task.

► **Manufacturing would be automated and local** – Secondly, I feel most of the manufacturing for products consumed in India would move back to India from China in the next 20 years which would make the Indian economy more self-reliant. Although the jobs would mainly be carried out by the robots on the assembly line, there would be a lot more acceleration in local innovation, quality and customized offering for consumers.

► **Advancements in healthcare and medicines** – Thirdly, if adopted early and properly the AI

would help improve the service sectors, such as healthcare, in giving more advanced, caring and personalized services, which would help India further enhance the quality of its offering in this domain, and attract good business from developed countries for being economical.

The Pharmaceutical companies too if start to adopt the AI may have a lot of advantage within the next few years because of the easy access to the local and economical talent pool in AI and they would be able to compete with the top companies in the US in innovating the prescription and other life-saving drugs.

► **Revolution in education** – Traditional educational institutes may see a decline in the number of students, as innovative technologies will bring the education online and make it more personalized with the help of AI. However, the innovative



**The world market may not remain dependent on China for manufacturing, in-fact the US would be at advantage because of the cheaper power as it would be more economical to run the automated robots-run production lines where energy is cheap**

**Nitin Gupta,  
Co-Founder, CEO &  
CTO, NeuroTags**

institutes and centres for entertainment, philosophy, and arts may see the growth.

► **Efficiency in Business** – Lastly, in general, in business, the mid-management layer would also shrink due to the introduction of more AI based personalized communication, coordination and management tools. However, the employees will become more efficient, and their output would increase and so would their pay. The executives will become more efficient and informed in decision making with the help of AI-based Business Intelligence tools. The competition in almost all the sectors would increase as the cost to bring products to the market, and the cost of personalized marketing would become cheaper due to AI enabled technology. Which would, in general, be very good for Indian consumers and the overall market.

# AI TO IMPROVE EMPLOYEE AND CUSTOMER CONVENIENCE AT INDIAFIRST LIFE INSURANCE

**IRIS will be** used for customer queries and requests. The bots can also be used by both the distributors, and the sales force for solving service and product requests from customers. EC's **Abhishek Raval** speaks with **Mohit Rochlani**, Director - Operations and IT IndiaFirst Life Insurance

**I**ndiaFirst Life Insurance recently adopted a conversational AI platform to deploy an intelligent virtual assistant- IRIS, to streamline its sales operations and further its growth ambitions.

Announcing the launch of IRIS,

RM Vishakha, MD & CEO, IndiaFirst Life Insurance said, " IRIS, (IndiaFirst responds), a virtual assistant that is available 24\*7 to our customers, distributors and employees is our viable adoption of technology to provide our stakeholders with a

superior and consistent performance. We are growing at 137% Y-o-Y in retail new business APE and we innovate to provide a robust customer service process for our growing base of customers, in line with our philosophy of 'customer first'."

IndiaFirst Life Insurance has access to a network of 8000+ branches and more than 50 million customers across India.

## **IRIS – Application areas**

The virtual assistant IRIS will

strengthen the self-service options not just for customers but also for the sales team.

IRIS will be used for customer queries and requests. The bots can also be used by both the distributors, and the sales force for solving service and product requests from customers.

For the sales agent, the bot has been helpful for finding the product related details, when the potential customer asks. It's also serving the sales agent in answering the current customers, with respect to their policy related queries.

The company is also working on other bots which will serve operations as a whole, including financial claims, etc. The bot also processes the quote for the customer. The backend calculation engine provides the right number in terms of the quote for the premium to be paid. If not for the bot, the customer usually interacts with the website, which has a premium calculator. "The benefit with a bot performing this function is, customers might feel it's more comfortable to get the work done in a conversational way by using the bot rather than typing it out on the website," says Mohit Rochlani Director - Operations and IT, IndiaFirst Life Insurance.

"Today, customers are looking for



instant solutions and IndiaFirst Life Chatbot enables to ask any question and get fast and real time response, through live chat experience. The real-time expense management adds a layer of improved functionality and simplifies the day-to-day functioning of our sales force. This will help them focus on what's most important to us as team, which is offering the customer the best product and service", added Rochlani.

### Reason for using AI

The strategy for using chatbots was to use AI across processes to enhance employee productivity and improve customer service and experience. The idea was also to have bots as one more medium for the

customers, distributors and sales force to interact with. With IVR, call and other facilities, chat is a the new generation interaction option that should be made available to the customers. It's also becoming a preferred medium of communication. "The overall vision is also to make the bot do whatever the call centre can provide," says Rochlani.

The conversational AI platform has been bought from Avaamo. The internal team at IndiaFirst Life and IT partner E&Y, teamed up in the evaluation process to explore 5-6 companies before choosing Avaamo's AI platform. The evaluation process took about 2-3 weeks.

IndiaFirst Life has a change management team, which explores with

the departments on the use cases for various digital tools be it chatbots, RPA etc. This team strength is 12-13. The chatbot platform is being used since the last one year.

### Roadmap

IndiaFirst Life Insurance is looking forward to use AI in two areas. Apart from chatbots, sales management is another area, where AI can be potentially used. Based on the data churned out by the AI engine, it can provide the contextual intelligence to the sales agent on what and how to pitch to the customers. This will improve employee productivity and customer service efficiency. "This is a cloud based solution that we are exploring. The lead management part is being looked at, currently. The next phase will be about testing the AI based backend engine," says Rochlani. The challenge this solution will help overcome is, at times, there are inconsistent sales management processes across the country. The chatbot and AI based solution can enable consistent processes, country wide. Secondly, there are sales agents, who have developed best practices, which can be replicated. The AI approach can empower sharing these practices with other agents by giving alerts.



# DHFL PLANS TO MAKE AI AN UNDERLYING CAPABILITY ACROSS ALL BUSINESS PROCESSES

AI in housing finance has automated processes and reduced the cost of serving customers. While AI has reduced the cost of financial services it has also made financing convenient

**A**t the heart of its vision to build a nation of happy home owners, is DHFL's strong technological edge, which the company is continuously sharpening through pioneering cutting-edge initiatives. DHFL believes that a seamless customer experience, which remains at the forefront of its growth strategy, can only be enabled through technological innovations that can transform the way it services customers who seek solutions towards fulfilling their homeownership dreams.

“Led by this belief, we deploy technology not only to boost our operational efficiencies, but also to create an environment in which we can nurture and realise our

mission of ‘Giving India a Home’ more expeditiously, efficaciously and seamlessly. Pre-empting the unique needs of our customers, addressing the industry challenges, delivering path-breaking solutions, and ensuring total data safety are the drivers of our organisation-wide technological empowerment agenda. From infrastructure development to across-the-board digitisation, and augmentation of our data safety framework, we have rolled out a series of initiatives aimed at ensuring continuity of services and better application response at critical locations for our customers,” says Jyothirlatha B, Chief Technology Officer, DHFL.

### **Creating value through customised solutions**

In line with its strategic charter of enabling a smooth customer experience, DHFL has rolled out several ingenious initiatives aimed at creating an ecosystem that is crafted to offer customised products and solutions in the most seamless of ways. Utilisation of effective solutions is central to this approach, which seeks to enable quicker automated credit decisioning, straight-through processing at higher efficiencies and lower processing times.

“Our digitisation focus is also aligned with our philosophy of using the latest technologies to provide 24×7 on-the-go service for our

customers, who can digitally connect with us on anywhere, anytime basis with the help of their mobile phones, laptops, etc, to access our portfolio and procure their personal discussion reports from our credit team,” she says.

### **Tech at the core**

With security critical to its business ethos, DHFL remains focused on ensuring the safety of customers' data. She informs, “Our technological focus is geared towards improving customer centricity while creating a technology-friendly environment for our employees. Faster decision making through automation and analytics,



helps amplify our operational productivity and efficiencies, helping in building a strong foundation to enhance value for all our stakeholders. We strongly believe in disrupting technology to drive new technological interventions across our business value chain. We re-

main committed to using technology as a major engine of our growth strategy in the evolving industry landscape that is strongly rooted on digitisation and technological revolution.”

DHFL is expanding its technology landscape through advanced

technology solutions as part of its digital transformation programme which comprises of technology enablers for business growth and operational efficiency along with a lot of emphasis on IT security.

The journey towards digital

transformation is to enhance customer and employee experience by strengthening enterprise architecture and expanding the digital footprint to meet evolving business needs. DHFL is also exploring technology innovations and intelligent



**Our chatbots use natural language processing (NLP) capabilities. With added AI and machine learning (ML) capabilities, these bots will evolve over a period of time**

**Jyothiratha B,  
Chief Technology Officer, DHFL**

analytics to draw meaningful insights to stay ahead of the curve.

### **Role of technology in digital transformation**

DHFL has a comprehensive digital strategy to support business growth and improve customer servicing. With API driven technology architecture, the company's technology landscape is evolving to be future compatible. DHFL is expanding its digital footprint in multiple channels by enhancing mobility and web capabilities to service internal as well as external customers.

Business processes are being digitalised with complete digitisation of documents and rule based workflows. With focused enterprise mobility strategy, DHFL has launched enterprise mobility solutions to increase the efficiency and productivity of its operations and

technical team for better employee experience.

“Our customer mobile app will be launched soon for better customer experience offering self service capabilities. Data analytics being one of the focus areas, we have come up with predictive data models which are being used in multiple areas of loan processing. These models are being further enhanced with AI. At DHFL, we have a hybrid cloud strategy. We have moved some of our applications already to cloud. We would continue adopting more cloud based services complying to the regulatory norms,” she comments.

### **Creating a digital eco-system**

With digitisation emerging as a major pivot around which business models are now being structured,

DHFL has aggressively embarked on a digital roadmap for its strategic growth. DHFL has digitised its internal processes, such as employee on-boarding, meetings and several applications, while its 'Physical' integrated ecosystem enables seamless interaction of customers on physical and digital platforms. “Our new website is helping capture leads, and we are also exploring advanced technological solutions in the areas of data analytics, mobility, cloud as well as futuristic technologies like Artificial Intelligence (AI), predictive analytics, bot-based customer services and mobile apps,” says Jyothiratha.

### **AI focus**

AI in housing finance has automated processes and drastically re-

duced the cost of serving customers. While AI, on one hand, reduced the cost of financial services, on the other, it has made financing extremely convenient to avail.

“We are also working on chatbots for our employees. Our chatbots use natural language processing (NLP) capabilities. With added AI and machine learning (ML) capabilities, these bots will evolve over a period of time. We are using certain FinTech solutions that are powered with OCR, AI and data analytics techniques for securing business insights. Our data centre management is also powered with AI based monitoring. We plan to make AI an underlying capability across all business processes. In future, AI and cognitive computing will be combined with data analytics to get key insights from the data to aid decision making,” she concludes.



# PICKING THE RIGHT BOT PLATFORM – WHERE TO START?

**AI-powered chatbots** can automate the usually mundane and repetitive tasks currently handled by humans. By **Purushottam Darshankar**, Principal Architect, Persistent Systems

**A**re you struggling with where to get started selecting the right chatbots (or conversational agents or smart personal assistants) for your business?

It's recognized as one of the most popular AI technologies and customer service automation is usually the most talked about application.

AI-powered chatbots can automate the usually mundane and repetitive tasks currently handled by humans- order placing, billing and payments, enquiry of different products and services. They can increase productivity, free humans up for more valuable work and above all, provide an enhanced customer service experience.

But with plenty of chatbot platforms to choose from, the task of selecting the right bot platform has be-

come trickier than ever. Here are a few key areas to consider:

- Natural language understanding, processing and learning
- Ease of dialog development, deployment and integration
- Scalable architecture with administrative portal
- Security and audit
- Flexible pricing models

Let's take a closer look at what each of these areas needs to offer.

### **#1 Natural Language understanding, processing and learning**

An effective bot is one that understands the user's intent and the context of the conversation throughout the interaction. While this is immediately apparent to a human being,

it is difficult for a machine to comprehend.

It takes years for humans to learn a language. To imitate human behavior and response is a daunting task for bots. It is difficult for it to replicate the irrational aspects of human behavior, which is why bots are developed to perform only specific and usually repetitive tasks.

Platforms with advanced AI and NLP (Natural Language Processing) capabilities provide the bot with an ability to break down complex language and execute the complex tasks. It involves modelling the entities, intents and actions of the user within the given context.

Another important criteria is the ability of chatbots to learn automatically with each conversation, reducing the burden of including humans for training purpose. The newer

chatbots employ deep learning to analyze human input and combine learning, understanding and training to generate a natural response.

### **#2 Ease of dialog development, deployment and integration capabilities**

Designing a conversation between a user and a bot is one of the most challenging exercises. The platform should provide a bot builder IDE (integrated development environment) tool that should ideally be able to help an organization create complex user-to-bot interactions without the need to write code.

By providing suitable API support, the platform should also allow the organization to host multiple channels. The most notable ones are Facebook, Slack, Skype for Business



## The presence of so many chatbot platforms has, without doubt, made the task of evaluating an enterprise chatbot platform challenging– but with due care and proper research, you can zero in on the platform that would be best suited for your purposes

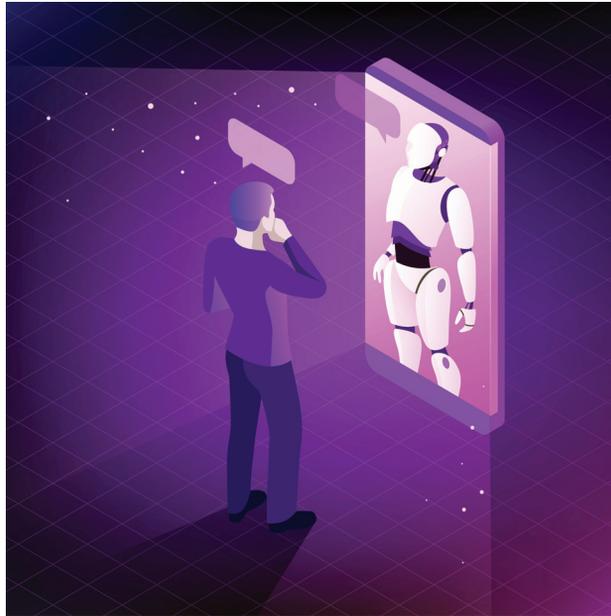
and Telegram. A few other categories to consider include speech recognition, language translation and multi-device support.

To be able to satisfy end users and carry out meaningful interactions, a bot should be easily integrated with backend transaction services, analytics data and other knowledge resource databases.

### #3 Scalable architecture with administration portal

A big factor behind the growing adoption rate of AI chatbots is their ‘always on’ nature. Once deployed, however, the volume of interactions may not remain the same at all times. The platform should provide dynamic scaling properties that allow it to handle fluctuating demand volumes with ease and also keep the infrastructure costs low.

It is also important to keep a check on behavioral performance as

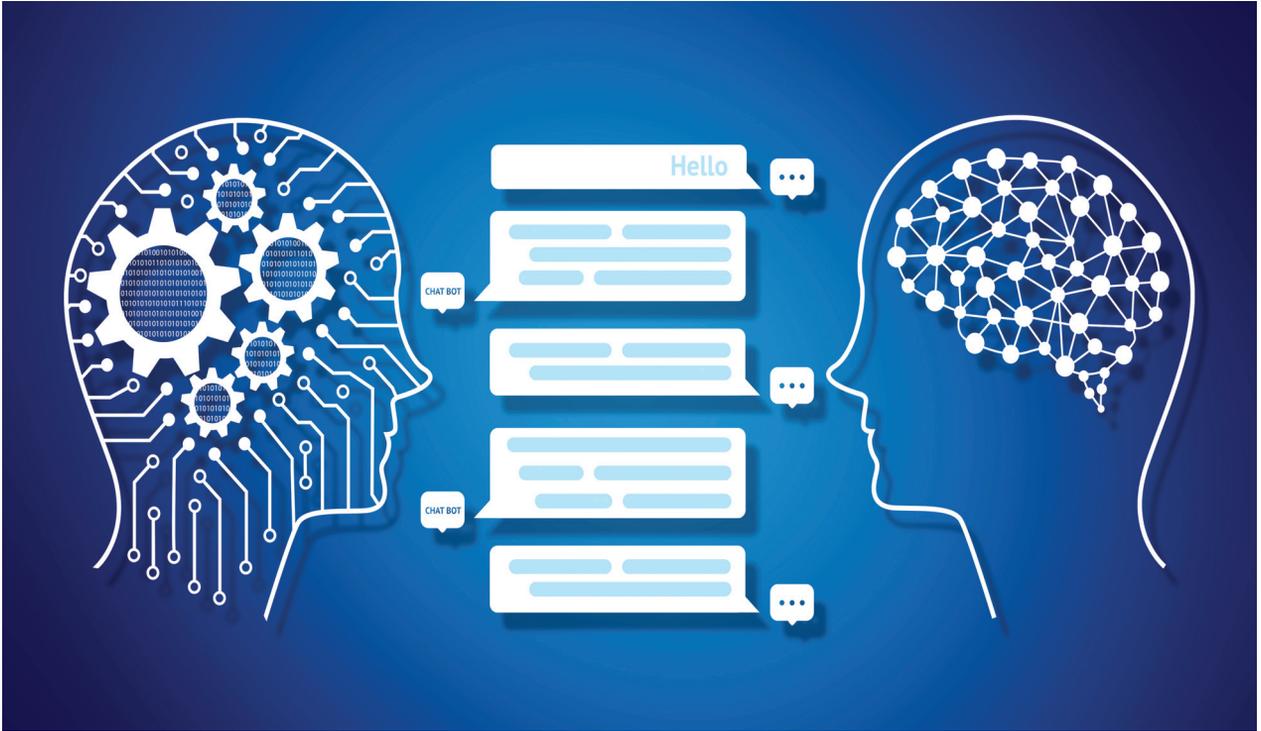


a bot continues to refine its natural language understanding through regular training. A good administrative portal will provide administrators with a convenient way to manage and train the bot and manage user access.

### #4 Security and audit

As people often share personal, sensitive and confidential data through bot interactions, there must be security measures to prevent unauthorized access to such information. The platform should allow organizations the flexibility to build their bot either on-premise or in the cloud. Some enterprises may prefer an on-premise delivery model as it allows them to have full control over the chatbot experience and securely manage all chatbot conversations within their enterprise environment.

The underlying platform should let administrators monitor the activ-



ities happening on a chatbot, as well as have the option of logging and manage auditing.

#### #5 Flexible pricing models

Finally, we know what is on every decision maker's mind when decid-

ing a new chatbot platform – pricing. Most of the bot platforms today provide a free-to-use basic plan, and the charges are based only on the actual usage of the bot. They use a combination of fixed, pay-as-you-go or outcome-based pay-per-perform-

ance models.

Based on budget, business requirements from the bot, and shortlisted features of the platforms – you can make an informed decision.

The presence of so many

chatbot platforms has, without doubt, made the task of evaluating an enterprise chatbot platform challenging– but with due care and proper research, you can zero in on the platform that would be best suited for your purposes.

# IMPACT OF ARTIFICIAL INTELLIGENCE: DIFFERENTIATING BETWEEN MYTH AND REALITY

It is time for Indian enterprises to be more amiable towards emerging technologies, especially AI, to improve business profitability and strengthen core operations, says **Gaurav Vasu**, Founder, Uneath PrivCo

**W**hile over the years there have been numerous developments in the realm of Artificial Intelligence (AI) in India — both academically-driven, as well as percolations in business models and consumer demands; in recent past,

commercialization of AI and its use in core business processes has somewhat picked up.

Yet, our Corporate Profit to GDP Ratio is at an all-time low of 2.9 per cent. The figure is more striking Corporate Profits when compared

with other global peers, including the US, where despite lower GDP growth vis-à-vis India, the Corporate Profit to GDP Ratio is between 9 – 10 per cent.

This is a clear indicator that it is time for Indian enterprises to be

more amiable towards emerging technologies, especially AI, to improve business profitability and strengthen core operations.

According to data computed by a cognitive business and finance intelligence platform, Uneath

PrivCo, there are approximately 450 Artificial Intelligence (AI)-based start-ups and businesses currently based in India, which can be leveraged to acquire digital automation products to help drive efficiencies and experiences for B2B and B2C consumers in India. While 95 per cent of these start-ups have enterprise and industrial solutions, the remaining 5 per cent focus on B2C or consumer solutions. It has also been estimated that such AI-led start-ups pan India, will be generating ~\$180 to \$200 million revenue annually. This data clearly reveals the huge scope of AI and AI-led technologies, and the need for these start-ups to make a stronger and more operational efficiency & bottom line impact driven business pitch for large technology and non-IT enterprises.

However, what is interesting to note is that while 75 per cent of these AI firms were started between 2014 to 2018; Open Software Technologies and Absolute e-Data leveraged Natural Language Processing (NLP) for automating Business Intelligence/ Visualization way back in 1999 and 2000. This implies that the AI genie has been long out of its lamp, and the time has come to address and measure its impact on businesses and hu-



manity, in general.

While many small and large enterprises – across industries and sectors like banking, automobile & manufacturing, energy, textiles, natural resources, retails, consumer goods and so on – are betting big on Artificial Intelligence; most Indian enterprises are yet to make deep inroads in utilizing the true potential of technologies as big as AI. For instance, the table below encapsulates top enterprises based on Market Capitalization (excluding IT Sector) that are already leveraging AI capabilities in their business or investing heavily in AI. Yet, the trend remains that majority of these enterprises are leveraging AI for ei-

ther enhancing consumer experience through chatbots, or for increasing operational efficiency.

#### AI use cases 1

While it is encouraging to see the willingness of these enterprises to test the AI water, there is still immense potential of AI that remains untouched.

This becomes more apparent when the list of world's top 20 technology giants (by market value) is analyzed. As the table below indicates, there is not even one Indian technology company that features in this list. Yet, one thing which is common amongst all these enterprises is that they are all early adopters and investors in AI technology.

#### Top companies global

Earlier this month, Reliance Jio was in news for hiring a team of professionals — led by Akash Ambani — to work on AI and its multiple use cases. This news came at the backdrop of the announcement made by Reliance Industries Chairman Mukesh Ambani at the beginning of the year, to invest INR 60,000 crore and “make Maharashtra the birthplace and cradle of the Fourth Industrial Revolution in India”.

Enterprises like Reliance, despite being non-technology focused companies, are making a strong case by investing and hiring skilled professionals in the domain of emerging technologies like AI. In fact, it has been estimated that the AI-led start-ups and established players currently employ 170,000 AI professionals jointly – leading to creation of 4,500 to 5,000 AI jobs each year. Further, Unearth PrivCo has estimated that the government of India, out of the ~\$8.5 Billion investment in IT, is likely to invest \$800 to \$900 million in AI over the next 5 years.

Given this, \$5 Billion is estimated to be the opportunity size of AI market in India approximately, with both listed and non-listed enterprises. This implies that India is right at the cusp of an AI revolution, and it is time for Indian enterprises to leverage AI in their core businesses. In the coming few years, AI will exist as a layer atop every business process — from customer service and marketing to product development/ R&D and sales — across every industry. The early adopters of this technology will not just benefit from increased business profitability, but will also contribute in shaping the future.

# HOW HDFC BANK IS BANKING UPON AI ACROSS THE ORGANISATION

**USE OF AI** in customer services has become mainstream, especially in the banking sector. HDFC Bank has been exploring an array of domains where AI can be deployed

By **Mohit Rathod**

**A**he application of Artificial Intelligence (AI) in the banking industry is multi-functional in nature. There are numerous use cases, encapsulating the deployment of AI as a technology. For instance, customer service is a big area where AI has been deployed. Similar

is the story of HDFC Bank, which had launched its AI based chatbot – OnChat – on Facebook Messenger in 2016. Within one year of its launch, the chatbot, created in partnership with Niki.ai, had marked 160 per cent month-on-month growth in transactions. Until April this year, more than

300,000 consumers have interacted with HFDC Bank OnChat and the value of transactions is close to ₹ 2.5 crore.

Another example of use of AI in conversational banking is HDFC Bank's virtual chatbot 'Eva' on Amazon Alexa and Google Assistant. Eva

has answered more than five million queries from around a million customers with more than 85 per cent accuracy. Eva holds more than 20,000 conversations everyday with customers from across the world.

“We are attempting a lot of use cases across various functions.



**We don't need to establish too many use cases; we have a clear strategic intent, and we have identified the areas where we want to apply AI. We just need to test a few things in every domain where we intend to use AI**

**Nitin Chugh,  
Country Head – Digital Banking, HDFC Bank**

While OnChat is a well known example, we are also piloting various other use cases. In the HR space, we have used AI for initial screening of candidates in the hiring process. We have a roadmap which captures what we want to achieve across multiple functions within the bank. In order to establish the capabilities, we are going through Proof Concepts (PoCs),” says Nitin Chugh, Country Head – Digital Banking, HDFC Bank.

### **Multiple use cases**

In addition, HDFC Bank has also made several deployments in risk management, credit scoring, employee engagement and onboarding, portfolio management. Besides, there are also good applications of AI from marketing standpoint. For example, AI can help the bank optimise and interpret campaigns in an optimised manner.



Commenting on whether there's a need to present a business case to the top management for investing more in AI, Chugh informs, “At HDFC Bank, we use a combination of top-down approach, which is led more by strategic intent. Our discussions are

not confined to RoI; however, it is an important consideration among other factors.”

In the area of security, HDFC Bank has recently completed a pilot for AI based Cyber Security Operations Centre (CSOC). The log data

from CSOC is put for processing on the AI solution having big data capabilities and it was done for about eight months on a cloud platform. The AI solution will help in monitoring insider threats.

### **Skillsets**

The bank charted out and has embarked on an articulated path for its AI journey. In the initial stage, the bank's focus is on helping its workforce with AI assistants. This is largely information-led, but it could be related to workflow as well. For example, in the case of hiring, AI helps the first-level interviewer in screening of candidates. In the second stage, HDFC Bank will get to a point where some of the workflow will get signed to AI applications. Whereas, in the last stage, some workflow will operate autonomously – this will also use machine learning



in a big way.

Chugh shares, “We are going to move in a gradual manner, because the entire organisation has to be prepared. In terms of skills, we are already exposing our workforce to these things. We are encouraging people to learn and are also organising a series of sessions across the bank. The familiarisation efforts are more directed towards people who will need to specifically use AI in the future. For example, the back-office team, credit team, products and portfolio team.”

To a question on expanding its data centre footprint like e-commerce giants, which have embarked on a similar journey of AI implementation, Chugh says, “We are unlikely to hire more data centres in the future, because we may not be able to convert everything into actions. Undoubtedly, we will be producing insights and bringing out ex-

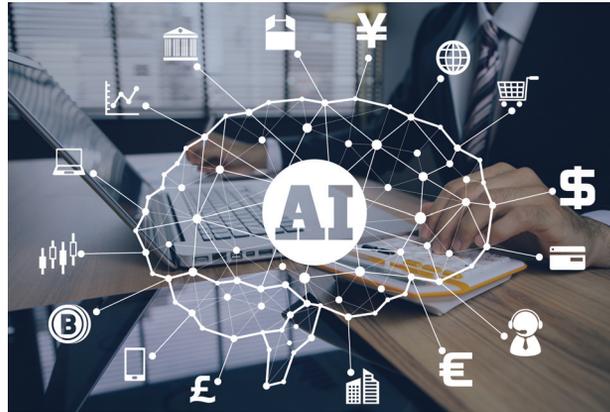


**The bank is also passing its learnings to other companies within the HDFC Group. A good example of this is OnChat. HDFC Bank started it with commerce transactions, and has recently added the stock trading option as well, thereby complementing HDFC Securities. It has built another interface for the general insurance and life insurance products**

periential knowledge, which will be supplemented by algorithms. On the analytics side, we are already a heavy user of algorithms.”

The key factor is about how the technology is applied, instead of how many people are needed. For instance, one may have a lot of data centres for churning out insights; however, one should also possess the skillsets to turn insights into actions. “We may not need too many data centres, because as machine learning settles down, there will not be a need for too many people for data mining;” he adds.

The bank feels that AI will not replace any function entirely. Citing example of customer service, Chugh reaffirms it won't be completely transformed and replaced by AI, because the function is customer-dependent. Likewise in terms of sales, several tasks can be done with AI; however, AI won't take over the dis-



tribution function completely.

“None of the functions will get completely replaced by AI, but will definitely get transformed. In the future, they will also get transformed with real-time accuracy. To accom-

plish this, people will have to be assisted by AI,” he says.

Already having a Centre of Digital Excellence (CoDE), at present HDFC Bank is keen on establishing the domain of digital excellence, which in-

volves a combination of five-six different practices such as social media related learning, research based knowledge, ability to track real time insights, etc. The bank has 25-40 use cases in the PoC stage, which marks a growth of 50 per cent from last year. “We don't need to establish too many use cases; we have a clear strategic intent, and we have identified the areas where we want to apply AI. We just need to test a few things in every domain where we intend to use AI.

Furthermore, the bank is also passing its learnings to other companies within the HDFC Group. A good example of this is OnChat. HDFC Bank started it with commerce transactions, and has recently added the stock trading option as well, thereby complementing HDFC Securities. It has built another interface for the general insurance and life insurance products.

# ARTIFICIAL INTELLIGENCE (AI) TO DRIVE THE EVOLUTION OF CRM

In the field of CRM, there are two vital areas where AI will significantly impact the evolution of Business Processes. Firstly, with the increase in vast amounts of data that is currently applied in CRM, processes will require AI for effective sorting and understanding. Then, the big move to cloud CRM systems will further enable faster and larger amount of data to be processed, again counting on AI for a significant contribution

**A**rtificial Intelligence (AI) is touted to be the next big step in functional technology. According to research by Gartner, 20% of business content will be created by machines by 2018, and 6 billion connected devices will require the ability to connect and

share data with other devices. In the field of CRM, there are two vital areas where AI will significantly impact the evolution of Business Processes. Firstly, with the increase in vast amounts of data that is currently applied in CRM, processes will require AI for effective sorting

and understanding. Then, the big move to cloud CRM systems will further enable faster and larger amount of data to be processed, again counting on AI for a significant contribution.

The key trends set to drive the AI-powered CRM usage include:

## **Multi-Channel CRM**

With the rise in multiple channels of customer touch points, from mobile phones, social media and digital platforms, CRM has also evolved to cater the consumer demands on these mediums. The rise of integrated smart devices has also

resulted in an always active consumer, who is interacting with the brand on the go. As a result, there has been a rise in CRM solutions that are omnipresent across these channels. Artificial Intelligence is set to drive smart integration of these Omni-channel customer relationship models, capturing data and driving intelligent and real-time analysis to create accurate and real-time responses.

### **Integrated Business Processes**

Successful modern business processes are no longer limited to segregated departments but involve a meticulous integration of multiple departments functioning in a synchronicity. Further, with the rise of multi-national businesses which require focused and targeted efforts for individual markets simultaneously, the need for accurate and intelligent data capture and analysis has become vital. Apart from CRM, AI has already started driving several key processes, namely manufacturing, research and also driving finance and logistics. An AI-powered CRM, in this scenario, can be a boon that can drive the rest of the business functions in a consolidated manner, giving accurate direction for predictive business growth.



### **Big Data**

The sudden and empirical rise in the amount of data that can be gathered from multiple sources has led to the 'Big Data' phenomenon – the collation of large sets of data pertaining to consumer behaviour and preferences. The factors discussed above, namely multi-channel consumer touch points, smart devices, social media and mobile CRM as well as traditional consumer relations across vast geographical, cultural and demographic populations, all contribute to a vast opportunity in data analysis and business growth. AI-powered CRM would be the sole go-to solution to derive vital insights into consumer psyche, deciphering patterns, trends, behaviour associations and interactions that can help create accurate consumer connect

and business growth possibilities.

### **Cloud CRM**

The shift from a single location based CRM to a larger cloud-based CRM has further given a push to Big Data and also the ease and affordability of CRM, making it reliable, the affordable and sustainable solution even for SMB and start-ups. Further, the increased comfort in the security of cloud-based CRM has resulted in the recent dramatic rise of Cloud services. Factors like the increase in the use of smart devices by field staff and executives, the value additions that are possible to enhance services on a cloud platforms Vs. a local server and the efficient and wide-scale infrastructure upgrade of cloud servers that can benefit a

larger segment of users, have all led AI becoming a more natural set of CRM evolution.

As CRM moves from manual to assisted to AI Powered, business processes are increasingly waking up to the power of integrated functions and processes. Over the last decade, valuation of Intelligent and data-driven systems has largely gained popularity. AI is further set to accelerate this trend and help maximise profits, customer loyalty and brand recall.

### **Conclusion**

In the current era of massive data explosion and the rise of smarter technology on a regular basis, the 'internet of things' and the rise of the 'round the clock consumer', businesses and brands today are evolving every day, trying to not just stay relevant but to lead the markets. As a result, the rise of 'round the clock customer service' that is effective and can efficiently transform customer experience is becoming vital. These are exciting times as the modern business and consumer experience is driven by the age of data, and artificial intelligence technologies are offering the perfect solutions to match these transitional changes.

# BAJAJ ALLIANZ HIRES TAL.PORT, AN AI ENABLED TALENT ACQUISITION TOOL

The tool allows video interviews to capture candidate's aptitude and behavioural aspects along with the essential technical skills

**B**ajaj Allianz has adopted Eve – which represents an automated talent acquisition portal, Tal.Port. An end-to-end automated talent acquisition platform, Tal.Port introduces robotic video interviews for job seekers, which will capture a candidate's aptitude and behav-

ioral aspects along with the essential technical skills. With this HR move, candidates will just have to apply on Tal.Port for the relevant position and irrespective of their current location, they can appear for video interviews through their smartphones.

The automated video interviewing solution bought from the company, Talview, is used to hire from the untapped talent from multiple cities across the country. The cloud-based solution can be accessed by candidates from any smartphone device and is fully functional even

on low speed internet. To be more competitive and agile in today's dynamic marketplace, Bajaj Allianz needed to tap talent from multiple locations. This otherwise came with huge investments in time and resources from both the recruiter and candidate. Deploying automated



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

video interviewing has saved the company time and resources while vastly improving the recruitment process.

Candidates are now remotely participating in interviews via smartphones at their own convenient time and place, and hiring managers have the flexibility to assess and evaluate candidates without the need to travel to different locations. The company is also using Talview Behavioral Insights (TBI) to build behavioural profiles of candidates. These profiles are enabling hiring managers to find the right person for the job, backed by data-driven insights.

The plan is to use this AI enabled solution for every department in the company. The tool has been used on a pilot basis and interviews of around 350 candidates have been conducted using the solution, out of which 150 are hired.



“This is a fantastic solution because it brings the hiring manager and the candidates together and keeps the HR out of the loop,” says Sourabh Chatterjee, President & Head – Technology, Direct Sales & Travel, Bajaj Allianz General Insurance. Usually, in an offline process, the HR is the connecting point between the hiring function and the candidate. In this case, the HR and the technology team at Bajaj Allianz have co-ordinated to bring this solution together. The HR team does the requirement gathering from the hiring manager in terms of the competencies to be evaluated. The competencies are then placed in a matrix, which are then matched through APIs with the profiles on jobs and professional networking sites like Naukri.com, Monster.com, LinkedIn etc. HR consultants are also connected to this solution.



The candidates which are the best fit in accordance with the competencies matrix are shortlisted. They are asked to download an app using which they can give a video interview at their convenient time and answer the standard questions in

accordance with the function they are interviewed for. The video interview is then uploaded on the tool. It's important to note, the interviewer does not participate in the video interview, because the template questions, which are asked in

every interview for that respective function don't involve the requirement of the interviewer to be physically present.

“Conventionally, this process used to take a long time. The HR is asked to fix up a mutually conven-

ient time of the hiring manager and the candidate. It can be over a phone or a personal meeting. This technology based solution saves time, and efforts of all the parties involved in the process, as it eliminates the HR co-ordination,” says Chatterjee.



**Candidates are evaluated upon 10 to 12 microexpressions. It includes, for example, how many times the eyelids moved; the nose was scratched; the eyes moved with unease, left and right and not straight, etc**

Subsequently the app saves the video interview.

### **Role of AI**

The AI algorithm will assess the microexpressions of the candidates. Candidates are evaluated upon 10 to 12 microexpressions. It includes, for example, how many times the eyelids moved; the nose was scratched; the eyes moved with unease, left and right and not straight, etc. This helps in assessing the responses of the candidate. This solution converts the whole interview process into a psychometric exercise.

The hiring manager, after listening to the responses and going through the assessment made by the AI solution, will further shortlist the candidates whom he wants to finally meet or do a video call with.



In terms of comparison, the entire hiring process, which was of fine and time consuming, has now become efficient, in terms of time,

quality and co-ordination. The technology team, HR and the respective function doing the hiring have come on a single platform.

What's more is that the AI also auto-learns from the hiring manager. It tracks and learns the kind of profiles the hiring manager likes and accordingly, it will source only those kind of candidates. However, this happens after the AI solution learns over days and months of what are the characteristics he is looking for in the candidate. The AI, at some point in time, will also be able to judge the hiring manager whether he has certain biases while hiring.

“Thus, this AI based solution has a huge potential; so much that the HRMS solution (SuccessFactors), over cloud that we have bought from SAP, wants to integrate this solution in their Hana platform,” informs Chatterjee. They currently don't have a similar functionality as a part of the SAP Hana offering.

# HOW ARTIFICIAL INTELLIGENCE CAN HELP SMES

The **intense focus** on the exponential potential of AI and related tools for businesses has thrown up questions around their relevance for the SMEs and whether they would stand to gain from investments in this area. By **Uma Ganesh**

**T**he intense focus on the exponential potential of AI and related tools for businesses has thrown up questions around their relevance for the SMEs and whether they would stand to gain from investments in this area. In the early 70s, personal computers were new to business domains with only large-scale companies being able to justify the investment.

To a great extent, the scenario

with respect to AI and businesses is very similar. However, due to the hype created, small businesses are made to consider AI as probably essential to their survival. Just as in the 80s, when there were exceptions and some businesses considered investment in computers for the future of business, SMEs who see value in such investment to maintain their edge and are able to afford it, should go ahead and evalu-

ate their investment decision based on their business objective and not just because of AI's novelty value. AI related technologies would take some more time to mature and in due course of time when AI tools become more accessible with lowering of costs and better defined business use cases, small businesses would be in a position to make use of these tools and implement them with ease.

Nevertheless, to begin with, it would be beneficial to consider AI tools that are available 'off the shelf' that are embedded as part of the solutions that SMEs could procure. For example, advertising and marketing solutions provided by Facebook and Google are universally applicable—be they large or small businesses. Particularly for SMEs with limited budgets at their disposal, this could be effectively

utilised to target the desired customers with precision messaging and aim at better conversions with the help of AI enabled solutions provided. By starting off with a focused target group of potential customers as part of the database identified by an SME for its campaign, using its algorithmic capabilities, Facebook will come up with the commonalities of their profiles and help create other identical cluster of potential customers. These groups will be exposed to sharply focused messages to engage with them and encourage them to learn about the SME's offerings.

Detecting malicious activities and preventing misuse of customers' credit card or debit card data require complex solutions customised to the requirements of specific businesses. Data security and protection from frauds have therefore become



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areas of necessity and SMEs can benefit by leveraging AI applications using vendor companies.

While currently the access to required datasets, the ability to construct datalakes and the skills required to build algorithms may be

some of the challenges faced by SMEs, in the near future, we are likely to have AI based systems leveraging the data related to a combination of small and large clients developing recommendation systems. This would enable SMEs to

skip the phase of building their own AI systems around their own databases and leverage the readily available off the shelf AI systems trained on multiple databases. Thus, in due course of time, matured ready-to-use AI platforms or tools for various functions would be available for businesses to adopt and integrate with their business transactions.

In preparation for this, focus on capturing and building a robust data infrastructure is essential. For AI tools to deliver results, businesses should start planning for proper cataloguing of data in which AI systems can be trained and therefore SMEs would do well to pay adequate attention to treating data as an important resource right away.

*The writer is chairperson, Global Talent Track, a corporate training solutions firm*



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