

AN INDIAN EXPRESS GROUP PUBLICATION

VOLUME NO. 29, NO. 9, PAGES 12, SEPTEMBER, 2018, ₹ 75

EXPRESS COMPUTER

**6 | FEATURE**NITI Aayog aims at
'AI for All'**8 | FEATURE**DHFL plans to make AI an underlying
capability across all business
processes**8 | FEATURE**How HDFC Bank is accelerating use
of AI across the organisation**11 | Opinion**Explainable AI: Maximise ROI:
Shiv Kumar Bhasin, CTO,
State Bank of India

Kotak Mahindra Bank rings 811 to take digital lead

The launch of 811, India's first downloadable digital banking ecosystem, has enabled Kotak Mahindra Bank to increase its share of wallet in India's highly competitive banking space



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infocommAsia

A project of:



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INDIA

18 – 20 September 2018
Bombay Exhibition Centre, Mumbai
www.infocomm-india.com

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EXPRESS COMPUTER

Vol 29, No. 9, SEPTEMBER, 2018

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Express Computer®
Regd. No. REGD.NO.MCS/066/
2018-20. RNI Regn. No.49926/90.

Printed and Published by Vaidehi Thakar on behalf of The Indian Express (P) Limited and Printed at Indigo Press (India) Pvt.Ltd., Plot No.1C/716, Off. Dadaji Konddeo Cross Road, Byculla (East), Mumbai 400027 and Published at 1st floor, Express Towers, Nariman Point, Mumbai 400021.

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4 | Kotak Mahindra Bank rings 811 to take digital lead



6 | Feature
NITI Aayog aims at 'AI for All'

7 | Bajaj Allianz hires Tal.Port, an AI enabled talent acquisition tool

AI will unleash the power of other technologies to provide greater value

8 | How HDFC Bank is banking upon AI across the organisation

INTERVIEW

6 | Ritesh Pai, Senior President & Country Head, Digital Banking, YES Bank



10 | Praveen Bhatt, Head - Digital Banking & Customer Experience, Axis Bank

**OPINION**

11 | The rise of smart, voice-based assistants : Harnath Babu, CIO, KPMG



Explainable AI: Maximise ROI: Shiv Kumar Bhasin, CTO, State Bank of India



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 (AI) 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 solutions 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,

BRIDGE21 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,

Staqui'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 apprehend 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.

In the enterprise sector, AI has already been used

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KOTAK MAHINDRA BANK RINGS 811 TO TAKE DIGITAL LEAD

The launch of 811, India's first downloadable digital banking ecosystem, has enabled Kotak Mahindra Bank to increase its share of wallet in India's highly competitive banking space

Abhishek Raval
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It is a sign of Kotak Mahindra Bank's digital strengths that is helping the bank deliver stellar results. In its recent results for Q1FY19, the bank declared that mobile banking transactions crossed one crore in volume and ₹ 10,000 crore in value; 89 per cent of recurring deposits were sourced digitally while 67 per cent of fixed deposits were sourced digitally. The bank is also close to doubling its customer base - in March 2017, the bank had estimated that it would double its customer base from eight million to 16 million by September 2018. In the quarter ended June 2018, the customer base moved from eight million at the end of March 2017 to 14.5 million. As the bank accelerates its digital strategy, Aruna Rao, Group CTO, Kotak Mahindra Bank, shares why 811 is a game changer for the bank.

In a recent media interaction, Uday Kotak said, "My science fiction view of banking is that you will see a complete blurring of financial services and technology, and banks of the future will have to work at a quarter of their current cost models." What's your view?

I think the picture that Uday Kotak has painted has already started to play out.

COVER STORY

We see several technology firms offering financial services and banks are offering a full range of cutting edge banking products and services on their mobile and net banking platforms. Kotak's mobile banking app is also an ideal lifestyle app for e-commerce transactions on Flipkart, PVR, Goibibo, Shopclues, IRCTC, etc.

In addition, new age digital products are conceived and designed by multi-skilled teams who understand banking as well as technology.

This transformation puts the focus on the needs of the customer and expectations from banks is high. Innovation and enhancing the customer experience is the primary focus. At the same time, cost reduction will accrue from automation and digitisation. More automation of operational processes through robotics, better customer engagement mechanisms such as biometrics rather than paper-based authentication, natural language processing (NLP) based chatbots to respond to simple customer queries will dramatically improve customer experience and also lead to a reduction in cost. In other words, leveraging technology for improved customer experience at the same time, decreasing costs.

For example, at Kotak, the launch of 811, India's first downloadable digital banking ecosystem with biometric-led KYC verification, has resulted in a paperless, real-time banking experience for customers, reduced the turnaround time for opening a bank account from a few days to a

The technical domain handled the eKYC facility available from the UIDAI. The customer can be validated by using an Aadhaar number. This also includes having the biometric verification functionalities added onto the product. Business thinking was required to figure out how can these capabilities be leveraged for the bank in terms of business innovation. Thereafter, the banking offering was explored as to what would be the minimum balance required, offering debit and credit card, interest paid, services offered around the product, etc. The product and the technical function sat together and explored how the product would take shape. All along, we also had to ensure compliance adherence. This includes regulations like minimum balance; if Aadhaar authentication is done, then a signature is not required.

In this way, 811 was born out of the collective effort of the technical infrastructure in the form of UIDAI; the regulatory framework and thinking from the business product manager.

811 was launched in March 2017, and we have reached about 14.5 million accounts recently. This includes accounts opened through 811 and through other means. The majority of the credit to the jump in the number of accounts opened goes to 811. Cross selling is what the focus will be and the bank will continue to acquire and get in more opportunities for cross selling. The bank is finding reasonable traction both in the digital and physical world.

In any technology budget, there are two components. First, the cost for "Running the Bank", i.e., keeping-the-lights-on related expenses. The prime objective here is to continually decrease the per-unit costs for these expenses. In any growing business, there will be an increase in networks, desktops, servers, etc, so the overall goal is to manage the absolute costs by making the processes more efficient so that the cost per unit is decreased.

That will leave a larger share for the discretionary "Change the Bank" projects. These are the technology investments to transform business models, provide competitive advantage and customer delight.

What's your strategy to partner with startups?

Start-ups tend to have a fresh point of view, they have new ideas and tend to be more agile. Our strategy is to partner with them on ideas and solutions and then industrialise them for scale. Banks have to consider a number of other aspects such as cybersecurity, availability, compliance with regulations, etc, which need to be built around the basic solution from startups.

What's your approach for reviewing; how do you analyse employee performance?

Different people respond differently to different degrees of structure and supervision. Some people excel in an autonomous environment with a high degree of freedom to try out new ideas while others are more productive when given specific directions. So I tailor my style of working and interaction to each team member's strengths and needs.

Which factors are affecting banks globally?

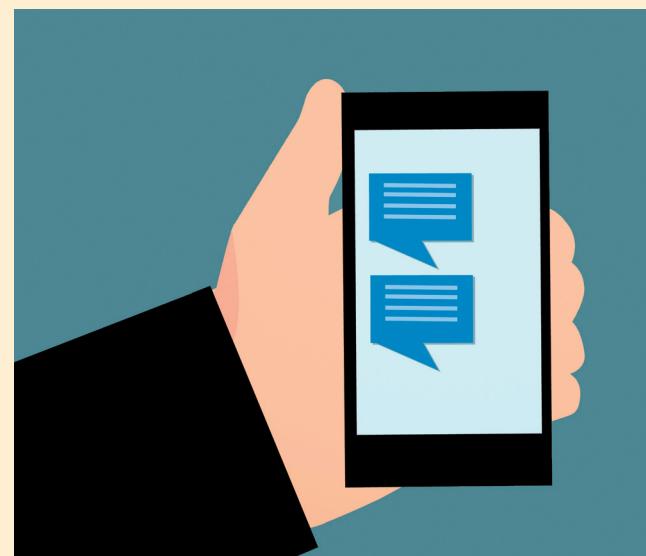
It is essential that one makes time to understand the local and global landscape. I usually attend a set of forums that cover these topics in-depth. I also attend global meets and conferences of financial services organisations which provide valuable insights on new trends in technology, regulation, digital adoption, etc.

Any management gurus, invited by the bank on a regular basis?

We have a constant stream of inputs from external experts. This includes technology consultants, process efficiency gurus and design thinking guides.

As a group, we also believe in not restricting such interactions to experts from our domain only. We have also found that people from different walks of life, be it

RECENT DIGITAL INITIATIVES



Kotak Mahindra Bank recently joined Ripple's leading enterprise blockchain network (RippleNet) to provide impetus to its inward cross-border remittances

Kotak Mahindra Bank recently announced the launch of its banking services on a pilot basis on WhatsApp. The WhatsApp channel will direct customers seeking information on service requests such as updating PAN, mobile number, email id, Aadhaar number, activating/deactivating passbook etc

The bank recently announced the launch of Keya - India's first AI-powered voicebot in the banking sector. Keya comes integrated with Kotak's phone-banking helpline and will augment the traditional interactive voice response (IVR) system. Keya more than halves the time of delivering an accurate response to a customer's query as he/she no longer has to go through the maze of options offered on the traditional IVR system

The bank recently launched 2 new innovations. Firstly, the welcome kit for customers has become digital, end to end. More importantly now, customers on the 811 platform can apply for credit card and integrate it on the go on 811. Not just the bank, but the subsidiaries are also focussing on digital. Kotak Securities, in particular witnessed a jump in volumes on training through mobile. This has become possible because of a slew of new initiatives. At Kotak Life Insurance, 78% of the individual policies continue to be sourced through digital means, i.e. through Tab. For Kotak General Insurance, 30% of the new business is sourced through the digital means.

sports or education, provide real insights that are equally applicable to banks and financial institutions. So we often invite such speakers to come and inspire us.

What's your advice to budding CIOs / CTOS?

The strategy is about doing the right things, and also about doing things right. So there needs to be a constant and equal focus on prioritising the right innovations and then ensuring the rigour of executing them well. Success

comes from balancing both well.

Role of technology in multiple functions

The bank has introduced collaboration technologies across the group for the employees to interact across functions. Skype is available to all employees. A mobile app has been launched for the field staff, which will have updated information about products, interest rates, regulations etc. The staff person can query the chatbot on the NAV of a particular fund or

performance of mutual funds, etc. It becomes easy to have information handy.

Analytics and datawarehouse plays a big role in compliance reporting. The area of fraud risk management can also be improved upon and enabled by heavy intervention of technology to decipher patterns on incorrect usage on ATM, mobile banking, savings account etc. The debits and credits using an ATM, mobile apps and other mediums can be correlated for suspicious transactions.

Digital Platforms

Q1FY19

89%

Recurring Deposit sourced digitally

67%

Fixed Deposit sourced digitally

172%

Mobile Banking growth YoY (volume)

105% growth YoY in monthly active customers on mobile app.

75% of mobile banking customers are ONLY on mobile app

Mobile Banking login is 6X of Net Banking

6 | FEATURE

NITI Aayog aims at 'AI for All'

ANNA ROY, A 1992-BATCH
officer of the Indian Economic Service and 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

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In 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

NITI AAYOG OUTLINES KEY RECOMMENDATIONS TO IMPROVE AI ECOSYSTEM

Promoting research

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

Skills

- 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

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 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



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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,

Adviser, NITI Aayog

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 encourage free flow of data and information. "These are the areas where the Indian

government must focus to play a prominent role. 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 (NAM). The 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

THE POTENTIAL USE CASES IN FOCUS SECTORS

Agriculture

- Soil health monitoring and restoration
- Corp health monitoring and real time advisories to farmers – Precision Agriculture
- Advanced detection of pest attacks
- Prediction of crop prices to inform sowing practices

Healthcare

- AI driven diagnostics like imaging diagnostics
- Personalised treatment
- Identification of potential pandemics

Education

- Adaptive learning tools for customised learning
- Intelligent and interactive tutoring systems
- Predictive tools to inform pre-emptive action for students predicted to drop out of school
- Automated rationalisation of teachers

Urbanisation

- Smart homes and smart public facilities
- Intelligent safety systems
- Crowd management
- AI driven service delivery

Mobility

- Autonomous trucking
- Intelligent transportation systems
- Community based parking
- Route flow optimisation

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 academic, 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)

INTERVIEW

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



"

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

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 minutes. 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 different 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 increased 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,

ePS, 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 in innovation using AI. We are working on getting our algorithms in perfect shape. They will cater to customers, who 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 securing 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.

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.

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

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Bajaj 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 behavioural 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 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 coordinated 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 convenient 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. 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 offline 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



This is a fantastic solution because it brings the hiring manager and the candidates together and keeps the HR out of the loop

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

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.

AI will unleash the power of other technologies to provide greater value

AI APPLIED ON ALTERNATE,
external sources of data to provide significantly better results, especially when there is no formal source of credit history



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Artificial 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 technology 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 patterns 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



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

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.

8 | FEATURE

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

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The 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 HDFC 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. 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 experiential 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 distribution 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 accomplish 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 involves 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 25-30 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



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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

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.

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



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At the heart of its vision to build a nation of happy home owners, 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 ingenuous 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 24x7 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 remain 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 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 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 digitised 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 'Phygital' 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 Jyothirlatha.

AI focus

AI in housing finance has automated processes and drastically reduced the cost of serving customers. While AI, on one hand, reduced the cost of financial services, on the



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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.

Jyothirlatha B,
Chief Technology Officer, DHFL

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.

GAME-CHANGING TECHNOLOGIES FOR VISIONARY BUSINESSES



When employees of Deloitte Amsterdam report for work at The Edge, the office app will review their schedules for the day and automatically assign them a desk or even a quiet room where they can concentrate. Once in the office, they can adjust the temperature and lighting via the app, which also remembers their coffee preferences. This is just one example of what connected Professional AudioVisual and Integrated Experience technologies can achieve.

Read on and discover how InfoComm India exhibitors Crestron and Business Octane have helped their clients to heighten productivity with their innovations.

Integrated Technology Spurs Collaboration in the Workplace

Founded in 1974, Petronas Nasional Berhad, or PETRONAS, is a Malaysian oil and gas multinational company that operates in over 50 countries. A proponent of innovation and strategic research and development, the company requires a technology infrastructure that can facilitate smooth communication and collaboration. As such, it launched the PETRONAS Digital Collaboration Centre, a 22,000-square-foot visualization and collaboration facility.

At the center, multidisciplinary technical teams can come together and discuss complex challenges and make real-time decisions for the company's Exploration and Production operations. In the early days of operation, however, the center faced numerous issues:

- ❑ Recurring interface issues during high facility usage, which led to frequent system restarts
- ❑ The downtime meant that meetings could not take place as scheduled or spontaneously

Solution to improve the efficiency and reliability of the center's system, Crestron was brought in to deploy its suite of intelligent solutions, which integrated multiple operational functions under a single processor and also introduced extenders and scalers into the IT infrastructure. Crestron was an ideal provider as the company already had prior experience with its CP2E, a compact Ethernet control system and Crestron Fusion, a monitoring and scheduling software.

The CP2E was upgraded to the CP3, a compact 3-Series control processor that allows the team to manage and integrate individual technologies for an easier, greener experience. PETRONAS' existing display matrix was switched to the Crestron DigitalMedia, responsible for managing and distributing digital AV and control signals. Smaller rooms were powered by Crestron DigitalMedia Presentation Systems to make smooth automation and matrix switching a reality.

Results

Thanks to the enhanced infrastructure, the facility has seen a huge decrease in downtime. The benefits of the revamp include:

- ❑ Room utilization rate now averages 95%
- ❑ A more reliable and easy-to-use interface to automate AV, lighting, video conferencing and mechanical lifter for electric privacy glass
- ❑ Operations for the entire center are managed by a lean team

Business Octane's Ultra-immersive Telepresence Technology Ups the Effectiveness of Business Meetings

Vedanta Group is a globally-diversified natural resource group committed to sustainable development and growth in the areas they operate in: copper, zinc, aluminium, iron ore and power. To ensure its over 52,000 employees and offices in four continents were well aligned with its business goals, Vedanta used to organize monthly face-to-face review meetings, a complex operation as it required almost all of its 150 top executives to fly to one location, and put up in hotels for the duration of the meeting.

Wanting to streamline this process, Vedanta made the decision to partner with Business Octane to create telepresence rooms. Business Octane's Ultra-immersive Visual Collaboration Group Telepresence solution makes collaboration easier, allowing participants to maintain eye-to-eye contact, enjoy high-definition video and stereo spatial audio. They can also read the nuances of the other participants' body languages. The participants, no matter where they are, will get to access and write on the same whiteboard. The entire solution also comes with AltraAcoustic Interiors. The acoustically-treated walls improve the quality of audio in telepresence meetings and audio teleconferences. There are also motorized table top content displays, enabling all participants to see content crystal clear.

Today, Vedanta has 19 telepresence rooms across India, one in London, one in Zambia and another in South Africa. Its chairman has these telepresence rooms at his residences in Mumbai, London as well as New York. Interoperability is also possible — the solution lets participants connect to any video conferencing machine inside a mining plant office or anywhere else in the world. It also enables employees at Vedanta to conduct meetings with vendors, customers and consultants, even if they are not equipped with a telepresence facility.

See Similar Technologies at InfoComm India 2018
Looking for cutting-edge technologies? This September at InfoComm India 2018, over 200 exhibitors from 20 countries will showcase their latest innovations. Industry bellwethers such as Aero, Crestron India, Delta, Harman, Kramer Electronics & Panasonic India will be here. Discover a wide array of Pro-AV and Integrated Experience solutions such as room scheduling, interactive digital boards, presentation room controls, enterprise automation technologies and more.

InfoComm India 2018 Summit:

How Advanced Technologies Will Transform the World We Live In

InfoComm India 2018 Summit is the show's learning platform. This year, there are over 53 free-to-attend educational sessions across AVIXA Seminars, Industry and Technology Forums, AVIXA FlashTracks, and Platinum Partners' Presentations. Experts will be here to share their hard-earned insights.

Express Computer will lend muscle to the Enterprise IT & CXO Forum. This is a jam-packed three-hour session covering a wide range of topics, from digitization best practices to cybersecurity in a hyperconnected world and an introduction on emerging technologies. It will take a close look at security management as well as the need to chart digital roadmaps, especially with the proliferation of AI, Blockchain and IoT.

In "Information Technology: A Catalyst for India's Healthcare Sector", the Computer Society of India will cover how cloud, AI and machine learning are increasingly being tapped by the Indian healthcare ecosystem. With the power

of the cloud, doctors are sharing high-resolution 3D imagery and can consult partners locally and abroad in real time, hence improving pre-planning and success of the overall procedure. AI is giving better insights to clinicians in early detection of diseases by capturing and analyzing various vitals of patients, predicting prognosis and future action plan for patients. Be here to understand how these emerging technologies will impact healthcare.

Full Summit program and updates are available at www.infocomm-india.com

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10 | INTERVIEW

AI powered humanoid enables over 100 sales bookings at an 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 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 uniform 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 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 overall 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 perception 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

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 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 fail-safe 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 analytical 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 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 he can 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.

Up to 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.

Please 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) environment. 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.

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 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. It 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 Magicbricks.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.



Harnath Babu,
CIO, KPMG

The rise of smart, voice-based assistants

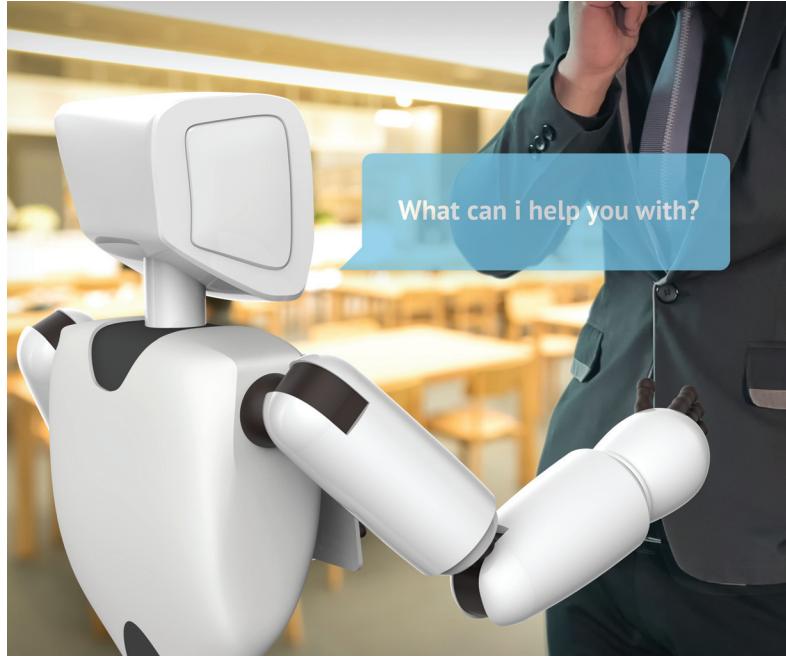
From domestic robots to drones, Artificial Intelligence (AI) to smart cars, we are now apparently surrounded by endless tech innovations—all set to enhance the way we experience the world around us.

We can now rely on a next-generation, smart, voice-based assistants to remind us of our meetings, travel plans, order a cab, check for the best available insurance plans and keep a tab on premiums due, order grocery, control lighting and much more—without the need to glance at a smartphone or computer screen!

Thanks to the rise of AI and natural language processing (NLP) algorithms, we are now surrounded by devices that listen, learn and respond to us. These smart, voice-based assistants are changing the way we get around, shop and even manage our devices at home. Now they are not only making the tedious tasks easier, but also helping enterprises across multiple verticals in enhancing customer experiences.

But how?

Living in the cloud and listening to users through physical devices, today's voice-based digital assistants have the potential to find and report crucial information, as well as slice and dice the data according to user instructions. With self-learning capabilities, they interact with users in a natural way and help in streamlining a number of



business processes as well as boosting employee efficiency.

They are becoming the go-to search tools for users, who would rather ask a question than type it in a device. In fact, these voice-based devices are expected to be the foundation of all consumer experiences

— in their home, in the car, on the phone and all other connected devices. As per a study by Gartner, by 2020, the average person will have more conversations a day with bots than they do with their spouse. The day is not far when asking your banking

questions will be as easy as asking your in-home assistant about weather or traffic. With the rise of voice-controlled technology in the banking sector, there has been a movement from transactions to interactions lately. The digital assistant, having

access to the customer's account information, can help them with basic queries such as checking account balances, making payments, paying bills and more.

Similarly, for insurance companies, voice assistants have changed the way

consumers interact. From knowing the key features of an auto insurance policy, date of next payment and getting access to their policy's documents, customers can easily get help from virtual assistants with their policy needs just through instructions.

Even in real estate, brokers are using these devices as a way to court prospects, with applications that enable consumers to search for homes using their voice.

Not just this, voice assistants are nowadays being integrated with cars—making them smarter as the user can simply talk and give instructions to it. Being fed with information about the owner, his/her preferences and address of home, work, etc, the smart car can then auto-set the navigation, adjust internal settings viz, audio, temperature, etc, as well as offer real-time advice about road conditions and traffic.

The e-commerce industry is also reaching its peak. Deploying AI-based voice assistants, the giants are delivering a shopping experience that can take place anywhere and anytime, even while waiting for a cab or picking up the kids from dance school. All that the shopper has to do is say, "Add three chocolates in my cart", or "Reorder coffee" or even check the status of a shipment by asking, "Where's my order?"

Sounds crazy, isn't it? But this is where we are progressing. With

automation and thinking machines replacing human tasks, it would be safe to say that we are living through a fundamental transformation in the way we perform mundane tasks as well as work.

A digital assistant could also prove invaluable to the HR. How can we hire the right talent? How can we attract, keep and motivate the employees? What skills are required to prepare and compete in the future? Such questions, and many more—voice assistants integrated with analytics can help answer them while you focus on core operations. After collecting, processing and analysing prospects' data, the devices can help get KPIs to act upon. Additionally, as the trend towards globalisation grows, it could also monitor industry trends and the latest business practices to stay relevant with the ever-changing HR landscape, and use that knowledge to frame policies, etc.

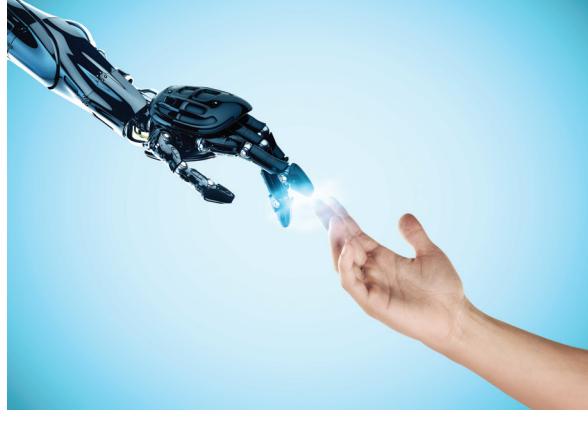
So, the next time you wonder how to improve corporate productivity, think of voice-enabled digital assistants. They can help in a number of ways, just like automating meeting scheduling, for instance.

Though none of us can say with certainty how voice-controlled technology is going to transform the world over the years, the organisations that plan ahead will be the best prepared to succeed and enhance the ways we experience the world around us.



Shiv Kumar Bhasin,
CTO, State Bank of India

Explainable AI: Maximise ROI



Algorithms that outperform humans in specific domains already exist and will become more common. One consequence of an AI system's superhuman performance may be that there is no explanation for how it works. Yet there could be compelling social benefits from deploying some tools even before they are completely understood. As an analogy, modern medicine has developed a framework for testing the safety and efficacy of novel treatments, even when the underlying mechanism of action is unknown. We may need similar frameworks for AI systems in critical deployments. AI bias merely reflects the same biases that humans have—thus it is key to establish strong governance that embeds accountability into the system.

Some other machine-learning (ML) techniques, including those that outperform deep learning in certain scenarios, are a lot more transparent. But deep learning, which allows for sophisticated analytics that are useful to the finance industry, can be very difficult to interrogate. This issue could become more significant over the next few years as deep learning becomes more commonly used and as regulators turn their attention to algorithmic accountability.

Personal banking division of the bank can leverage the credit card division's data for offering instant consumer durables loans to get pre-approved. For example, feed credit history and other financial data into a machine

learning algorithm and train it to recognise people who might default on their consumer durable loan installment payments. Here machine learning algorithm needs to explain few sample cases why it would be probable default, which will not only improve underwriting for the humans, but humans may further tweak the machine learning algorithm to get more precise results.

Do machine learning algorithms always need to be explainable?

May not be all the time, however, it's necessary to learn whether my business strategy is correctly getting implemented by the deep machine learning programmes requires these algorithms should be

"explainable". Unlike the opaque neural networks used in conventional, "explainable" AI provides clear audit trials that justify the answers to issues with the evidence behind the reasoning. In regulated industries like finance, where organisations need accurate insights, the explainable nature of solutions exceeds the capabilities of conventional AI. It helps predict customer propensity for using new services. In fraud detection systems, explainable AI can further identify anomalies in customer behaviour and can help financial institutions to keep a check on fraudulent activities.

As the algorithm learns, we should be careful to prioritise data quality, veracity and privacy. Since algorithms "learn" patterns from data, it's essential to select data sets that do not reinforce existing biases and to design algorithms that are easily understood and transparent about their underlying decision models. Consider how an AI-enabled hiring platform that masks an applicant's gender and

AI bias merely reflects the same biases that humans have—thus it is key to establish strong governance that embeds accountability into the system

ethnicity could help level the playing field for traditionally underrepresented candidates.

There are five major areas where Explainable AI is going to make game-changing impact in the financial services industry.

1 Transforming financial risk and compliance

Fighting financial crime (AML, transaction fraud, name screening, payments screening: X-Border, domestic) with explainable AI to more efficiently and accurately identify suspicious actors and activities and reduce risk while lowering costs.

- Creating intelligent customer risk profiles for more accurate assessment
- Improved case intelligence and guided resolution
- Benefits for each AML compliance executives, case analysts, AML technologists, and regulators.

2 Prediction of customer behaviour & credit worthiness

Firstly, the biggest use of AI in financial services would be in generating insights that can accurately predict customer behaviour. For example, there is already artificial intelligence in existence, that can learn your customers' past behaviour and make accurate recommendations on the customers' credit-worthiness. Most machine learning algorithms existing today cannot provide reasoning behind how a decision was reached.

Explainable AI will be widely adopted by enterprises either as best practice or requirement, and governments may make it a regulatory requirement.

3 Early detection and prevention of cyber-security threats

Security is a big issue, especially when it comes to online transactions. Financial services companies can build robust security systems into their solutions using advanced machine learning and neural networks. A flavour of neural networks works with two opposing algorithm, one generator and one discriminator. The generator algo creates fake data that looks exactly like the real data set. The discriminator algo analyses both fake and real data. Each algo learns from the other and gets better over time. This system can be especially useful in detecting fraudulent behaviour, suspicious transactions and early detection and prevention of cyber security threats.

4 Visual identification and verification

Neural networks can help to visually identify customers and documents and could provide a huge leap in streamlining functions like account creation, loan and insurance origination and documentation. An AI could visually verify if the documents fed to it are authentic, and whether a customer trying to apply for a

loan is the person who he or she claims to be. Coupled with a credit admin software that handles loan documentation for all parties (lawyers, evaluators, bankers), explainable AI could provide degrees of automation that was previously thought impossible.

5 Chat-bots that are more "human"

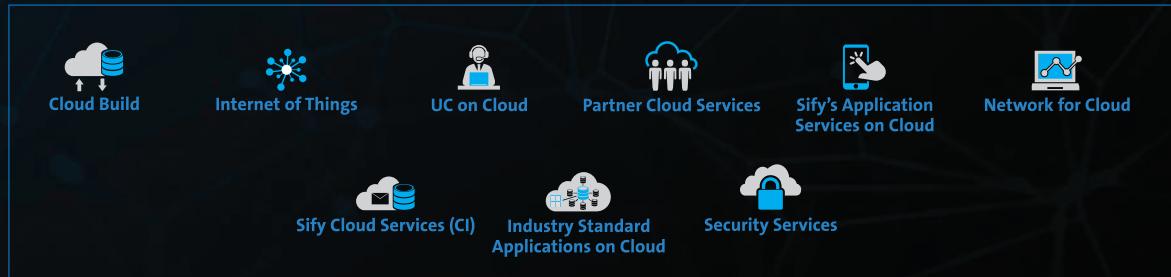
Also, paired with a customer engagement platform, an explainable AI could power next generation chat-bots that can intelligently answer customer queries, effectively reducing load from customer services department. Chat-bots can be integrated with social networking sites, and accept requests for application and orders directly from social media channels.

Banks are eyeing AI technology to help them use the huge volumes of data they have on hand to improve compliance, increase customer engagement and improve operational efficiency. Whether this truly benefits the customer more or the banks themselves is up for debate, and up to regulators to try and police. Still, applications of machine learning techniques to banks rich data sets can help fight fraud, save time and money for customers and automate back-office functions. Explainable AI could definitely help fill these gaps, correct and make effectiveness of machine learning programmes aligned with business strategy of the bank.

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