**national artificial intelligence**

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**National Strategy For Artificial Intelligence**

India6 Min ReadAug 21, 2019

### National Strategy For Artificial Intelligence

Summary published by :--



**Introduction**

 discussion paper titled National Strategy for Artificial Intelligence #AIForAll was published by NITI Aayog in June 2018.

India, being one of the fastest-growing economies, has a significant stake in the AI revolution that has taken the world by storm. Recognizing AI’s potential to transform economies and the need for India to strategize its approach to be a part of this change, the government has taken the task of crafting a national strategy for AI, which is the focus of this discussion paper. This strategy document shows that India has the strength and characteristics to position itself among leaders on the global AI map. It also focuses on how India can leverage transformative technologies to ensure social and inclusive growth in line with the development philosophy of the government.

It is true that AI has the potential to provide large incremental value to a wide range of sectors and is rightly termed as a transformative technology. Given its disruptive nature, it is important that the government should look into its large-scale adoption strategies so as to strike a balance between narrow definitions of financial impact and the greater good. Given this background, NITI Aayog has decided to focus on five sectors that are envisioned to benefit the most from AI in solving societal needs: a) healthcare, b) agriculture, c) education, d) smart cities and infrastructure and e) smart mobility and transportation.

However, to reap the benefits of deploying AI at scale, the paper also identifies the barriers that need to be addressed in order to achieve the goals. The barriers that have been analyzed are a) lack of broad-based expertise in research and application of AI, b) absence of enabling data ecosystems, c) high resource cost and low awareness for adoption of AI, d) privacy and security and e) absence of collaborative approach to adoption and application of AI. In this context, the paper rightly points out that AI research in India is still in its infancy and requires large scale concerted and collaborative interventions to scale it up. The paper proposes a two-tiered structure to address India’s AI research aspirations: a) CORE (Centre of Research Excellence) which will focus on developing a better understanding of existing core research and pushing technology frontiers through the creation of new knowledge and b) ICTAI (International Centers of Transformational AI) which will have a mandate of developing and deploying application-based research. The paper also highlights the fact that adoption of AI across the value chain viz. start-ups, private sector, PSUs and government entities, will truly unlock the potential by creating a virtuous cycle of supply and demand. Hence, to address all the barriers to its deployment, a marketplace model should be adopted with a focus on data collection and aggregation, data annotation and deployable models.

The report also states the fact that as AI-based solutions will permeate the way we live and do business, the question of ethics, privacy and security will emerge. To address these questions, it is advisable to set up a consortium of Ethics Councils at each CORE that will adhere to standard AI practices. The paper also emphasizes the fact that appropriate handling of data, ensuring privacy and security is of prime importance and suggests establishing data protection frameworks and sectorial regulatory frameworks, and promotion of adoption of international standards.

**Relevance of the report**

The paper is a must-read for those who want to have an end-to-end view of AI adoption in India and the challenges and recommendations associated with it. The paper successfully identifies priority areas for India’s efforts in AI and categorizes three distinct components in this regard. They are a) opportunity which assesses the economic impact of AI for India, b) AI for the greater good which focuses on social development and inclusive growth and c) AI garage for 40% of the world which reiterates the fact that India can be 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. Through this report, the reader gets an in-depth view of the focus areas of AI intervention in various sectors and how the government has successfully addressed some of the sectoral challenges. It also lays down recommendations such as private and public participation in advanced research, skilling of the workforce for AI, accelerating adoption and ethics and privacy principles while building a responsible AI.

**Key takeaways**

* Even though AI has the potential to provide incremental value to all sectors, till date, its adoption has been primarily driven from a commercial perspective. Nevertheless, the government has taken large scale initiatives to focus on five main sectors where AI can be used to maximize societal benefits.
* There are multitudes of challenges that India needs to overcome to realize the full potential of AI. However, the good part is that, if addressed through concerted, collaborative efforts by relevant stakeholders, with the government playing a leading role, it could lead to a fundamental building block that will form the core of India’s AI leadership.
* Given that India’s capabilities in AI research are limited, early adoption of AI through start-up community is essential. Along with this, India needs to ensure adequate privacy, security and IP related concerns and balance ethical considerations with the need for innovation.
* Efforts should be made to establish a centre of excellence for AI in top educational institutes to enable broad-based development of AI research capabilities across India. In addition to this, the changing nature of the global service sector where automation is occupying a big part would essentially mean up-skilling or re-skilling the workforce to prepare for the future. This also requires standardization of informal training institutes.
* To achieve the goal of #AIforAll, the government should act as a facilitator and an active promoter while ensuring that it does not crowd out the private sector.

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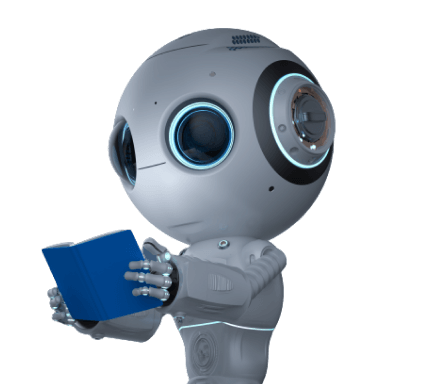
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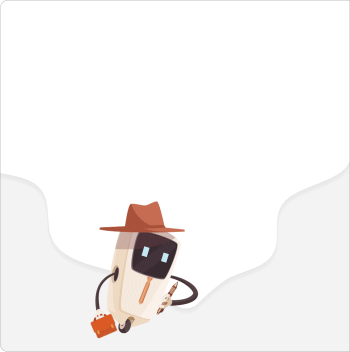
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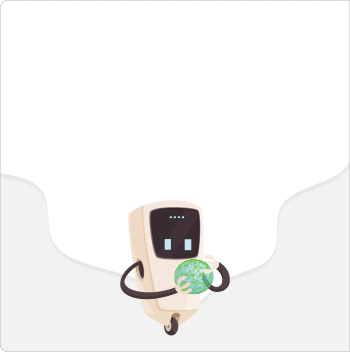
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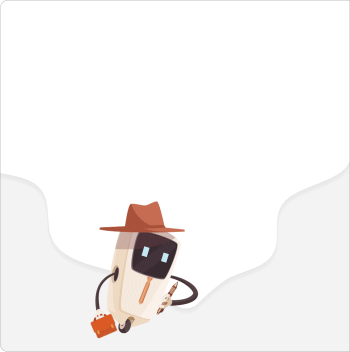
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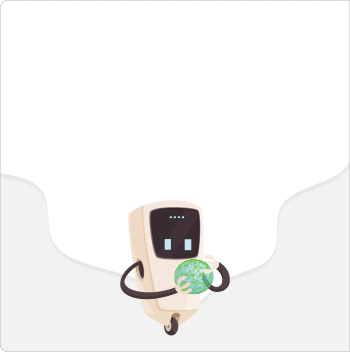
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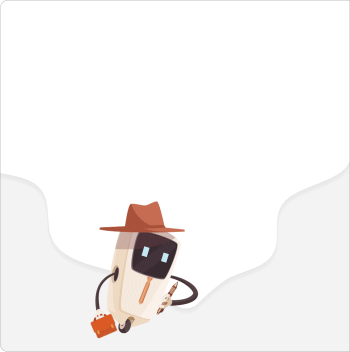
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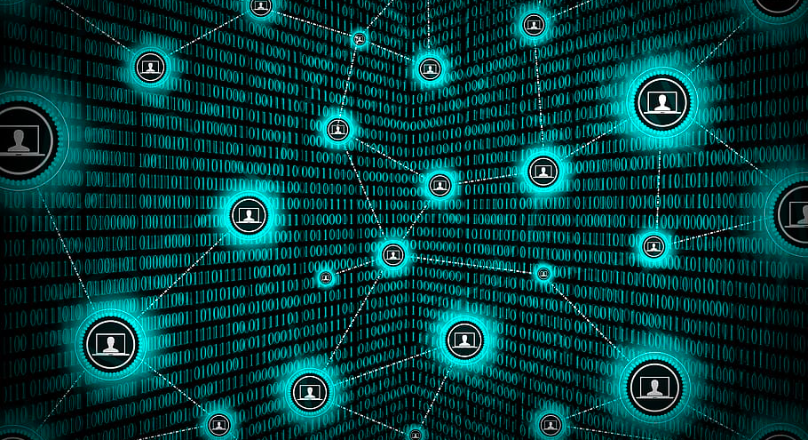
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### AI powered FinTech: The drivers of Digital India

Artificial Intelligence along with Machine Learning can be an impetus to financial services for MSMEs and Rural population across India.

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The Indian banking landscape is seeing a massive transition with the advent of financial inclusion through RBI. As the government shifts focus toward cashless society (evident from government demonetisation and digital India schemes), it also pushes a bouquet of digital payment options in the form of schemes, apps and services like small savings accounts, Agency banking channel, Aadhaar number, Pradhan Mantri Jan Dhan Yojana, BHIM, AEPS payments and UPI. Though the journey has just begun it may be wise for the banks and regulators to think of ways to take automation to MSMEs and the rural hinterland. Technology, a decade and a half ago changed the landscape of banking in India and is again set to revolutionize the entire process of financial inclusion and this time AI will augment the idea.

## Banking the Unbanked

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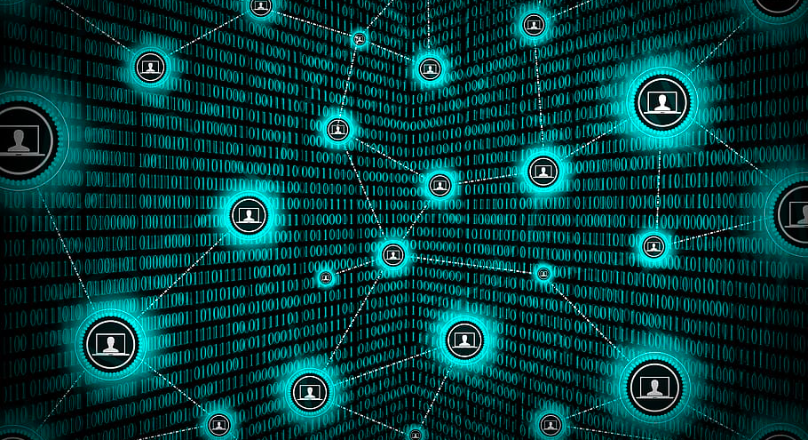
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## Banking the Unbanked

In India, a large fraction of 1.3 billion people is still not able to access basic banking services. For instance, in 2017, the Global Findex data showed how 5% of Indians accessed a financial institution account from their phone or the Internet, and only 2% of the population owned a mobile money account. Comparing this to sub-Saharan Africa, where 21% of adults had a mobile money account in 2017 and a 50% increase since 2014, one can see how India lags even compared to other developing regions across the globe. Similarly, for Digital payments it was observed how 97% of adults in Kenya making a digital payment in 2017 and 60% in South Africa, compared to 29% in India.

There exists a huge gap which can be filled by allowing a fresh influx of technological backed banking scheme. However, with rural India seeing a growth of 15 per cent in mobile internet in 2017 with mobile internet users’ nearly touching 187 million, the prospective of mobile banking will be foolish to deny. Corroborate this with the argument that providing the right information to consumers (both financial and non-financial) is likely to increase consumer satisfaction. An example of a bank that is offering value-added services is ICICI Bank in India which is exploring social media such as Facebook wherein a user can link their debit card to their Facebook profile and use this social platform to recharge their pre-paid mobile phone, transact (borrow and lend money) with their acquittances & friends. On the same lines, in Turkey, DenizBank is offering various banking services through Facebook where users can link their Facebook account with their bank account to execute money transfers and use their credit card for various other activities online. Similarly, services like FinChatBot and Teller allows fintech to communicate automatically through message and present personalized advice to their customers.

## Enter AI and Machine learning

In rural India where there is hardly any credit history for prospects for small loans, AI can create credit score/credit-worthiness scores using data from various centrally governed social security numbers, farming turnover, affordability (mobile being used, mobile bills, recharge frequency), social network (social media, cell phone call logs), travel information (GPS data, google timeline) and other such features using predictive modelling and Machine Learning algorithms.

ML algorithm can eventually build credit profiles for those who were never exposed to the banking system and remain excluded from ‘financial exclusion’. Loan Frame uses ML to access the credibility of their customers. In another case, companies such as Monsoon Credit Tech use AI to determine the credibility of MSMEs. Using AI, many countries have started giving cash-flow based loans to MSME by learning patterns from various unstructured data sources including transactions, purchases, financial statements, tax statements and various other documents. These data help ML to predict the financial situation of the company and prescribe repayment methods. For instance, Kopo Kopo (by Grow) in Kenya which is exploring capital requirement of MSME is automatically decided and kept apart for repayments without creating a dent in the cash flow. Many other Fintechs around the world have confined every documentation for approval over a mobile app for loans by analysing streaming cash flows of MSME using data from various digital wallets.

With the advent of PM Jan Dhan accounts which are linked to Aadhar numbers, ML can be used to predict and prescribe the right products to the customer. The transaction behaviour of these Jan Dhan accounts clubbed with techniques described above, ML can be used to find out the right products for people in remote areas. Clubbing AI with Blockchain technology can break the barriers to accessing financial services for rural areas. Blockchain technology clubbed with AI can be used to create digital DNA of customers who may not have relevant documents for availing banking facilities. Oradian along with Blockchain platform Stellar (by technologically integrating the Stellar platform into their core banking system) brought low-cost micro-payments in Nigeria. Oradian will allow around 300,000 citizens to transfer money between MFIs over the Stellar network without paying heavy charges thus creating huge tractions for such services. This network is available across 200 branches and is accessed by over 300,000 customers, mainly female customers across rural areas in the country.

The Fintech and bank, hand in hand, could save millions by using AI w.r.t cost of acquiring new customer, reducing churns and lowering default rate - a win-win situation. The bank can further use AI techniques like (Deep) Reinforcement Learning to make AI smarter with every new transaction and feedback. Given the fact that AI and ML can use data from sources that were in past never imagined, sensitive banking decisions can be easily made. One example is data from GSTN being used by AI and ML to create a convincing case for financial support for MSMEs. Not only a credible case being presented, but the time taken to create such cases can be reduced manifold from months to few days, thus helping MSMEs to have quick access to financial support and reducing red-tapism.

## AI breaks language barriers

AI can be of assistance to Fintechs and banks in creating better customer experience without recruiting a myriad of agents. AI can easily use NRLP (Natural Regional Language processing) to access rural areas (where communications are largely in regional languages/dialects) from a toll-free mobile number at any given hour of the day. This would not only enhance customer experience but can be used to even communicate in local dialects. It will save travel cost and time for people residing in rural areas and are looking for various banking services. Moreover, using voice fingerprint techniques for speaker recognition, the prospective customer can even subscribe to various banking facilities.

## Authorize the Voice

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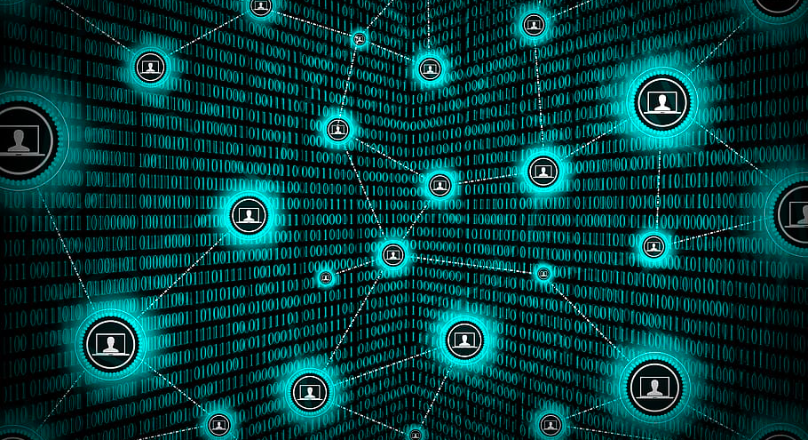
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Santander and HSBC both started voice banking technology on their mobile apps in collaboration with Nuance Communications which are intended as an additional layer of biometric security for the customer. By analysing over 100 factors such as speed, diction, accent and pronunciation, individuals can authorize themselves and make payments, report lost cards, set up account alerts and answer questions about spending.

Recently, Bank of America launched a financial digital assistant called Erica while other banks like UBS, Credit Suisse and JPMorgan are using virtual-advisors (intelligent chatbots) that makes the use of cognitive and Machine learning to guide customers with financial planning and investments. One such breakthrough is Amelia that was able to manage 65% of the most common customer queries in under four minutes instead of the average 18 minutes in case of manual query resolution. Importantly, for the banking industry, Amelia can perform all of the key customer-related processes without ever wandering away from the rules & regulations. 'Luvo' is another online virtual assistant developed - using IBM's Watson AI system - which was recently rolled out by the Royal Bank of Scotland (RBS) and NatWest to interact with customers and address queries and perform simple banking activities via a chat tool powered by AI.

## Credit Rating without a history of banking

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