



India in the AI Race

This article is based on an opinion piece published in The Hindu "AI superpower or client nation?" and has inputs from various sources.

American author and programmer Daniel Keys Moran says "You can have data without information but you cannot have information without data." If the 20th century was of computers, 21st was of Information Technology, then the next century is going to be of Artificial Intelligence. So, what drives AI? - Big Data. The raw and unstructured data extracted from different sources is processed to create BIG Data which is then used to train AI. In a way, Big Data acts as fuel for AI i.e. Artificial Intelligence be the catalyst that brings ROI & tangible asset value to data.

Top governments and corporates envision that the future is going to be all about the ownership of data and the power to analyze it - and that is what Artificial Intelligence (AI) does. While India has made its mark in the IT sector, it is yet to carve out its place in the world of Artificial Intelligence.

Countries in AI race

China, alongside the US, is already a world leader in terms of AI research. China has published the most research papers, among leading countries, on **deep learning** in the last few years. Coupled with the fact the country benefits from a huge supply of data - generated from its estimated 750 million internet-using population - China's dominance in AI is a highly likely future.

The US benefits from a well-established tech scene. Apple, Facebook and Tesla have already invested billions in AI research in the recent years. And Microsoft remains the top organisation when it comes to producing **high-value quoted research**, with Google and IBM also making names for themselves in this space.

It's worth noting that other countries are also making strides in AI. **Last year, the United Arab Emirates became the first country with a government minister dedicated to AI.** Russia plans to make 30% of its country's military equipment robotic by 2025. And Singapore's government pledged SG\$150 million to AI industry research just last year. Apart from these, Germany, Norway, Sweden, the UK are other countries are moving towards automation at a fast pace.

Where Does India Stand?

No doubt that India also hopes to become an AI powerhouse in near future. The NITI Aayog released a report on National Strategy on AI which underlines the importance of AI in transforming every sector of the economy and how India is going to harness its potential for public welfare.

National Strategy on Artificial Intelligence

Key Highlights:

NITI Aayog has decided to focus on five sectors that are envisioned to benefit the most from AI (in solving societal needs):

- **Healthcare:** Increased access and affordability of quality healthcare.

- **Agriculture:** Enhanced farmers' income, increased farm productivity and reduction of wastage.
- **Education:** Improved access and quality of education.
- **Smart Cities and Infrastructure:** Efficient connectivity for the burgeoning urban population.
- **Smart Mobility and Transportation:** Smarter and safer modes of transportation and better traffic and congestion management.

To truly reap the benefits of deploying AI at scale, the report identifies the **following barriers** that need to be addressed in order to achieve the goals of **#AIforAll**:

- Lack of broad based expertise in research and application of AI.
- Absence of enabling data ecosystems – access to intelligent data.
- High resource cost and low awareness for adoption of AI.
- Privacy and security, including a lack of formal regulations around anonymisation of data.
- Absence of a collaborative approach to adoption and application of AI.

Budget allocation for **Digital India**, the government's umbrella initiative to promote AI, **machine learning**, **3D printing**, and other technologies, has been almost doubled.

NITI Aayog is also working on building the country's largest blockchain network – **IndiaChain**. IndiaChain will be linked to **IndiaStack** and other government digital identification databases. IndiaStack is a set of code developed around India's unique identity project **Aadhaar**.

India lags far behind in terms of owning its own large commercial digital databases. Even the handful of Indian ventures present in the market are being taken over gradually eg. taking over of Flipkart by Walmart.

India isn't faring badly, though. **Over half (58%) of the companies using AI in the country work at scale**. But, India is yet to devise a law on data protection and privacy. However, Justice BN Srikrishna committee has submitted its report on data protection recently.

Recommendations of Justice BN Srikrishna Committee

The committee recommends that

- Processing (collection, recording, analysis, disclosure, etc) of personal data should be done only for "clear, specific and lawful" purposes.
- The committee also recommends giving a person the "right to be forgotten."
- "Sensitive" personal data (such as passwords, financial data, sexual orientation, biometric data, religion or caste) should not be processed unless someone gives explicit consent.
- A Data Protection Authority which is supposed to "protect the interests of data principals (persons giving their data) should be set up.
- Aadhaar Act 2016 should be amended to ensure autonomy of the UIDAI and to "bolster data protection".
- RTI Act 2003 should be amended so, that there is no obligation to reveal personal information which was not related to "public activity or interest".

What can India do?

The various applications and strategies mentioned in the NITI aayog report **emphasize "using AI"**. However, **what we are missing out on is "developing AI" of our own**.

It is being speculated that India might end up as a **big consumer of the new tech-economy featuring AI and IoT (Internet Of Things) related technologies**.

Further, we cannot afford to become the source of big data for corporations all over the world which are mostly foreign. Also, a non-AI military against an AI-powered one will be like a hapless infantry unit facing an armoured division.

Thus, it is high time that India realizes that the control that comes with Artificial Intelligence, it **military, economic or political**, is of paramount importance in deciding the future leaders of the world.

The plethora of **start-ups is not going to serve as a storehouse of big data** that is needed to develop Artificial Intelligence for a country as big as India, especially when they can be easily bought by giants like Amazon, Walmart, Facebook or Google.

“Indian policymakers should be aiming at the highest levels of new value chains that AI will create in every sector. It is mastery over the systemic cores of AI where the real national advantage lies.” We need to create centres of AI ecosystem instead of focussing on peripherals like small IT industries. Instead, we need big digital corporations with a global outreach that can compete with other similar platforms all over the world.

For this, it is important that the government makes policy interventions that give a push to domestic data-based sectoral platforms, like in e-commerce, urban transport, agriculture, health, education, etc.

“Such policy protection alone will ensure that we have large-scale data-driven Indian companies able to develop the highest AI in every sector, by employing huge Indian data to solve (equally huge) Indian problems.”

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