

# EMERGING TECHNOLOGIES



► **WeChat**

**Arya Patnaik**

Co-Founder

Intermind Digital Solutions

MMS (1998-2000)

# MESSAGE FROM THE DIRECTOR

Dear Readers,

It gives me great pride to introduce SAMVAD's edition every month. Our SAMVAD team's efforts seem to be paying off, and our readers seem to be hooked onto our magazine. At WeSchool, we try to acquire as much knowledge as possible and share it with everyone.



Prof. Dr. Uday Salunkhe  
Group Director

As we begin a new journey with 2023, I sincerely hope that SAMVAD will reach new heights with the unmatched enthusiasm and talent of the entire team.

Here at WeSchool, we believe in the concept of AAA: Acquire Apply and Assimilate. The knowledge you have acquired over the last couple of months will be applied somewhere down the line. When you carry out a process repeatedly, it becomes ingrained in you and eventually tends to come out effortlessly. This is when you have assimilated all the knowledge that you have gathered.

At WeSchool, we aspire to be the best and unique, and we expect nothing but the extraordinary from all those who join our college. From the point of view of our magazine, we look forward to having more readers and having more contributions from our new readers.

SAMVAD is a platform to share and acquire knowledge and develop ourselves into integrative managers. Our earnest desire is to disseminate our knowledge and experience with not only WeSchool students but also the society at large.

Prof. Dr. Uday Salunkhe,  
Group Director

# ABOUT US



## OUR VISION

“To nurture thought leaders and practitioners through inventive education.”

## CORE VALUES

Breakthrough Thinking and Breakthrough Execution

Result Oriented, Process Driven Work Ethic

We Link and Care

Passion

“The illiterate of this century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.” -Alvin Toffler.

At WeSchool, we are deeply inspired by the words of this great American writer and futurist. Undoubtedly, being convinced of the need for a radical change in management education, we decided to tread the path that led to the corporate revolution.

Emerging unarticulated needs and realities require a new approach in both thought and action. Cross-disciplinary learning, discovering, scrutinizing, prototyping, learning to create and destroy the mind's eye needs to be nurtured differently.

WeSchool has chosen the 'design thinking' approach towards management education. All our efforts and manifestations, as a result, stem from the integration of design thinking into management education. We dream of creating an environment conducive to experiential learning.

# FROM THE EDITOR'S DESK

---

Dear Readers,

## Welcome to the 137th Issue of SAMVAD!

SAMVAD is a platform for “Inspiring Futuristic Ideas” , we constantly strive to provide thought-provoking articles that add value to your management education.

We have an audacious goal of becoming one of the most coveted business magazines for B-school students across the country. To help this dream become a reality, we invite articles from all management domains, giving a holistic view and bridging the gap between industry veterans and students through our WeChat section.

In this issue of SAMVAD, we bring to you some articles focusing on ‘Emerging Technologies’ with a section called ‘WeChat’. Our WeChat alumni for this edition is ‘**Mr. Arya Patnaik**’ , who is the **co-founder at Intermind Digital Solutions LLP** . In this segment, we have gained exclusive insights into the developments occurring within the realm of our chosen theme.

Technology is advancing rapidly in today’s fast paced world with almost each industry being revolutionized. May it be business models or transformation in the ways we live, technologies such as **Artificial Intelligence, Data Analytics, Internet of Things (IOT), Machine Learning**, etc. are catalysing the march of humanity towards a kind of disruption and innovation that was unheard-of. According to a report by CompTIA, **46% of the new revenue growth** in the technology sector in the period 2018-2023 was attributed to emerging technologies such as **IoT, Robotics, Big Data Analytics**, etc. Similarly, according to a report by Precedence Research, the global immersive technology market size is expected to grow to USD 59.6 billion by 2026 and to USD 134 billion by 2030.

Gartner expects technologies like self-supervised learning , which is an emerging AI approach that helps model understand relationships between

# FROM THE EDITOR'S DESK

---

information without the need of relying on labelled data, to be one technologies to look out for in the upcoming years. It is going to be beneficial particularly for organisations with limited data as it has the potential to expand ML algorithms. Gartner's top technological trends also highlight the democratization of technology where it predicts 55% of all emerging technology solutions to be delivered to non-traditional buyers, e.g. outside IT, which is a testimony to its growing usage. Accenture's technology vision 2023 sheds light on **cobots** (collaborative robots) and expects the global cobot market to expand to \$16.3 billion by 2028. It cites an example of a cobot 'Moxi' that was designed for hospitals and enabled healthcare workers at an hospital save **3200 hours** by looking after routine tasks, there by allowing the workers to dedicate more time to patients.

India has particularly responded to the rise of these new technologies by constituting a separate division for AI and Emerging Technologies under **Ministry of Electronics and Information Technology** which is responsible for fostering and promoting the utilization of cutting-edge technologies in the country. The government has also launched several initiatives in the domains of Block Chain and Artificial Intelligence, such as INDIAai which is a portal that provides up-to-date information, knowledge and analysis of AI related news, its ecosystem players and provides insights into Indian as well as global AI landscape. India also joined hands with 15 other countries in 2020 to form the **Global Partnership on Artificial Intelligence (GPAI)**.

**World Economic Forum (WEF)** has surveyed 803 companies, 27 industry clusters and 45 economies in it's 'Future of Jobs' report. It highlights that the Indian job market is expected to undergo a **22 percent** churn in the next 5 years with the top roles coming from Artificial Intelligence, Machine Learning and Data related jobs. The report also underscores that 59 percent companies consider emerging technologies to be main driver of job growth in India. The survey also reveals that the effect of technologies on jobs in the next 5 years is going to be a net positive.

All in all, the rapid advancement of emerging technologies is revolutionizing industries and reshaping the world we live in. From AI and

# FROM THE EDITOR'S DESK

---

Data Analytics to IoT and Machine Learning, these innovations are catalysts for disruption and unprecedented innovation. India's proactive approach in embracing these technologies, as evident from government initiatives and partnerships, demonstrates its commitment to being at the forefront of this transformation. As we navigate this dynamic landscape, embracing emerging technologies responsibly will unlock a future brimming with possibilities and opportunities for growth and progress.

We hope you have a great time reading SAMVAD!

Let's read, share and grow together!

# Index

01

Pg. No.



WeChat | 1

## ARTICLES

Neo Banking the new banking 4

Cyber Security threats in Supply chain:  
Safeguarding digital infrastructure 8

Artificial Intelligence in Medical Care:  
A Game-Changer for Healthcare 11

AI-powered customer experience and  
support using emerging technologies 14

Use of AI for resume screening and  
candidate selection 18

Artificial Intelligence in Medical Care 22

Ethical concerns and HR data analytics 27

Utilizing Generative AI to Address the  
Mental Health Crisis in India's  
Working Population 32

47



WeAchievers 36

Geo political watch 39

Team Samvad 46

Call for articles 47



## Arya Patnaik

**Co-Founder**  
**Intermind Digital Solutions**  
**MMS (1998-2000)**

**1. Can you please walk us through your journey from Welingkar Institute to Co-Founder at Intermind, India's first truly 360° Digital Marketing and Technology Agency offering services across technology, design & digital marketing?**

I co-founded Webizus Technologies in 1999 on campus at Welingkar with my MMS (systems) classmates Devendra Deshmukh and Kshitij Thakur. We were one of only a few agencies offering digital technologies at the time. Webizus eventually combined with Scribble Technologies (a UI/UX agency) and Kalptech Systems (a high-tech firm) to establish Intermind.

**2. Can you share your experiences at our college and how they contributed to your interest in emerging technologies?**

I once questioned Dr Uday Salunkhe, our director, why we don't have the internet on campus. In his trademark style, he said, "Because you haven't got

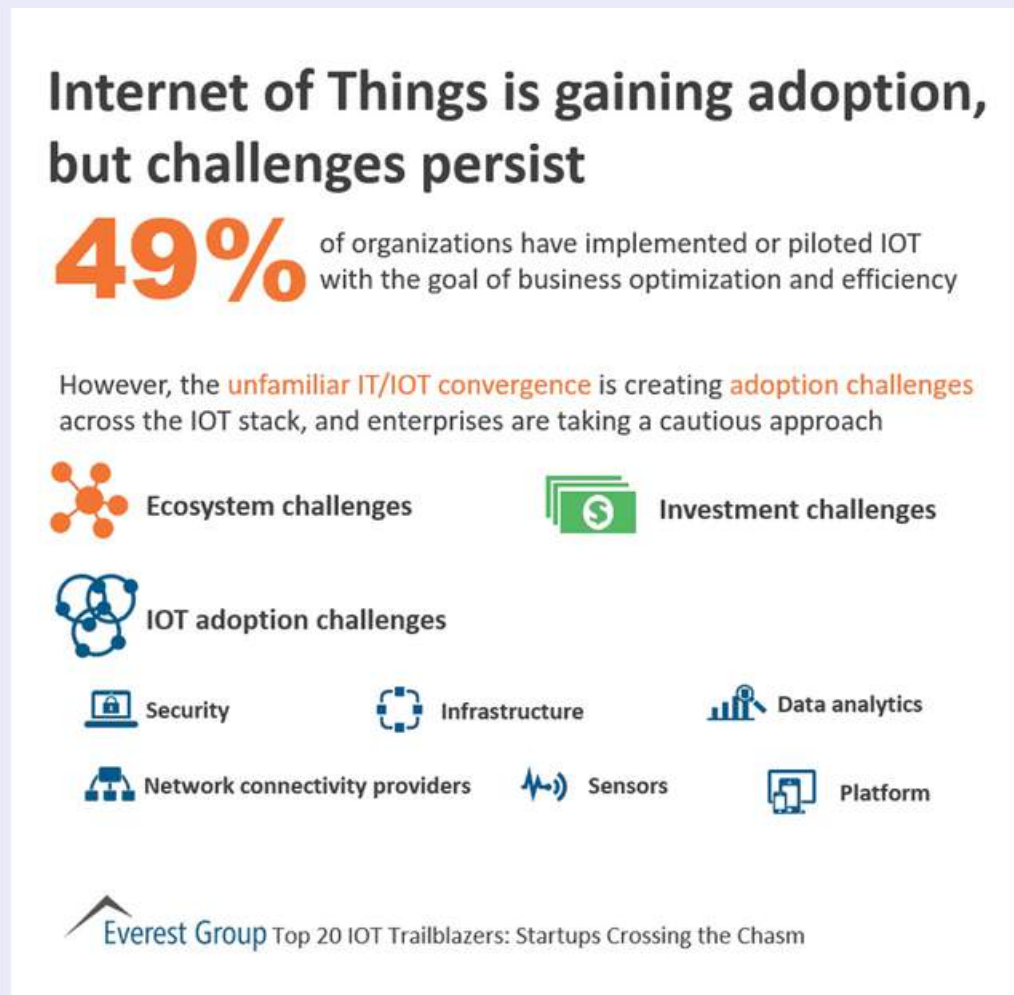
it". He assured me of his unwavering support. In 1998, Kshitij, Karthik, and I established the first Internet Committee at Welingkar and successfully obtained a "dial-up" internet connection on campus. It was a significant technological leap from the "shell" internet I was accustomed to. There was no turning back from that point on.



**3. How has technology evolved since your time at college, and what key trends do you see dominating the industry in the next decade?**

Technology evolves quickly, and 23 years is a long time! It's been an incredible two decades, from the Internet to SMAC. Unless you live in a cave, you are aware

that we have officially entered the AI decade (2023-2032). AI's potential is nearly limitless when combined with SMAC and Industry 4.0.

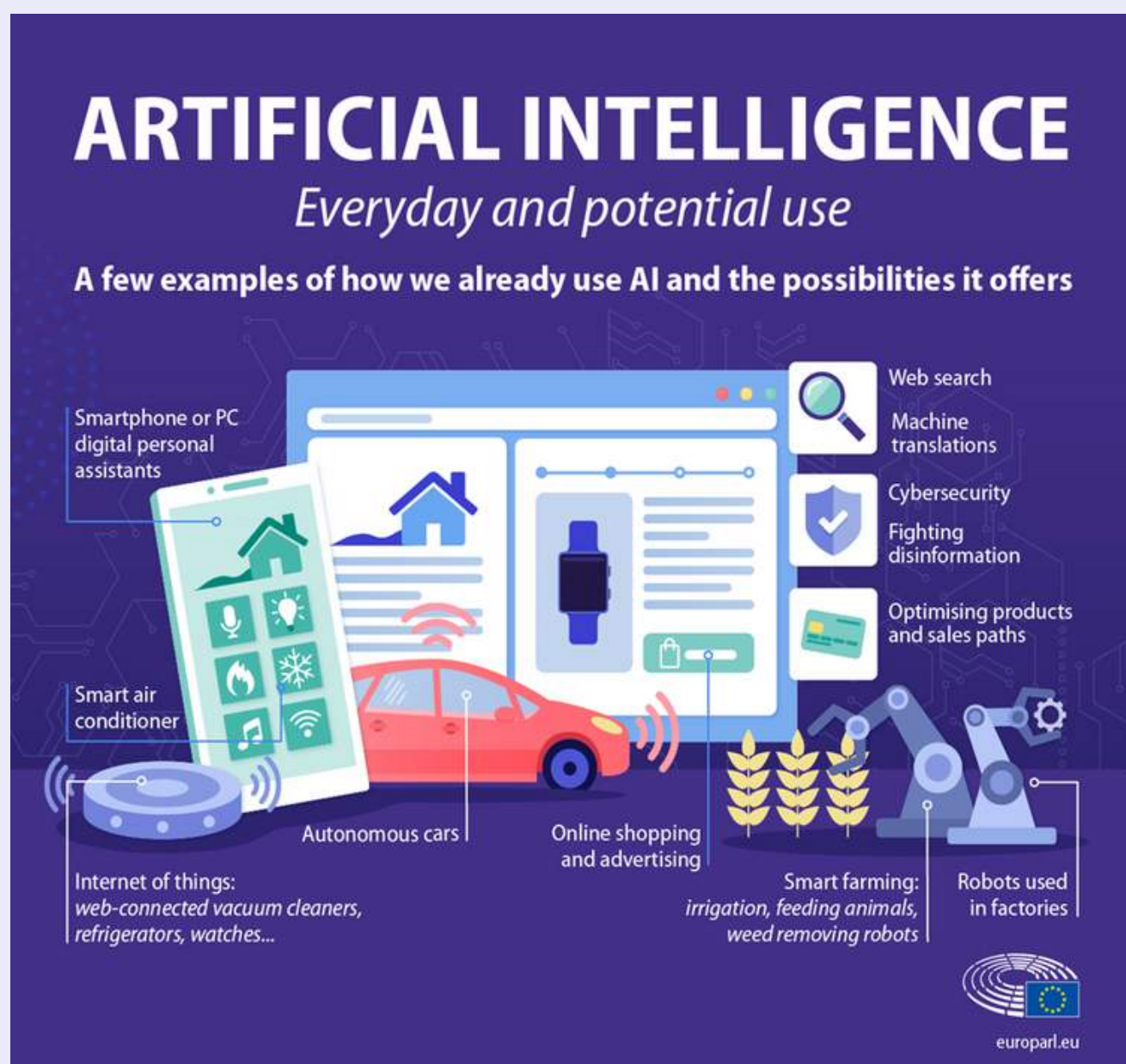


4. India's IoT market is projected to grow at a CAGR of over 25% between 2023 and 2026, with applications in smart devices, industrial automation, and smart city initiatives. How is India embracing IoT technologies, and what are the opportunities and challenges faced by IoT startups in the Indian market?

I'm especially interested in smart cities, eventually leading to a smart nation. IoT adoption in India has been gradual but is about to take off. Since we inaugurated the first smart farm in 2019, I've envisioned the sector being considered white-collar employment, with farms entirely managed remotely. Growing spinach in Roha while sitting in our air-conditioned Mumbai office was a rewarding experience!

5. How do you feel about the increasing prevalence of AI-driven or autonomous systems, such as self-driving cars and AI assistants, becoming an integral part of our daily lives? Also, how do you approach the ethical implications associated with developing and implementing new technologies?

For the time being, autonomous systems in India will be limited to warehouses and future motorways. Once the hype surrounding generative AI dies down, we'll start seeing mass adoption of some practical applications. To avoid misuse of technology, a solid legal framework on a worldwide basis is essential.



**6. Finally, what valuable advice would you like to share with the younger generation as they navigate this dynamic and rapidly evolving field?**

Once you commit to a career in high technology, you will never be able to acquire a laid-back mentality. You must stay one step ahead of the next transformation or risk losing your career or startup. On the bright side, your life will be as exciting as a Hollywood action film. Regardless of my schedule, I take a disciplined approach to keeping up with emerging technologies for one hour daily. You'll have to perform better than that when you start your job!

# Neo Banking the new banking



## Winner

**Sahil Mathur**

PGDM (Financial Management)  
Institute of Management Technology,  
Ghaziabad



### What is a Neo Bank?

A Neo Bank is a Bank that entirely exists virtually and offers Banking services through simple technological channels such as mobile applications.

The article shall attempt to cover the Present and Future trajectory and the Significance of the Neo Banking Industry in the purview of the current age of Digitalisation.

### But don't we have Payment Banks and E-wallets already?

A Neo Bank is an entirely different concept from an E-wallet however both the domain trail under the umbrella of Fintech.

E-wallets or Digital Payments Bank are entities involved in Payment processing and providing their customers with a payment processing platform and making use of the allied services of the Banking

Investment and Insurance Sector.

Whereas a Neo Bank is an entire bank that performs all core functionalities of a bank on a virtual basis. These entities are highly tech-driven financial institutions, probably the changed ratio from a Fintech firm to a Tech-fin firm where Tech has taken a major role.

A Payments Bank is a service provider in the allied and noncore activities of a bank to assist a consumer, however, a Neo bank does every function of a traditional bank just at a click of our smartphone.

### Why a new banking system at all?

During the last decade, the entire globe has witnessed an interplay of tech in every layer of human existence. With Pandemics, Rising Central Bank Rates, and Wars now impacting the nerves of Financial

Epic centres in Europe and America, changing the course of credit deployment and banking in its fullness, a radical and practical disruption in financial atoms might appear as a way ahead.

This change-maker role is being filled by the emerging Neo Banking Sector.

### **How do Neo Banks come into existence?**

Traditional Banks are subjected to extremely strict regulations and supervision from Central Banks, however, there is no standard set of regulations for Neo Banks pretty much across every country they exist in. But since A Neo bank does require some clearances and compliances to engage with consumers, Neo banks are left with 3 ways in which they can come into play.

#### **1. Front End Neo Banks**

These are the Neo Banks without a formal banking license but are backed by traditional Banks. They enjoy the benefits of regulatory clearances and work as an Independent entity while having regulatory support from a Traditional Bank. This is the most common way how maximum Neo banks have come into existence.

#### **Examples:**

- a. Digibank (Backed by DBS)
- b. Fampay (Backed by IDFC First Bank)
- c. FairMoney (Backed by the Central Bank of Nigeria)

#### **2. Digital banking Units**

These are the Digital representative arms of Traditional Banks that operate on a Virtual Banking License, they offer every service from basics to advance in a Digital Form.

Example: SBI Yono

#### **3. Full Stack**

This category includes Banks that obtain a License on their own to conduct Banking activities without establishing any physical presence. (Such facilities however are not allowed in India yet).

#### **Example:**

- a. Starling
- b. Webank
- c. Kakao



Why does Neo Banking become significant suddenly?

In an age where the USA's card economy is not the only successful noncash alternative and people across the globe have inculcated Digital Payments alongside other financial products in their life ( India

and Singapore in terms of UPI for example), we must develop systems that make use of the Increasing Digital Literacy.

With the requirement for Credit going up, it is important to channel more funds into formal lending structures to reach a demand-supply equilibrium in the credit market. The extremely tiring processes of Traditional Banking and the limitations offered due to the emphasis on physical presence result in a lot of people not being able to put money in the system even if they want to. Alongside this deposit part, even borrowers face extreme difficulty to obtain credit as per their customized needs.

Neo banks provide the ease and convenience to the extent of opening an account sitting at home through their digital KYC process, such facilities not only enhance customer experience but also result in customer acquisition. In these changing times developments must happen at pace in the fields of increasing the effectiveness, efficiency, and reach

of the Global Banking network and Neo Banks provide a multidimensional solution to this.

Who are the Customers of Such Banks?

There is a bouquet of benefits that Neo banks offer, both to the industry and to the consumer as well, however, their USP revolves around one primary domain which is "Convenience".

Since the ultimate target offering is Convenience, a major chunk of the target consumer comes from the Urban youth that is Tech Savvy belongs to a high-income group and wishes to add convenience to money management. A Major target segment is also the aspirational rural youth that is digitally aligned.

Interestingly development of Neo Banking is not only beneficial for Retail banking. If Neo Banking ecosystems are implemented to their most effective capacity, their digital presence would help Corporates to a large extent as well. Companies would then be able to extend their facilities to a larger consumer base using such platforms leveraging on ease of Credit.

For instance, Whirlpool might be able to increase sales of its washing machine if it ties up with Digibank to provide its customers with EMI payment Systems directly and digitally.

Non-financial services	<ul style="list-style-type: none"><li>• E-commerce</li><li>• Educational platform</li></ul>	<ul style="list-style-type: none"><li>• E-commerce</li><li>• Forex services</li><li>• Booking facilities for travel (hotels, flights and trains)</li></ul>	<ul style="list-style-type: none"><li>• Job search platform</li><li>• Skill enhancement platform</li></ul>	<ul style="list-style-type: none"><li>• Assisted e-commerce</li><li>• Booking facilities for travel (trains and buses)</li></ul>
	<ul style="list-style-type: none"><li>• Money transfer (UPI) and mobile recharges</li><li>• Personal finance management</li></ul>	<ul style="list-style-type: none"><li>• Money transfer (UPI), mobile recharges, bill payments (BBPS)</li><li>• Personal finance management</li></ul>	<ul style="list-style-type: none"><li>• Money transfer (DMT and AePS) and bill payments</li></ul>	<ul style="list-style-type: none"><li>• Money transfer (DMT and AePS), bill payments and recharges</li></ul>
	<ul style="list-style-type: none"><li>• Prepaid card services</li><li>• Sachet loans</li></ul>	<ul style="list-style-type: none"><li>• Savings account</li><li>• Credit</li><li>• Investment</li><li>• Insurance</li></ul>	<ul style="list-style-type: none"><li>• Savings account</li><li>• Credit on tap</li><li>• Sachet insurance</li></ul>	<ul style="list-style-type: none"><li>• Savings account</li><li>• Credit</li><li>• Micro investments</li></ul>
Customer segments				
Teenagers      Digital millennials      Blue-/grey-collar workers      Gig economy workers/freelancers				

Source: PwC analysis

A Similar model is already adopted by leading traditional banks and Companies embedded in Credit Card and Debit Card facilities, (HDFC being the most popular choice for companies in this case).

### What's the Road Ahead and is it as smooth as it seems?

The Neo Banking Market has already reached a global size of \$47.18 Billion in 2021, with Europe leading the Trend, which is understandable since European banking has been facing tough times recently, therefore a radical revolution is a must. However just behind Europe, the fastest growing markets are that of Asia Pacific, with China leading from the front, however, India is not much behind in line.



The market is expected to grow with a massive CAGR of 52.93%. With such promising numbers the dominance of Neo Banking in Day to Day life doesn't seem far!

The Road to this dream however also has certain roadblocks to it. The biggest Capital Asset that the entire Banking industry runs on is "Trust", and trusting an entirely virtual entity might not be comfortable for a large

set of people especially in the traditional consumer bases of the Asia Pacific region.

For the Neo Banks to attain mass rollout and mass acceptance, it would be important that regulators tap such banks the right way. Since now most of the Neo Banks have not yet been put under regulations by respective central banks.

Having a Bird's eye view of the current state of events, it can comfortably be said that in this fast digitizing economy Neo Banking might emerge as an excellent Product redirecting the course of global banking, but its effectiveness will be judged only on its meter to obtain consumer trust and regulators blessings.

### References

1. SkyQuestt. (2023). Global neo bank market insights, period (2023-2030). <https://www.skyquestt.com/report/neo-bank-market>
2. Razorpay. (2023, March 8). What is neobank? Razorpay Blog. <https://razorpay.com/blog/business-banking/what-is-a-neobank/>
3. PwC India. (2022, September). The evolution of neobanks in India. <https://www.pwc.in/assets/pdfs/consulting/financial-services/fintech/publications/the-evolution-of-neobanks-in-india.pdf>

# Cybersecurity threats in supply chain: safeguarding digital infrastructure



## Runner Up-1

**Tanya Bakshi**

**MBA**

**Symbiosis Institute of Management  
Studies, Pune**



We intuitively know why we should switch off lights and fans, lock our doors and windows when we leave the house, and add some sort of password protection to our phones. But there are lots of digital entrances that we leave open all the time, such as Wi-Fi and our data connection. It is more convenient, so the benefits generally outweigh the negatives. But it is not the same with Bluetooth. It is the most extensively used short-range wireless technology standard that is used for exchanging data between fixed and mobile devices over short distances and building personal area networks. Today, 10 billion devices use Bluetooth, which is even more than the number of devices using WiFi.

There is an attack vector known as Blueborne, which travels through the air and attacks the expanding kingdom of IOT devices, intelligent home devices, smartphones, and laptops, to name a few, through Bluetooth by leveraging it and taking

full control of the target device without even being paired with the device or even being set on discoverable mode and disconnected from the internet. It is compatible with all Bluetooth-enabled devices and software, which allows a hacker to take over our device without even being able to detect it. Also, there is less awareness about such attacks, giving the hacker an edge and a broader market to target. The hacker goes about the process by first locating active Bluetooth connections near him. Devices can even be identified with the "discoverable" mode set to off. Next, the hacker acquires the device's MAC address, which recognizes that specific device in a unique manner. After which, the hacker goes through the device, decides which operating system his victim is using, and then attacks it. After he has taken control of the device, he can secretly listen to and have access to direct

communication that the victim is a part of without their noticing it. The hacker can also make a fake connection with the parties and send messages between them to mislead them into thinking they are talking to each other when the entire communication is being controlled and accessed by the hacker.

At a personal level, you can take a few steps to keep yourself safe from these attacks. You should Disable Bluetooth when not in use, update your phone with the latest security update, enable automatic updates, download all security applications on your machine, Use an updated anti-virus as software, and Don't share any confidential information over Bluetooth as it can be stolen.

Another high-profile cyberattack seen in the supply chain is Meltdown and Spectre. They are the short names for the three vulnerabilities: Where Variants 1 and 2 are Spectre and Variant 3 is Meltdown. Variant 1: bounds check bypass; Variant 2: branch target injection Variant 3: rogue data cache load.

Spectre is a vulnerability that allows for arbitrary locations in the assigned memory of a program to be accessed. Meltdown is a vulnerability that allows a process to read all the memory in each system. They allow the virus to avoid security

protections present in nearly every recent device with a CPU—not just computers and mobile phones, but also Internet of Things (IoT) devices like smart security systems, appliances, and machines. Using this it is possible to read protected system memory, gaining access to passwords, encryption keys, and other sensitive information. They rely on some kind of design error in modern CPUs. The most shocking fact about these vulnerabilities is that they did not arise from any system glitches or physical CPU problems. Instead, they arose from the organization of the processors themselves—that is, the millions of transistors that work together to execute operations—and radically changed our interpretation of our security systems and forced us to pay more heed to the computer organization of our system.

These days, the most relevant way to deal with this situation is to not store all the memory in one place. Imagine a military organization where some officers must keep one of their missions a secret and not tell the rest of the officers. One way is that officers work away from each other; that is essentially what happens with "Cache Allocation Technology" (CAT). This might not work as one officer can easily come to know the other officers' missions if they overhear them. Another approach is to build partitions to divide the office into distinct areas

to ensure that everyone only concentrates on their respective missions. (This point of view is called "secure way partitioning;" "officers," are called "protection domains.") I would like to conclude by saying that updates are being released that will help reduce these issues, provided we are not using unsupported devices equipped with the latest patches. We should aim to make our systems as free of vulnerabilities and attacks as possible through continuous testing, authentication safeguards, and conforming to best programming practices.

### References:

1.<https://www.microchip.com/en-us/products/wireless-connectivity/software-vulnerability-response/blueborne-attack-vector>

2.<https://www.securityweek.com/one-year-later-over-2-billion-devices-still-exposed-blueborne-attacks>

3.<https://sps.honeywell.com/us/en/support/blog/productivity/how-cyber-attacks-are-spreading-in-the-supply-chain>

4.<https://tweaklibrary.com/what-is-blueborne-attack-and-how-to-stay-protected/>

5.<https://www.synopsys.com/blogs/software-security/blueborne-bluetooth-flaws/>

6.<https://www.iotworldtoday.com/security/how-to-protect-against-blueborne-attack-vector-blueborne>

blueborne-attack-vector-blueborne

6.<https://www.iotworldtoday.com/security/how-to-protect-against-bluetooth-attack-vector-blueborne>

7.<https://www.armis.com/research/blueborne/>

8.<https://www.geeksforgeeks.org/blueborne-attack/>

9.<https://www.wonderopolis.org/wonder/what-is-bluetooth>

10.<https://en.wikipedia.org/wiki/Bluetooth>

11. <https://www.automation.com/en-us/articles/july-2022/why-turn-off-bluetooth-when-not-using>

# Artificial Intelligence in Medical Care: A Game-Changer for Healthcare



## Runner up-2

Manikanta S Jayana &

Abhishek Kumar

MBA

Indian Institute of Management,  
Ranchi



### Abstract:

This article delves into the incredible impact of Artificial Intelligence (AI) in the medical field, exploring its numerous applications in medical imaging, diagnostics, personalized treatment plans, drug discovery, virtual health assistants, remote patient monitoring, predictive analytics, robotics and surgery, and administrative efficiency. We acknowledge the transformative potential of AI in healthcare while also recognizing the challenges that require our attention. Through comprehensive research and analysis, we aim to inform and inspire readers about the promising future of AI in the medical domain.

### Possible Applications of AI in Medical Care

#### Medical Imaging and Diagnostics

AI has truly revolutionized medical imaging and diagnostics, taking accuracy to new heights. Deep learning algorithms have proven their mettle in analyzing complex medical images, such as X-rays, MRIs, and CT scans. These AI-powered systems possess remarkable precision in detecting and classifying abnormalities, often surpassing human capabilities. For instance, a study by (Shen, 2017) showcased an AI algorithm outperforming radiologists in identifying common diseases on chest X-rays. This heightened accuracy has profound implications for patient care, enabling early disease detection, timely interventions, and improved treatment outcomes. By reducing the risk of misdiagnosis, AI-powered diagnostic tools also minimize unnecessary medical procedures and associated costs.

#### Drug Discovery and Development

AI-driven drug discovery platforms are fast-tracking the traditionally lengthy and costly drug development process. By analyzing extensive datasets containing biological and chemical information, AI algorithms predict the biological activity of molecules, identify potential drug candidates, and optimize drug design. (Rajkomar, 2018)

This AI-powered approach expedites the identification of promising compounds and empowers researchers to explore a wider range of potential therapeutics. Leveraging AI's predictive capabilities, pharmaceutical companies can focus their efforts on the most promising drug candidates, potentially leading to groundbreaking treatments for various diseases.

### **Virtual Health Assistants**

AI-driven virtual health assistants and chatbots are revolutionizing patient engagement and support. These interactive tools provide patients with real-time access to medical information, address health-related queries, and offer personalized recommendations based on individual health data (Adly, 2019). Virtual health assistants play a pivotal role in patient education and adherence to treatment plans. Offering reminders for medication intake, upcoming

appointments, and lifestyle modifications, these AI-powered tools empower patients to take a proactive approach to their well-being, leading to better health outcomes.

### **Natural Language Processing (NLP)**

The sheer volume of medical literature and clinical data poses a challenge for healthcare professionals to keep up with the latest research and discoveries. Here's where AI's natural language processing capabilities shine, analysing and extracting relevant information from medical texts, research papers, and clinical notes (Miotto, 2018). NLP assists in evidence-based decision-making, swiftly identifying relevant studies and findings. By synthesizing this information, AI empowers healthcare providers to stay informed about the latest treatment guidelines, research outcomes, and medical advancements, ultimately elevating the quality of patient care.

### **Remote Patient Monitoring**

AI's integration with wearable devices and IoT technologies has ushered in continuous remote patient monitoring (Rau, 2019). Collecting real-time health data, such as heart rate, blood pressure, and glucose levels, wearable devices transmit vital information to healthcare providers for analysis.

This real-time monitoring is particularly advantageous for managing chronic conditions, such as diabetes, hypertension, and heart disease. Healthcare professionals receive alerts in case of any concerning changes in a patient's health, enabling timely interventions and personalized care plans.

### **Predictive Analytics**

Predictive analytics is another vital application of AI in healthcare. By analyzing historical patient data, AI algorithms identify patterns and trends that predict disease progression or patient deterioration (Ngiam). This predictive capability is invaluable for identifying high-risk patients who may benefit from early interventions or more intensive monitoring. By anticipating potential health issues, healthcare providers take proactive measures, reducing hospital readmissions and improving patient outcomes.

### **Robotics and Surgery**

AI-powered robotics have ushered in a new era in surgical procedures. Robotic systems equipped with AI algorithms offer surgeons enhanced precision and dexterity, making surgeries less invasive and more efficient (Hamdi, 2020). Robot-assisted surgeries bring numerous benefits, including reduced blood loss, smaller incisions, shorter hospital stays, and faster recovery

times. AI-driven robotics prove particularly advantageous in complex procedures, such as cardiac surgeries and neurosurgery, where precision is critical.

### **References**

Adly, A. S. (2019). Future prospects of artificial intelligence in medicine. . Journal of Family Medicine and Primary Care, 8(11), 3482.

Hamdi, M. S. (2020). The use of robotics in surgery: a review. Open Access Macedonian . Journal of Medical Sciences, 8(T2), 17-22.

Miotto, R. W. (2018). Deep learning for healthcare: review, opportunities and challenges. Briefings in Bioinformatics, 19(6), 1236-1246.

Ngiam, K. Y. (n.d.). Big data and machine learning algorithms for health-care delivery. The Lancet Oncology, 40(5), e262-e273.

Rajkomar, A. O. (2018). Scalable and accurate deep learning with electronic health records. npj Digital Medicine, 1(1), 1-10.

Rau, P. L. (2019). Artificial intelligence for healthcare: deep learning approaches in diagnosis and detection. . Journal of Medical and Biological Engineering, 39(2), 191-196.

Shen, D. W. (2017). Deep learning in medical image analysis. . Annual Review of Biomedical Engineering, 19, 221-248.

# AI-powered customer experience and support using emerging technologies



## National Finalist

Sonal Sinha

MBA

IIM, Sirmaur



In today's business world, companies need to be customer-centric. For businesses to sustain in a competitive environment, it should be market oriented which means who can understand and speak the consumer language.

Previously we have seen product-oriented who focus on the product. The Company thinks that if the product is perfect, it will make a profit, and customers will buy it. Let's discuss an example. In 1913, Henry Ford established the assembly line, transforming the automobile sector and people's lives. Ford's innovation enabled him to manufacture high-quality and affordable cars. In 1916, the first car he offered was the Model T for \$360, and he sold every car he had created. Only then were automobiles assembled by hand, which was expensive due to which most people find it difficult to afford a car. When Ford

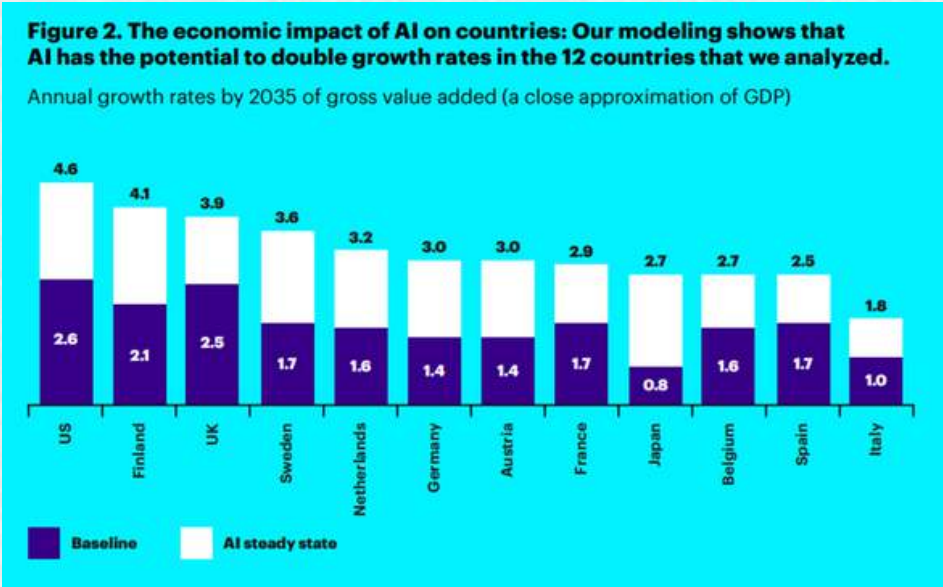
introduced the Model T, demand exceeded supply because buyers early bought the first affordable automobiles ever made. Ford's dominance of the automobile market could have been more lived. In 1923, Alfred Sloan became the leader of General Motors. This Company included car makers that had not been profitable because they produced assorted models without any research about the customer needs or whether they were meeting buyers' needs. While Ford focused only on creating reasonably priced cars, ignoring customers' preferences.

We are living in the era of digital technologies. We know that companies are facing a constant influx of digital technologies: social, mobile, analytics, cloud, and the internet of things, all represented aptly by the acronym SMACIT. Continued possession of future technologies like Digital Twin, Bio-

metrics, robotics, artificial intelligence, blockchain, 3D printing, and edge computing can disrupt your business.

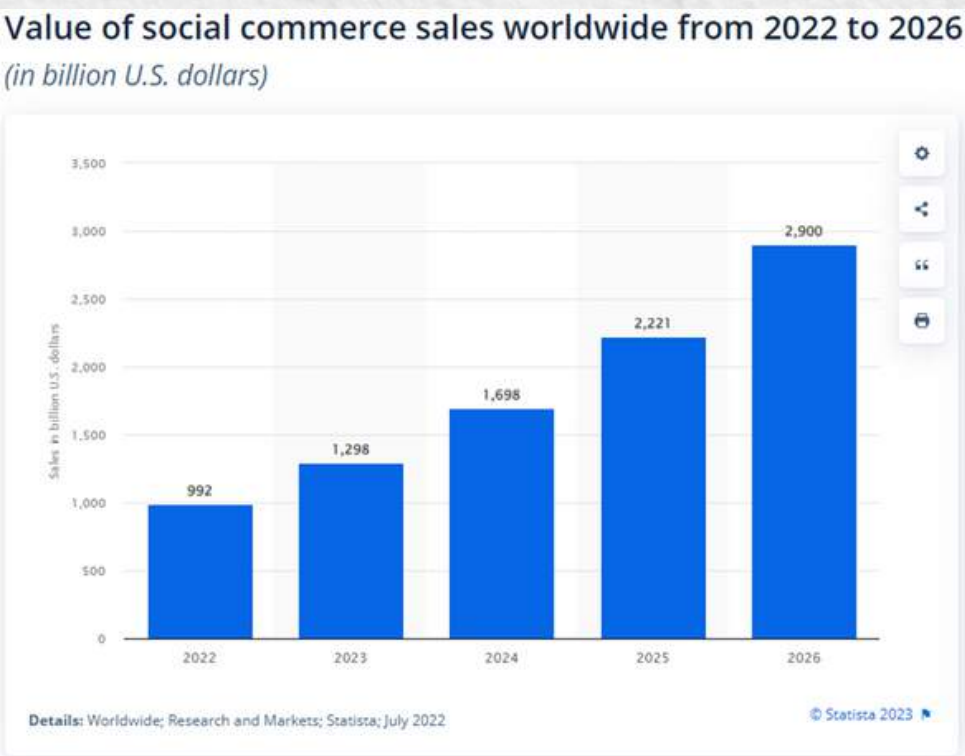
Ubiquitous data, unlimited connectivity, and massive processing power are powerful digital technology capabilities that become game-changing for businesses. CEOs of large companies working towards upgrading information technology (IT) and launching new digital business initiatives were among the top priorities. Digital transformation spending in the US has forecast growth from \$160 billion in 2018 to \$490 billion in 2025. About one-third of this spending went to big data analytics, another third to cloud computing, and the rest to mobile and social media.

It has become difficult to cater to customer needs due to fast-changing technology. People want real-time services and solutions. Research conducted by McKinsey in 2020 estimates that AI technologies have the potential to give up to \$1 trillion of additional value. Therefore, the Company adapts AI solutions so that businesses can improve the customer experience.



Leaders in AI-driven customer services are learning, investing, and improving through five levels of maturity. In level one, all the work is manual, paper-based, and requires human touch. In level five—the most advanced maturity stage—companies deliver proactive, automated creation, service-led engagement, which lets them manage over 95 per cent of their service interactions via AI and digital channels. For instance, electronic statements replaced paper in banks, automated teller machines and mobile applications reduced the need for retail branches, and security teams were using machine learning algorithms to detect fraudulent transactions.

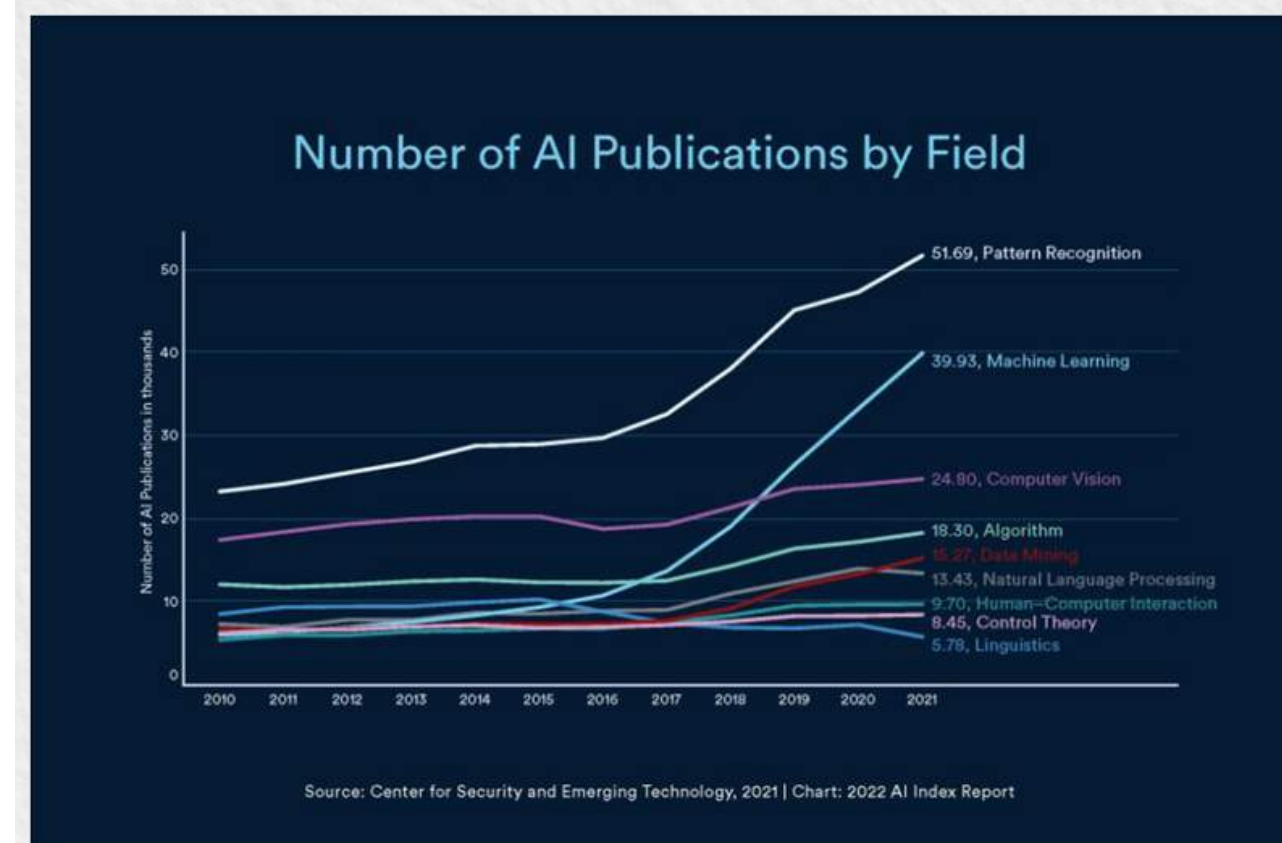
Companies adopted these emerging technologies to collect and store customer data. The data collection is followed by data mining to gain meaning from the data collected. The Company could identify customers' preferences through data mining, such as discounts, particular products, regional trends, etc. It also helped the Company to convert interested consumers into their customers.



Today users have become social media and smartphones addictive. Facebook and Google had become a "digital duopoly." The report published by The Wall Street Journal reported almost half of global spending on digital advertising is accounted for by Facebook and Google. Facebook used three types of information to drive its advertising model:

- 1.How users consume services on the Facebook application.
- 2.Information shared by the advertisers and development partners.
- 3.Business websites send information to Facebook from online or offline activities.

Together with Company's algorithm, this allowed Facebook to deliver targeted- and therefore relevant - ads to end users.



Using Artificial intelligence as tech companies developed advanced algorithms capable of leveraging user data to generate personalized content and then dynamically respond in real-time, it became clear that the platforms had a hand in content curation and exposure. A

Chinese online company Tmall Smart Selection incorporated AI-driven algorithms backed by deep learning and natural language processing to recommend demand for particular products in the market to shoppers; it then communicates consumer interest to retailers so that they can increase inventory to keep up with demand.

AI-powered chatbots are one of the emerging technologies which can understand more than 90% of customers' inquiries and most of the Company widely use; they did most of the talking during its "Singles' Day" on November 11, 2020, when Alibaba's online transactions exceeded \$74 billion. After-sales service was conducted primarily online regarding delivery, returns, and warranty. According to recent statistics, 94% of online service at Alibaba is AI-enabled, earning customer satisfaction ratings 3% higher than the service delivered by staffers.

With the ubiquity of big data and artificial intelligence, using customers' buying data and rating/reviews, many e-commerce firms trended towards prediction-based recommendations and promotion. The process benefited buyers and sellers and took advantage of the social graph of relationships connecting potential buyers. Consumers could make more informed decisions using

feedback from others, while companies could attract more buyers through their recommendations.

Customer experience is one of the most critical factors in the digital economy. AI, and other emerging technologies help businesses to access their target customers. This helps create brand awareness and significantly increases brand loyalty. If the Company cannot adapt to the external environment change, it will not gain a competitive advantage. Ultimately Company is not able to survive.

#### References:

1. McKinsey. (n.d.). AI customer service for higher customer engagement.

<https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/ai-customer-service-for-higher-customer-engagement>

2. Harvard Business Review. (n.d.). Customer Experience in the Age of AI. <https://hbr.org/insight-center/customer-experience-in-the-age-of-ai>

3. Accenture. (n.d.). AI Delivering Improved Customer Experience. <https://www.accenture.com/us-en/insights/technology/ai-delivering-improved-customer-experience>

4. Stanford University. (n.d.). The

State of AI in 9 Charts. <https://hai.stanford.edu/blog/state-ai-9-charts>

5. Analytics Insight. (n.d.). AI-Powered Chatbots: Enhancing Customer Experience and Support. <https://www.analyticsinsight.net/ai-powered-chatbots-enhancing-customer-experience-and-support/>

6. Statista. (n.d.). The Statistics Portal for Market Data, Market Research and Market Studies. <https://www.statista.com/>

# Use of AI for resume screening and candidate selection



## National Finalist

Deeksha Khatwani

PGP

Indian Institute of Management,  
LUCKNOW



An article on AI has to start with the mention of ChatGPT and Bard. Yes, the same tools that came into our lives a few months ago. Hasn't it become difficult to imagine our lives without these already? That's the magic of AI- it makes life super easy.

So, you must already be bombarded with a lot of information about AI. But for those of you living under a rock, here it goes- AI is the science and engineering of making machines intelligent. And by intelligent, I mean developing human-like behavioural and decision-making capabilities. Sounds interesting right? Because it is.

It is so embedded in our daily lives that we may not even notice when we are using it. According to a survey by Statista, the global AI market is estimated to reach \$1.5 trillion by 2030.

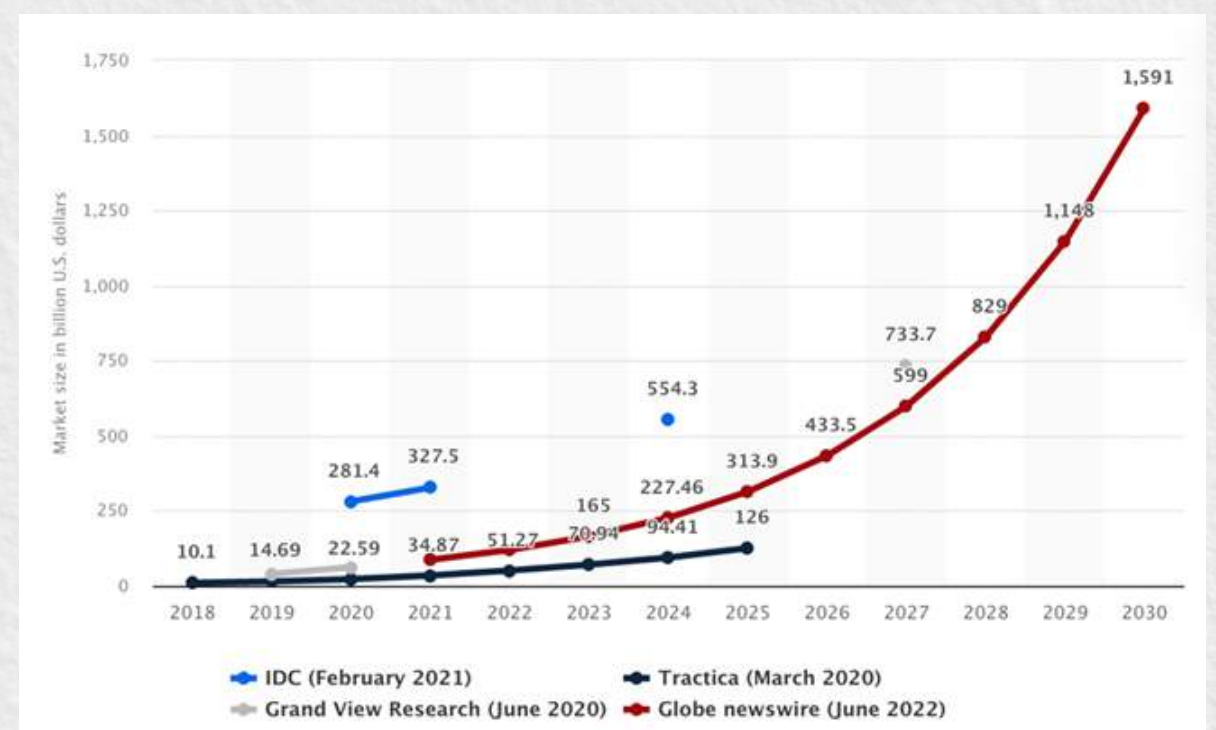


Fig 1: AI market size and revenue comparison worldwide[i]

From watching movies on Netflix suggested by AI recommendation system to using face recognition to unlock our phones, AI has found a place within all spheres of our daily lives.

But that's not it. It is being increasingly used in various industry domains as well. Be it manufacturing, HR, operations, or marketing, AI has got you covered.

Some might say AI is of little use for a domain like Human Resources which is all about humans and inculcates building relationships, emotional intelligence, and taking

decisions. That’s where they are wrong. AI proves useful across a wide range of HR activities including candidate sourcing, assessment, onboarding activities, personalized training, payroll optimization, succession planning, employee sentiment analysis, and workforce scheduling.

Characteristic	Human resources	Manufacturing	Marketing & sales	Product/service development	Risk
All industries	11%	8%	5%	10%	19%
Business, legal, and professional services	11%	10%	9%	8%	16%
Consumer goods/retail	14%	4%	3%	4%	15%
Financial services	1%	8%	7%	31%	17%
Healthcare/pharma	15%	7%	2%	4%	22%
High tech/telecom	6%	6%	4%	7%	38%

Fig 2: AI adoption worldwide by industry functions[i]

decisions. That’s where they are wrong. AI proves useful across a wide range of HR activities including candidate sourcing, assessment, onboarding activities, personalized training, payroll optimization, succession planning, employee sentiment analysis, and workforce scheduling.

Let us now discuss activities pertaining to recruitment-specifically resume screening and candidate selection.

As we know, employees are the most valuable asset for a company and thus, the process of recruitment becomes very critical. It becomes necessary to attract the right talent, ensure person-job fit, perform skill gap analysis, and select the right people for the right job. As per the U.S. Department of Labor, a bad hire

costs roughly 30% of the employee's first-year salary.

Imagine a scenario where a company is visiting XYZ Institute of Management which has a batch size of 550. The firm will be involved in placement processes for other colleges as well simultaneously which might have a similar batch scale. Now screening resumes manually one by one can be problematic for the following reasons-

- Time taking: Going through such a large number of resumes might consume a lot of time and resources. If a person takes 5 minutes per resume, applications to one college alone will consume around 45 man-hours. Imagine doing the same activity for multiple colleges in parallel! One of the top priorities for recruiters in 2021 included improving the time to hire.
- Labour intensive and costly: The company will have to assign the responsibility of resume screening to a large number of people. These employees might have another task of higher priority thus, opportunity cost comes into the picture. Even if it decides to outsource the activity to a 3rd party, it will be paying for the resources employed.
- Biased screening: There can be multitudes of biases that might affect a person’s judgement. A male manager might reject a

resume solely because he stereotypes women as being inefficient. According to India Discrimination Report by Oxfam India (2022), gender-based discrimination accounts for around a 98% gap in the employment rate between men and women in urban areas. Another study by HBR in India demonstrates that Muslim women encounter discrimination during recruitment. In the research, 2 identical resumes were created of a Hindu and a Muslim woman of similar skillset and were applied to similar roles. The results were shocking. The Hindu woman gathered more positive responses than her Muslim counterpart by a whopping 101%.[ii] Many such biases might come into effect and deny opportunities to potential candidates.

AI can solve these problems solely due to the non-involvement of humans. Resume screening tools can extract relevant keywords from resumes and thus, screen out irrelevant profiles. Consider for instance a product management company, which requires candidates to possess skillsets pertaining to big data, cloud, and machine learning. It can train the tool on relevant profiles basis keywords and process a large number of resumes within minutes without any bias and freeing up employees to do more important tasks.

Once the resume screening is done, the company proceeds with candidate selection which might involve the following-

- **Personality/Psychometry tests:** To select people with the right traits (as per Trait Theory), evaluate culture match and assess person-job fit, companies are increasingly using psychometry tests. Around 80% of Fortune 500 companies utilize these to select the right candidates. They can uncover hidden skills of individuals that are not easily depicted by qualifications but might be important for a role. AI can help create such tests tailored to a particular role and organization.
- **Interviews:** An important activity that evaluates a candidate's skills, personality, and thought process is the interview. Using AI, online video assessments can be created which screen candidates basis some tasks and questions, and analyse verbal and non-verbal cues. It makes the interview scheduling easier and more convenient. If required, managers can go through the video interview later as per their availability and decide on the next steps.

Besides this, AI can also help integrate the end-to-end process creating a customised roadmap for the candidate.

Unilever- a leading FMCG firm utilises AI in recruitment and has been able to reduce hiring time by 90% and achieve cost savings of £1M.

However, there is no rose without a thorn. There are certain drawbacks that the companies should be cautious about-

- **Algorithmic bias:** The model is only as fair as the dataset used during the model training. For instance, if resumes of current employees are used for training, the model will only select those candidates that are similar in skillset to its employees. Thus, a large dataset should be used for training with profiles from diverse backgrounds, qualifications, and work experience. Amazon's recruitment tool that discriminated against women is a famous example of algorithmic bias.
- **Lack of intuition:** Humans possess intuitive ability and tacit knowledge which cannot be codified and transferred to an AI model. This proves useful in recruitment where decisions should be based not just on data but also on gut feelings and experience. This helps to identify candidates who might not have a strong pedigree but show potential and possess other traits that are fit for the job and organization.

- **Soft skills evaluation:** There are certain intangible qualities like empathy, leadership, presence of mind, etc. that are difficult to define and code. AI lags on these aspects and can make a biased judgement.

In conclusion, AI is the future.

If you are planning to use it, integrate it with human experience and judgement.

If not, you are falling behind my friend!

# Artificial Intelligence in Medical Care



## National Finalist

Rahul Kumar and Shreya

Kumari

MBA (Marketing)

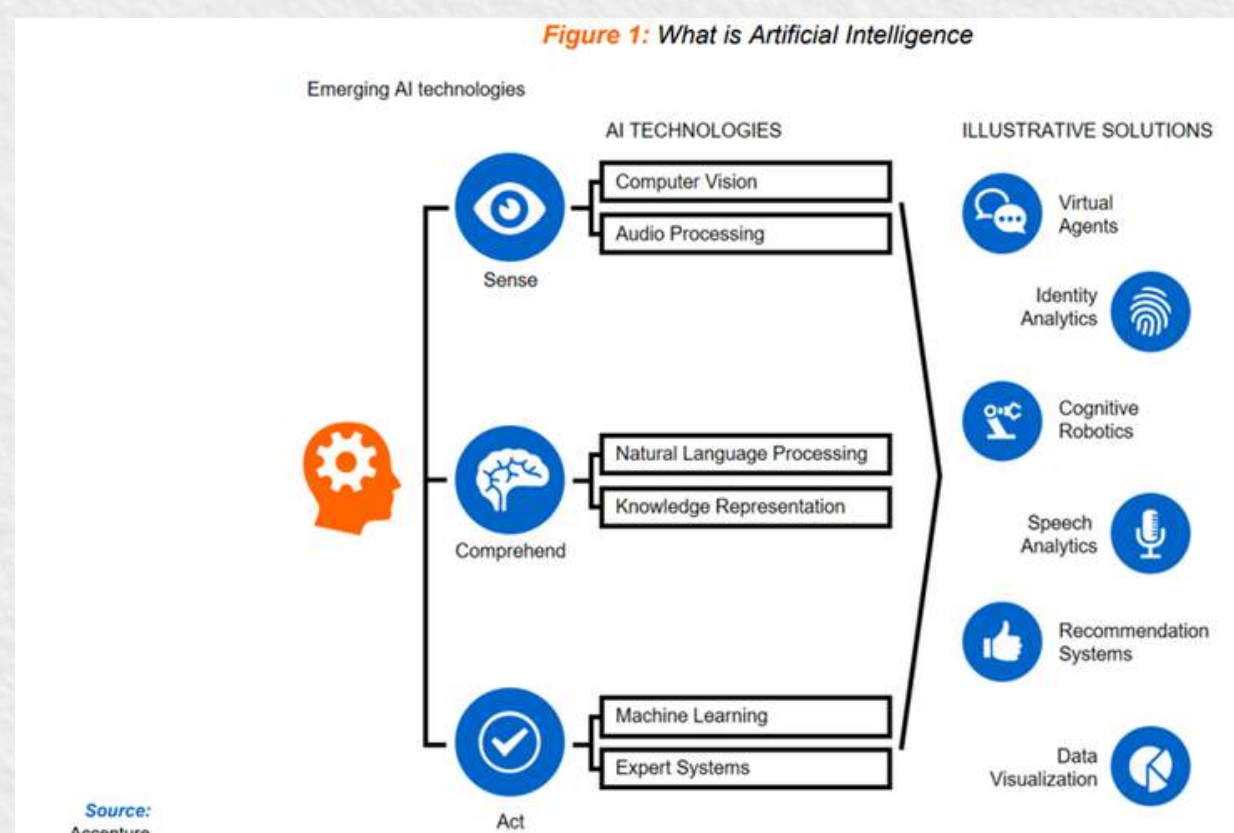
Symbiosis Institute of Management  
Studies, Pune



### Artificial Intelligence (Introduction):

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition, and machine vision. For example, Alexa and Siri are applications powered by AI. They rely on NLP and ML, two subsets of AI, to improve performance over time.

### Emerging AI Technologies:



### Introduction to AI in Healthcare:

AI is being used to develop accurate and effective technologies in fields like radiography and chronic diseases like cancer that will help treat people with these conditions and, ideally, lead to a cure. Compared to conventional approaches to analytics and clinical decision-making, AI has significant advantages. As they have the chance to comprehend training data, AI algorithms improve system accuracy. This further enables people to get previously unattainable insights into treatment variability, care procedures, diagnostics, and patient outcomes.

AI for health is divided into subtopics:

- **Perceptual AI:** Perceptual AI perceives the disease.
- **Intervention AI:** Intervention AI decides how the patient should be treated according to their

diseases.

### **Role of AI in healthcare:**

1. **Accurate Cancer Diagnosis:** Pathologists can make precise diagnosis thanks to AI tools in the healthcare industry. It offers a variety of novel ways for individualized medical therapy and decreases mistakes made during the cancer diagnostic procedure. The majority of cancer patients may be treated or cured at an early stage before it becomes deadly with improved cancer detection accuracy, potentially saving many lives.

2. **Early diagnosis of fatal blood diseases:** AI has a significant impact on the early detection of potentially deadly blood-related disorders. Doctors can now screen for dangerous elements and germs in blood samples at a far faster rate than they could manually with the use of AI-enhanced microscopes. Artificial intelligence (AI) enabled the robots to learn to recognize these germs in the blood and predict their existence in fresh samples with an accuracy of 95%, drastically lowering the number of fatalities.

3. **Customer service chatbots:** Patients can ask questions about appointments, bill payments, and other topics by employing chatbots that have been constructed using

technologies like natural language processing (NLP). Additionally, chatbots interact with patients to discuss their ailments and symptoms, which eases the burden on medical staff.

Furthermore, chatbots help patients by providing the necessary solutions, freeing up healthcare professionals to concentrate on other pressing responsibilities. This healthcare system promises improved outcomes while also involving patients and providing them with cutting-edge care.

4. **Virtual health assistants:** Virtual health assistants are responsible for a number of things, including responding to the queries of routine patients via calls and emails, managing the medical information of the patients and covering sensitive data, scheduling appointments with doctors, sending follow-ups and clinical appointment reminders to the patients, etc. It is among the most useful AI applications in healthcare that offer a personalised experience to patients in terms of managing their health and getting rid of their queries. It reduces the frequency of visits to hospitals, benefiting both patients and healthcare experts.

5. **Treatment of rare diseases:** BERG is an AI-based clinical-stage biotech platform that works on mapping diseases to speed up the finding and creation of advanced breakthrough

medicines and vaccines, changing the approach to healthcare. It uses research and development (R&D), along with interrogative biology, that allows medical professionals to create robust products for patients fighting rare diseases. BERG uses Artificial Intelligence to tie up the links between human body chemicals that were not known earlier.

6. Targeted treatment: With the help of technologies such as Deep Learning and AI, Benevolent AI became capable of providing the correct treatment to the required patients at the right time, resulting in achieving a better target selection of patients and offering insights.

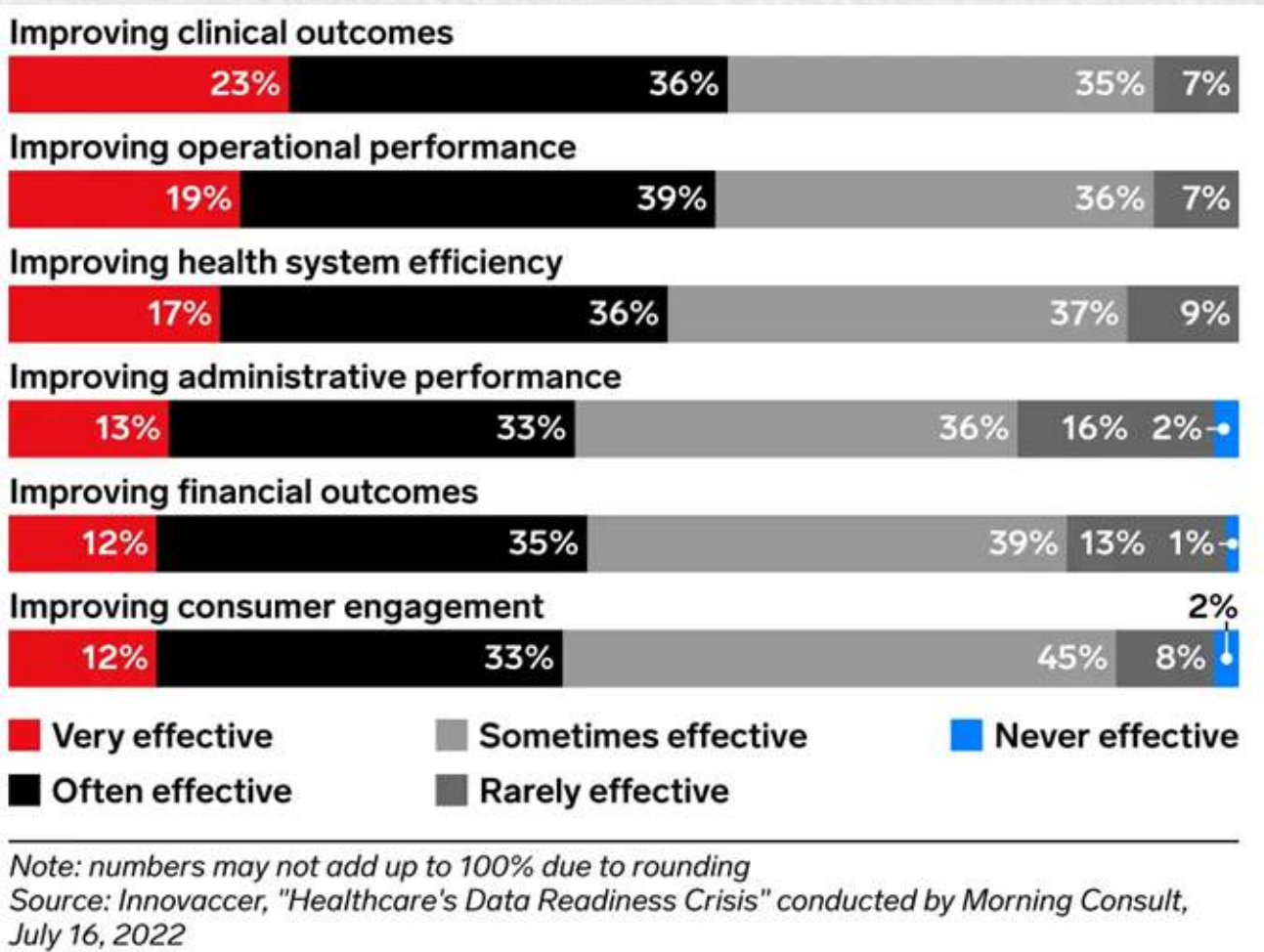
7. Management of medical records: Healthcare is among the next Big Data frontiers that need to be tamed. Data Science in healthcare has made several healthcare organizations turn to AI to stop the haemorrhaging (loss) of data. AI allows them to break down the data and connect the required data that earlier took years for processing.

8. Fraud detection: While there are several patients searching for effective medical services that save cost, there is also an exponential rise in the rate of fraud cases. This has made most medical organizations and patients suffer huge damage. With the help of AI-based solutions, these fraud attempts have been

reduced massively as these tools allow elaborate navigation through the processes and detect fraud.

9. Development of new medicines: The unique benefit of Artificial Intelligence technology allows healthcare professionals to scan pre-existing medicines and use them to redesign medication in a way that allows them to fight against specific diseases. This makes it cheaper to develop new drugs.

10. Improved healthcare access: Artificial Intelligence has led to the development of several medical software that offers interactive and customized healthcare services like anytime appointments with doctors. The patients have better and improved access to hospitals when required, and the AI chatbots help them further.



11. Clinical trial participation: In clinical trials, a large amount of data needs to be collected and organized to get the right theory for a particular disease and its treatment. With the help of AI applications, hospitals become capable of

facilitating a result-driven approach to the respective clinical trials. AI platforms have assisted researchers to find the right candidates to test developmental drugs for various diseases and disorders.

FIGURE 1  
The traditional approach to clinical development is a lengthy process with only 10 per cent success rate

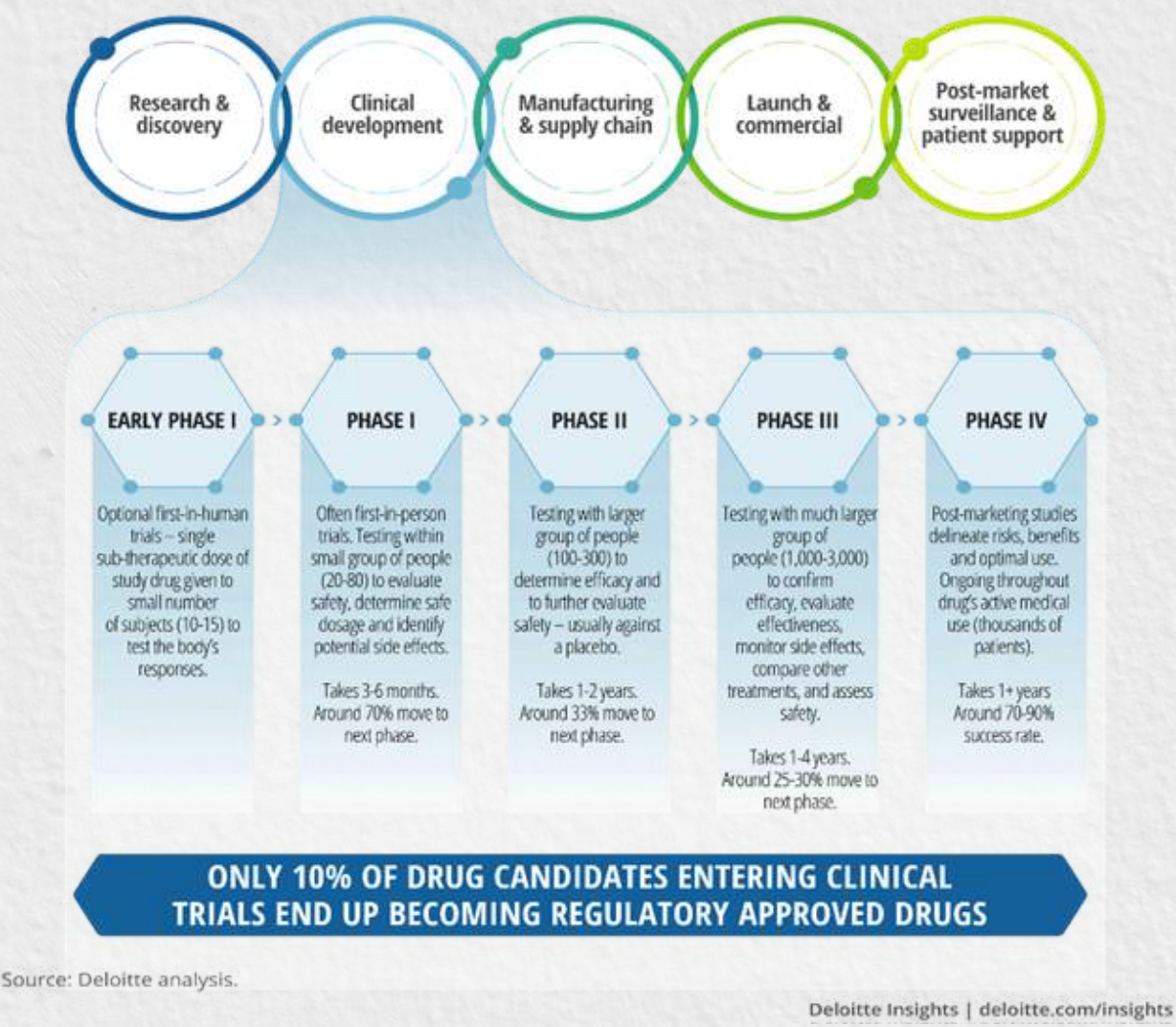
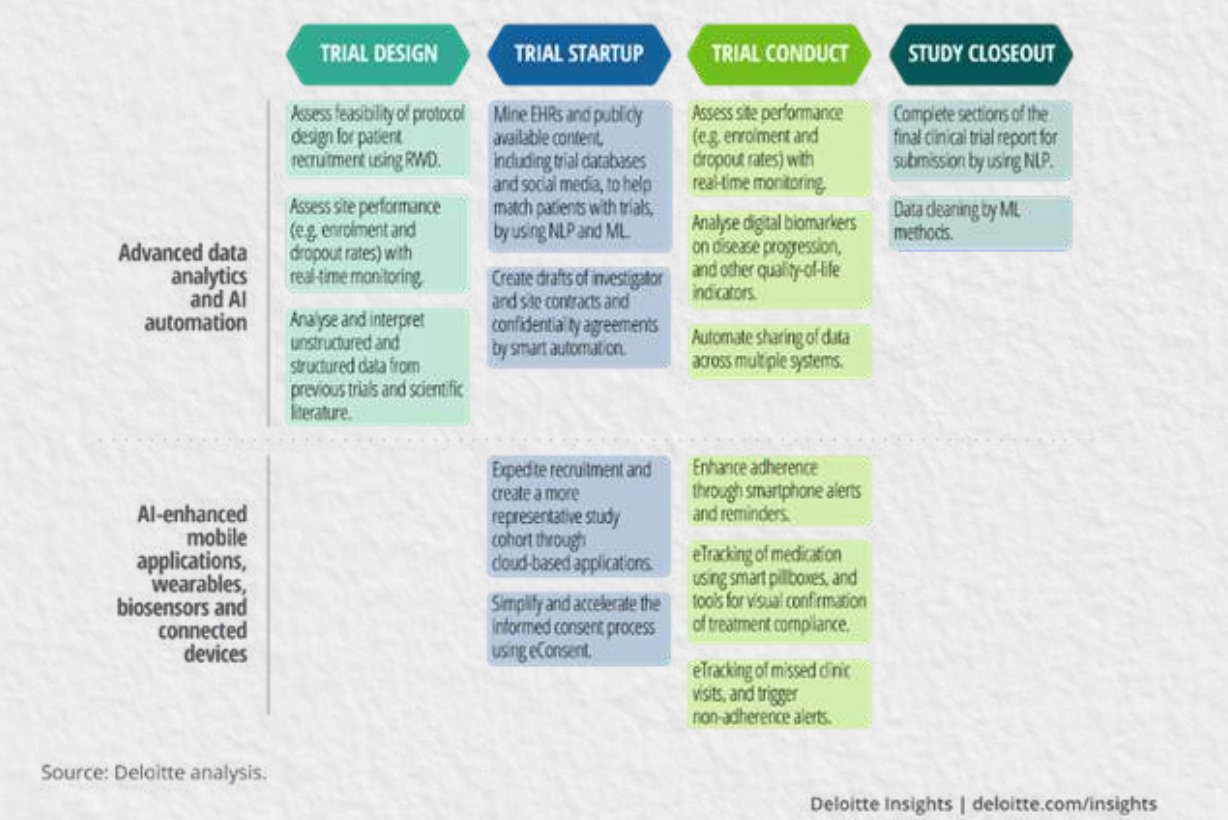


FIGURE 2  
Applications of AI-enabled technology in clinical trials

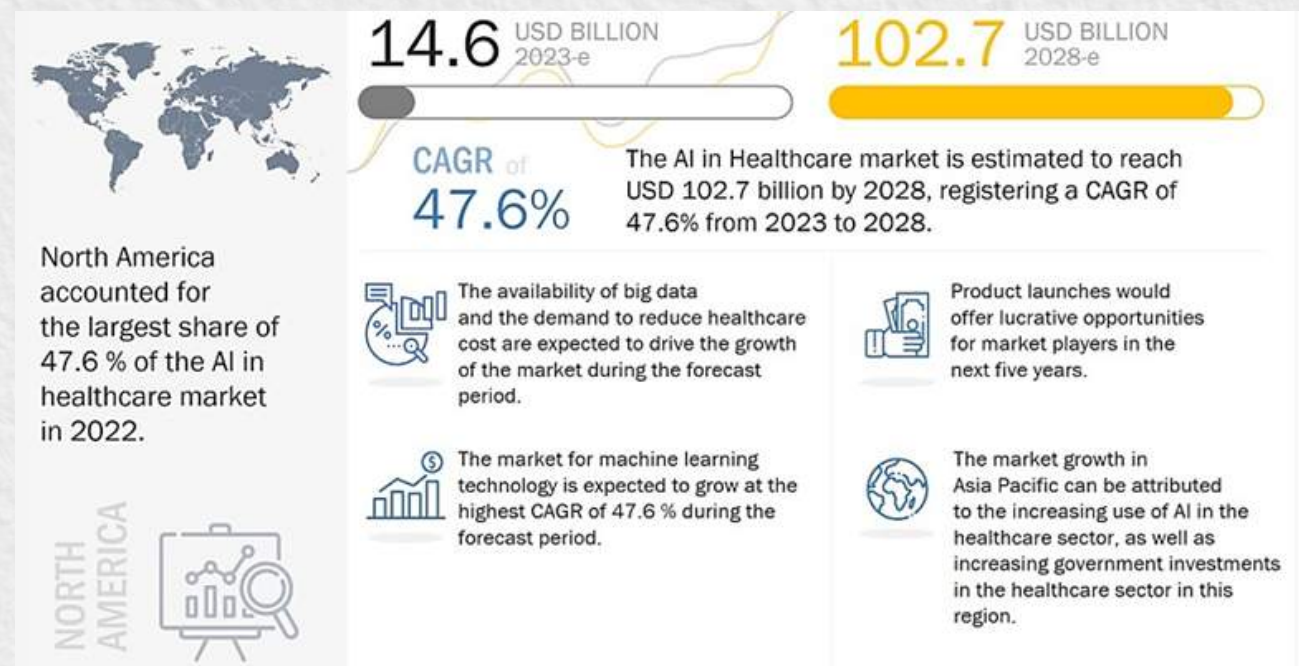


Pros and cons of AI in healthcare:

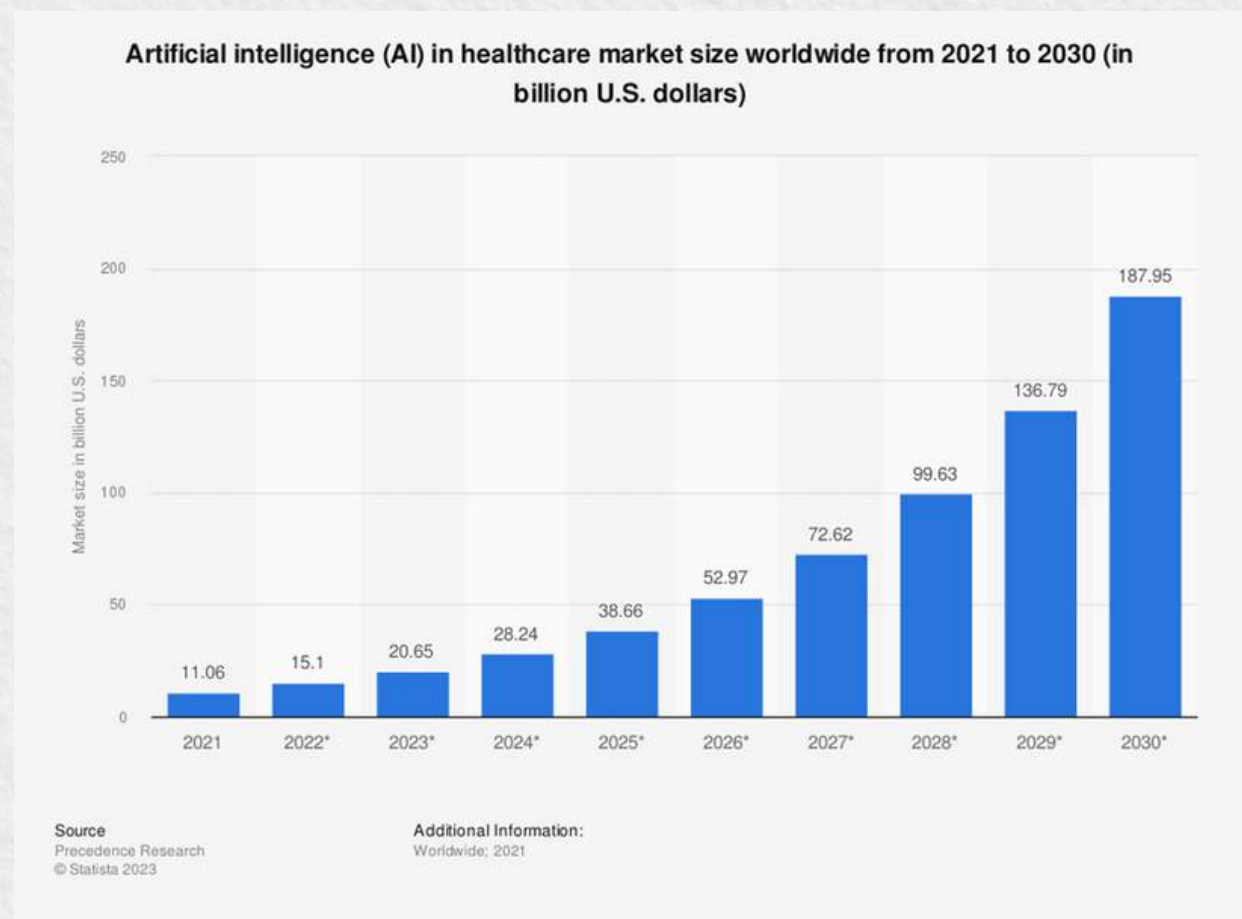
PROS	CONS
Improved diagnosis	Complications in Learning AI
Serves rural community better	A difficult change to adapt to
Better clinical decisions	Requires human assistance
Streamlines several processes	Requires the implementation of accurate AI platform

Global AI in healthcare market forecast:

The rising need for improvised healthcare services due to the disparity between patients and the healthcare workforce will drive the AI in healthcare market growth in the coming years. Increasing efforts to reduce healthcare costs and the generation of large and complex datasets have allowed the development of AI in healthcare, further strengthening the market growth. Using data and algorithms, AI efficiently identifies the pattern and delivers automated insights for applications such as managing medical records, digital consultation, and treatment design.



AI in healthcare market size worldwide from 2021 to 2030:



The global market for AI in healthcare has grown significantly over the years due to advancements in technology and the implementation of sophisticated AI applications in the medical industry.

## References:

1.Markets and Markets. (2023, January). AI in healthcare market report.

2.Deloitte. (2020, February 10). Intelligent clinical trials: An analysis of the AI market.

3.Innovaccer. (2022, July 16). Healthcare's data readiness crisis: A study conducted by Morning Consult.

4.Accenture. AI and its capabilities: An analysis report.

5.Precedence Research. (2023). Statista.

# Ethical concerns and HR data analytics



## National Finalist

Kevin Hiten Savla and

Kashish Prakash Lahrani

PGDM HR

N.L. Dalmia Institute of Management  
Studies and Research



### Introduction to HR Data Analytics

The increasing adoption of HR data analytics has brought about a significant transformation in how companies manage their workforce. Using advanced analytics and machine learning algorithms, organizations can now leverage vast amounts of employee data to make data-driven decisions, optimize recruitment strategies, enhance talent management, and improve overall organizational efficiency. However, alongside the potential benefits, the proliferation of HR data analytics has raised ethical and privacy concerns that necessitate a comprehensive approach to strike the right balance between data-driven insights and safeguarding individual rights and privacy.



HR data analytics streamlines recruitment, selection, performance management, engagement, and retention. Past applicant data help identify ideal candidates for open positions. It enables informed decisions by evaluating past performance to hire suitable employees. Analyzing performance data offers personalized feedback and coaching. Additionally, it measures engagement and satisfaction through surveys and social media, identifying areas for improvement to reduce turnover.

## Ethical HR Data Analytics: Safeguarding Privacy & Fairness



Ethical HR data analytics involves the following practices

**Transparent Data Practices:** Provide clear information about data collection and usage for informed decision-making.

**Consent and Opt-Out Mechanisms:** Respect privacy rights by obtaining explicit consent and offering opt-out options.

**Mitigating Bias:** Regularly audit analytics to identify and address unintended biases.

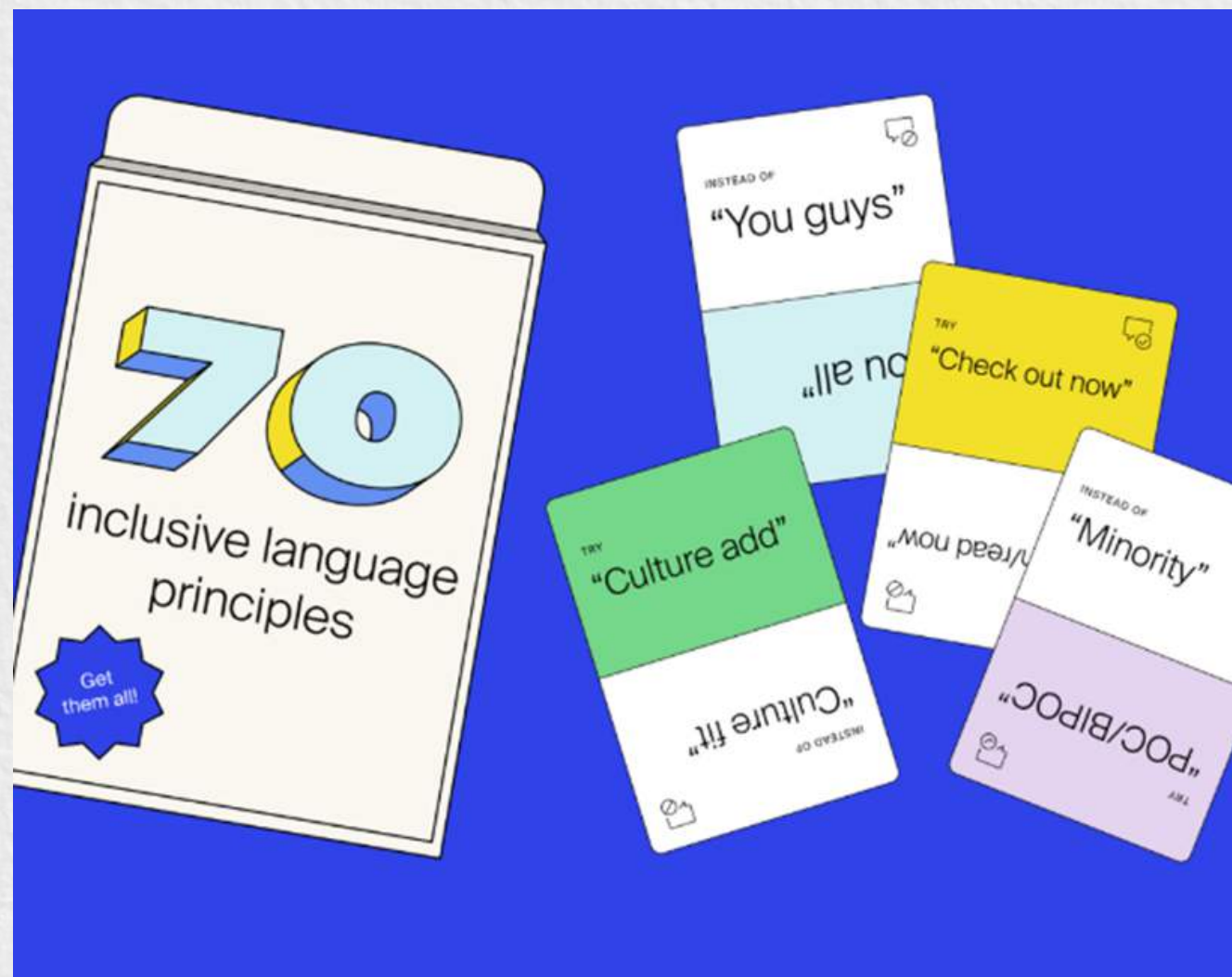
**Data Anonymization and Encryption:** Protect sensitive data through anonymization and encryption.

**Restricted Data Access:** Limit access to authorized personnel to prevent misuse or leaks.

**Employee Education and Awareness:** Conduct regular privacy training to foster data literacy and responsibility.

**Data Retention Policies:** Establish clear policies to minimize privacy risks and avoid unnecessary data storage.

## HR Data Analytics in Action: Some Company Examples



### 1. Google:

In 2018, Google faced accusations of using HR data analytics to monitor employee political activity. While the company denied the allegations, this incident raised concerns about Google's approach to employee data.

### 2. IBM:

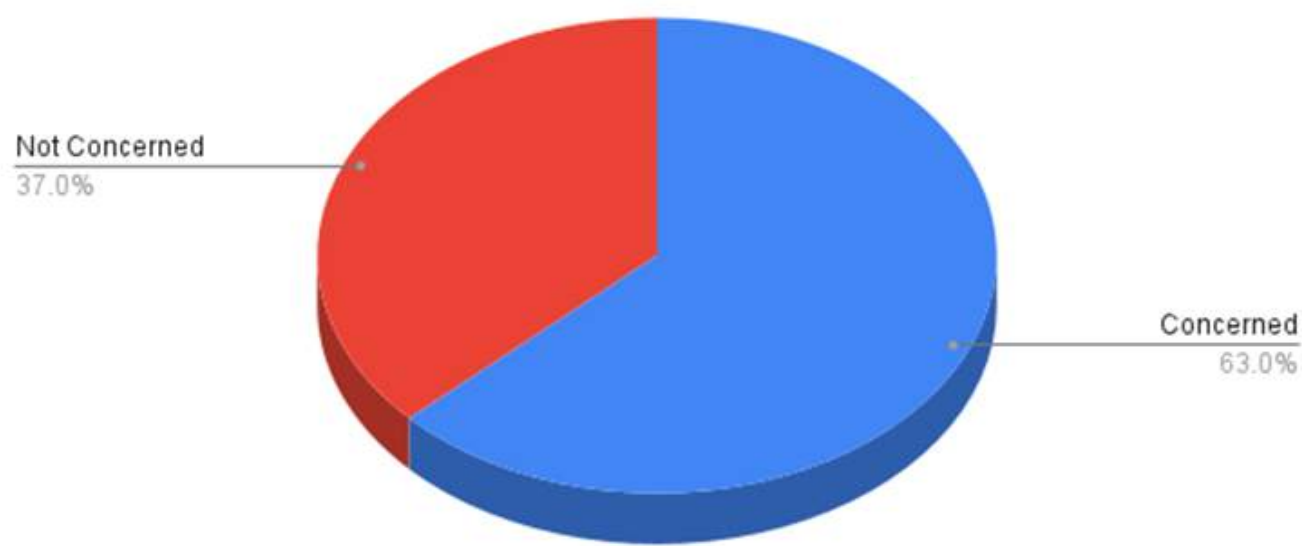
In 2019, IBM was sued by a former employee who claimed that HR data analytics tools were used to discriminate against her. The lawsuit alleged gender bias in hiring, promotions, and compensation decisions.

### 3. Microsoft:

Microsoft employs HR data analytics to track employee engagement and satisfaction. By analyzing this data, the company identifies areas for workplace culture improvement, promoting higher employee engagement.

## Statistics

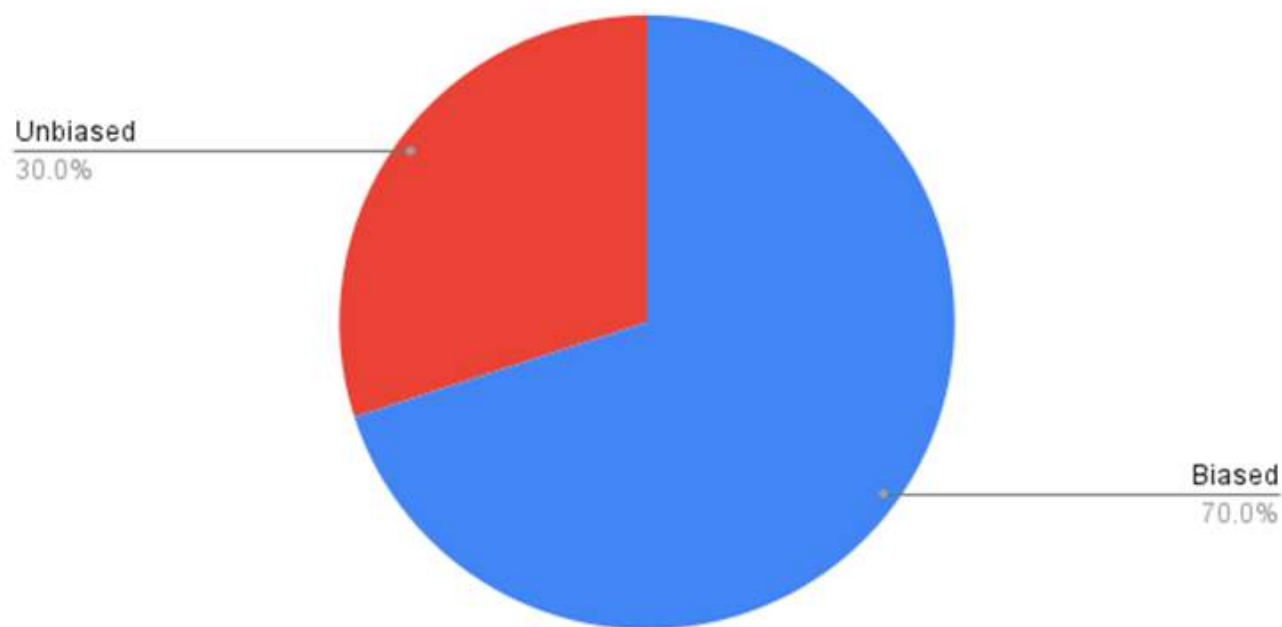
HR Professionals concerned for Ethical use of Data Analytics



### Source - Society for Human Resource Management

A survey by the Society for Human Resource Management found that 63% of HR professionals are concerned about the ethical use of data analytics.

Percentage of HR data analytics algorithms biased against women



### Source - University of California, Berkeley study

A study by the University of California, Berkeley found that 70% of HR data analytics algorithms are biased against women

## Ensuring Security and Ethical Practices

To establish a secure and ethical framework for HR data analytics, organizations can consider the following measures:



### 1.Collaborative Framework

Developing a collaborative approach involving employees, data scientists, HR professionals, and legal experts fosters a holistic perspective on ethical implications and privacy concerns. By including diverse perspectives, organizations can develop data analytics practices that reflect a broader understanding of privacy and ethics.

### 2.Rigorous Compliance

Adherence to relevant data protection regulations and industry standards is paramount. Organizations must conduct periodic reviews to ensure that HR data analytics practices comply with legal requirements and industry best practices. This not only protects the organization from legal liabilities but also builds trust with employees and stakeholders.

### 3.Ethical Review Boards

Establishing internal ethical review boards can provide a valuable mechanism for ongoing assessment and validation of HR data analytics methodologies and outcomes. These boards can help identify and address potential ethical concerns early in the process, mitigating the risk of unintended consequences.

## 4.Regular Training and Assessments

Conducting regular training sessions and assessments on data privacy, ethical guidelines, and algorithmic fairness keeps employees updated with the evolving landscape of HR data analytics. Moreover, it reinforces the organization's commitment to maintaining a high standard of ethical conduct in data usage.

### Additional tips for organizations that are using HR data analytics

Create a data governance framework: A data governance framework is a set of policies and procedures that govern the collection, storage, and use of data. This framework can help organizations ensure that data is collected and used ethically and responsibly.

Use data analytics tools that are designed to be fair and unbiased: There are a number of data analytics tools that are designed to be honest and unbiased. These tools can help organizations to avoid discriminating against employees on the basis

### Conclusion

HR data analytics presents a remarkable opportunity for organizations to optimize workforce management and decision-making.

However, alongside these advantages, it is imperative to proactively address ethical and privacy concerns to ensure that individual rights and privacy are upheld. Transparent data practices, bias mitigation, data security, and employee education are crucial aspects of building a responsible HR data analytics framework. By embracing these practices, companies can navigate the ethical landscape of HR data analytics and foster a work environment that values data-driven insights while prioritizing individual rights and privacy. Emphasizing ethical considerations in HR data analytics ultimately contributes to a more inclusive, privacy-conscious, and socially responsible workplace.

### Sources:

- 1.The Wall Street Journal. (2019). IBM Sued for Allegedly Using HR Data Analytics to Discriminate Against Women.
- 2.Forbes. (2019). Microsoft Uses HR Data Analytics to Track Employee Engagement and Satisfaction.
- 3.The Guardian. (2018). LinkedIn Uses HR Data Analytics to Identify High-Performing Employees.
- 4.Linkedin. (n.d.). [Ethics of HR Analytics: Balancing Data Collection and Employee Privacy]. Retrieved from

<https://www.linkedin.com/pulse/ethics-hr-analytics-balancing-data-collection-employee-suresh-/>

5.Harvard Business Review. (2023, July). [The Ethics of Managing People's Data]. Retrieved from <https://hbr.org/2023/07/the-ethics-of-managing-peoples-data>

6.Society for Human Resource Management (SHRM). (n.d.). [Privacy and Ethics in People Analytics]. Retrieved from <https://www.shrm.org/executive/resources/PublishingImages/pages/Privacy-and-Ethics-in-People-Analytics-/Privacy%20and%20Ethics%20in%20People%20Analytics.pdf>

7.The New York Times. (2018). Google Accused of Tracking Employee Political Activity.

# Utilizing Generative AI to Address the Mental Health Crisis in India's Working Population



## National Finalist

Rahul Airi

PGDM (IB)

FORE School of Management



### Introduction:

India is home to a vast working population, with a staggering 474 million individuals according to Census 2011. The working-age population is anticipated to rise from 61% in 2011 to 65% in 2036, adding 12 million individuals to the labour force annually as the demographic dividend of the country continues to develop. However, amidst this bustling workforce lies a hidden crisis - the impact of mental disorders on millions of working individuals.

Although there aren't any population-based prevalence studies that particularly focus on India's working population, estimates from a number of sources suggest that mental problems affect this group far more than the average population. According to the National Institute of Mental Health and Neuro-

Sciences' (NIMHANS) 2015-16 National Mental Health Survey, around 150 million citizens—or 10.5% of the population—suffer from mental diseases of varied severity. In a similar manner, the Global Burden of Disease Study, which was released in 2020, found that 197 million people, or 14.3% of the population, suffer from mental diseases. Both studies show that a sizable fraction of people with mental illnesses are between the ages of 15 and 59, which is considered to be the working-age population.

Highlighting the urgency of the issue, a survey conducted by The7th Fold in 2020 revealed that 36% of working individuals in India were experiencing mental health issues. The situation has further escalated due to the COVID-19 pandemic, with studies reporting increased stress levels among employees. According to the PwC 2021 Employee Financial Wellness Survey, 63% of employees

were under financial stress as a result of the pandemic. Additionally, among 18 nations, India had the greatest anxiety level according to a survey done by Deloitte during the second wave of the epidemic. The urgent need for rapid attention to workplace mental health is shown by these data.

### **Addressing the Crisis with Generative AI:**

Amidst this challenging landscape, Generative AI presents a promising solution to support and address the mental health needs of the working population. Generative AI involves the use of advanced algorithms to generate human-like responses and simulate conversations. These virtual assistants can offer a range of mental health support services, including information dissemination, symptom monitoring, psychoeducation, self-help strategies, and even crisis intervention.

The utilization of Generative AI in mental health has shown significant potential. These AI-powered assistants can provide instant replies to users' queries, thereby reducing waiting times and providing timely support. By utilizing Generative AI, individuals can seek guidance on managing their mental health without having to wait for in-person appointments. This is particularly crucial given the increasing demand

for mental health services and the limited availability of mental healthcare professionals.

Generative AI also offers benefits such as cost reduction, improved efficiency, and reduction in time spent on diagnostic processes. These virtual assistants can provide continuous support by being available 24/7, allowing individuals to access assistance whenever they need it. Furthermore, Generative AI provides an added advantage of anonymity, enabling users to disclose sensitive information without fear of judgment or stigma. This feature has proven to be especially valuable for young individuals who may feel uncomfortable discussing their problems with a human therapist.

The implementation of Generative AI is not limited to the general working population; it has also demonstrated success in specialized areas. For instance, it has been used to support diabetic patients in managing their condition and receiving personalized advice. In student counseling, Generative AI has aided in overcoming exam stress and addressing the peak capacity of university counseling services during exam periods. These applications highlight the versatility and potential impact of Generative AI in various domains of mental health support.

While the integration of Generative AI in mental health support holds promise, it is important to address certain considerations. One significant limitation is the challenge of understanding the nuances of human language and emotions. Generative AI systems need to be trained to comprehend the complexities of mental health problems and provide appropriate responses. Developers must emphasize transparency, ensuring that users are aware when they are interacting with an AI system to prevent any confusion or misunderstanding.

Privacy and data security also need to be prioritized in the development and deployment of Generative AI. Personal information shared with virtual assistants must be safeguarded, and data-sharing practices should adhere to ethical and legal guidelines. Clear communication regarding data usage and confidentiality should be provided to build trust and confidence among users.

Additionally, Generative AI should not be viewed as a substitute for human mental healthcare professionals. It should complement existing mental health services, acting as an additional resource rather than replacing the need for human interaction. It is crucial to strike a balance between technological advancements and

human support to ensure comprehensive and holistic care.

### **Conclusion:**

The prevalence of mental disorders among India's working population demands immediate attention and innovative solutions. With the rise of Generative AI technology, virtual assistants offer a viable avenue to address the mental health crisis. By providing accessible, cost-effective, and confidential support, Generative AI can bridge the gap between the growing demand for mental health services and the limited availability of professionals.

However, the implementation of Generative AI should be guided by careful consideration of ethical, privacy, and technical aspects. Collaboration among mental healthcare professionals, experts, developers, and policymakers is crucial to ensure the responsible and effective integration of Generative AI into mental health support systems.

In conclusion, Generative AI has the potential to revolutionize mental health support for India's working population. By leveraging its capabilities in information dissemination, symptom monitoring, psychoeducation, and crisis intervention, virtual assistants can provide timely, accessible, and confidential support. With the right implementation and ongoing

research, Generative AI can play a significant role in alleviating the burden of mental disorders and promoting the well-being of India's workforce.

## References-

<https://blog.bccresearch.com/top-10-ai-companies-leading-in-mental-health-industry>

<https://www.netsolutions.com/insights/saas-business-model-benefits/>

<https://woebothealth.com/>

<https://dl.acm.org/doi/fullHtml/10.1145/3453175>

<https://www.scienceopen.com/hosted-document?doi=10.14236/ewic/HCI2017.24>

<https://ieeexplore.ieee.org/abstract/document/9000924>

<https://www.sciencedirect.com/science/article/abs/pii/S1386505619307166>

<https://www.jmir.org/2021/1/e17828/>  
<https://www.sciencedirect.com/science/article/abs/pii/S2352250X2030049X>

[https://link.springer.com/chapter/10.1007/978-3-030-17705-8\\_11](https://link.springer.com/chapter/10.1007/978-3-030-17705-8_11)

## The Plan Pursuit



Atharva Joshi



Aditya Kamat



Priyanshi Avatani

### 1. First of all, congratulations on winning. How do you feel about it?

Thank you. I feel really delighted and happy to have won this competition. First and foremost, I want to emphasize that our success was a result of outstanding teamwork and collaboration. Each member of my team contributed their unique skills and expertise and together, we were able to win the case study competition. Overall, the triumph has strengthened our bond and trust, fostering a positive and collaborative environment that will lead us to even greater achievements in the future.

### 2. Could you brief us about this competition? What hurdles did you face and how did you overcome them?

The case was given to us by OLL an Edtech platform popular offerings in the fields of Technology, Life skills, Languages. The problem was regarding their reporting system for the entire aftersales from educator assigning to student completion and renewal of the courses. Their business models consisted of 4 types of customers with each having different offerings and 5 levels of educators with different paygrades. As the time given us to find the solution was only 5 days we were not able to find students

who have taken courses from OLL, instead we started to talk to students who have taken similar online courses and what their pain points were, we also had conversations with people who have already worked in the edtech industry and what they feel aftersales lack. After understanding the pain points we narrowed it down to 5 which we thought were most relevant. and presented with a solution for each. They loved our solution for absenteeism of students and complemented us that we were the only team who had thought about it.

### 3. What were your key learnings and takeaways?

- You first need to understand what are the processes involved in the said business for which we are giving the solution for.
- Even if you don't have enough information with you in the case you can always talk to people who know that industry better, you can talk to their consumers to understand their pain points.
- The main key to finding solution is to make your solution in such a way that it will answer to each and every "What if" question which will arise.
- The main takeaway which we took from this competition was to find the solution you should understand the value chain of the business so that you can align the solution without disturbing the existing value chain.

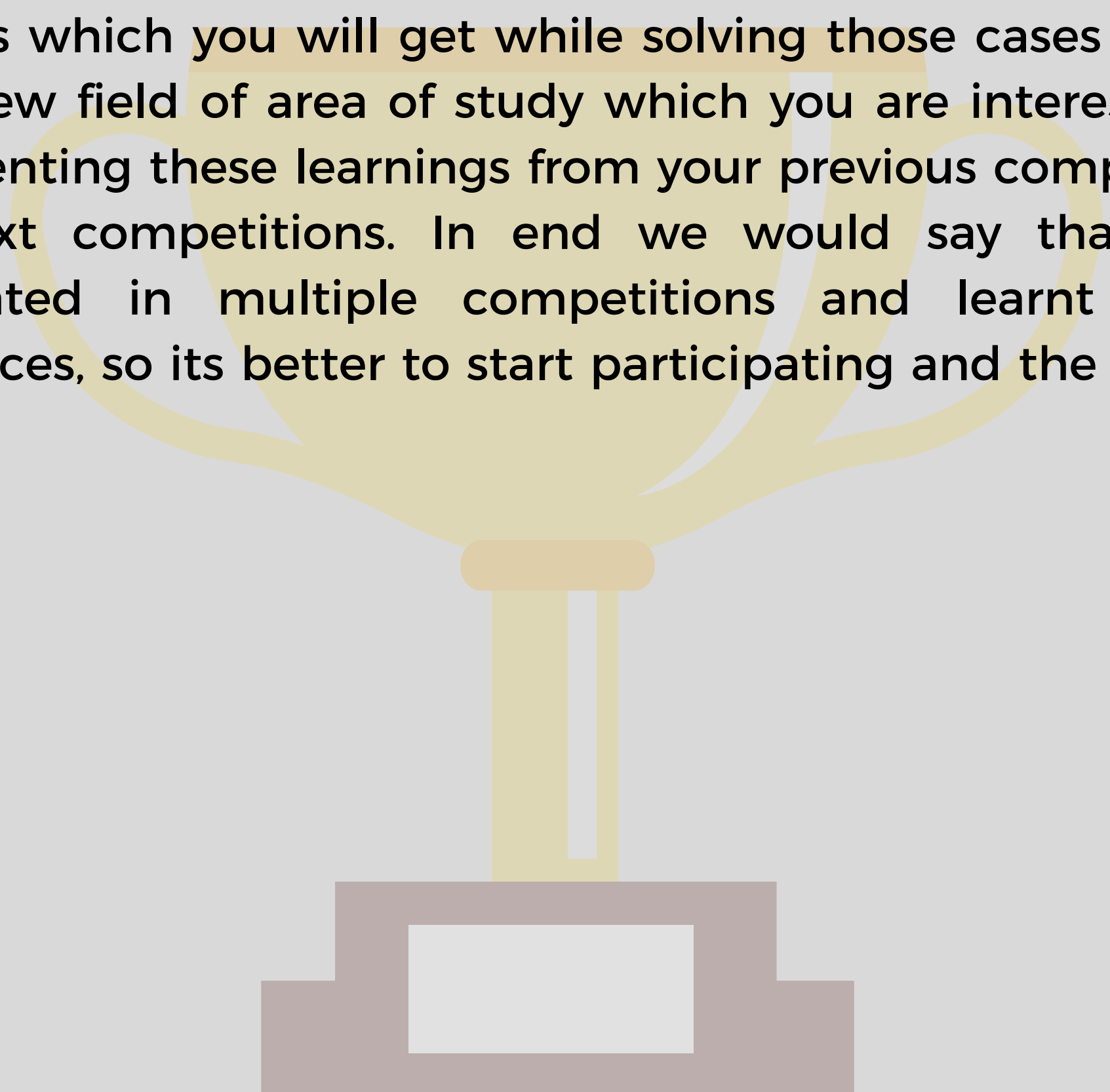
### 4. It is always difficult managing your time between academics, personal life, and other opportunities. How did you manage your time?

Managing time between academics, personal life, and other opportunities can indeed be quite challenging. Each aspect demands attention, and trying to balance them all effectively can lead to feelings of stress and overwhelm. However, with the right strategies and mindset, it is possible to achieve a sense of balance and maintain overall well-being. The difficulty arises from the fact

that all these areas are essential and have their unique demands. I manage my time by setting clear priorities, creating a proper schedule and finishing my work on time. Being patient, perseverant and having a proactive approach always helps me to manage my time. Even during period of submission for this competition we all set our timelines so that we will be able to complete our work before time and revisit it for any improvements.

## **5. What guidance or recommendations would you offer to your peers to ace such high value platform?**

We would suggest that start competing in these competitions without worrying about the results. It will take few competitions to know how we have to reach towards the solution and how we have to deliver it in a effective manner. When you will start participating in this competitions you will be giving solutions to real world problems which will give you an extra confidence boost each time you solve one. Also, don't focus on result but on the learnings which you will get while solving those cases you might find a new field of area of study which you are interested in, try implementing these learnings from your previous competitions in your next competitions. In end we would say that we also participated in multiple competitions and learnt with our experiences, so its better to start participating and the results will follow.



# Geopolitical Watch

## China imposes restrictions on drone exports to USA



Source: <https://www.telecomreviewafrica.com/en/articles/general-news/2868-us-china-war-makes-tech-industry-s-headlines-again>

The tech war between China and USA continued to intensify as the former curbed export of drone equipment to the USA citing national security and interests. The restrictions will come into effect from September 1 on various equipments such as drone engines, lasers, communication devices and anti-drone systems. According to a report by Wion, 50 percent of the drones sold in the USA are manufactured by Chinese major DJI. The tech war ignited in 2018 when US President Donald Trump imposed constraints on Chinese investments in the US high-tech industries. This intensified further with the US administration blocking shipments of semiconductors to Huawei in 2020.

In 2022, US under the Biden administration introduced the CHIPS Act 2022 that intensified the process of tech decoupling from China by envisioning USD 52 billion worth investments in semiconductor R&D and incentivising its manufacturing in the USA. Going forward, sanctions were also imposed on export of advanced semiconductors, chip-making equipment and components of supercomputer to China.

In February this year, senior officials from USA, Japan, South Korea and Taiwan (also dubbed as the 'Chip 4 Alliance') held a meeting under the new US-led framework to ensure stable supply of semiconductors in times of crises. China has responded to these challenges by its vision of 'Made in China 2025'; which focuses on 10 sectors in China's industrial priorities viz New generation Information technology, high-end computerized machines and robots, aerospace, maritime equipment, energy equipment, etc.

As a result of this intense competition, USD 200 billion worth of domestic manufacturing investments have been pledged by 35 semiconductor companies across US. The Taiwan Semiconductor Manufacturing Company (TSMC) also aims to triple its investments in the US to USD 40 billion. Similarly, China has responded by promising domestic investments worth USD 1.4 trillion over 5 years in strategic technologies.

Admst this rivalry, India has an opportunity to fill in the gap as was evident through the launch of US India Initiative on Critical and Emerging Technologies (iCET) which is a roadmap for enhanced collaboration in high-technology areas. The initiative focuses on six major areas of cooperation- AI research agency partnership, Defence Industrial, Technology cooperation and Defence startups, Innovation Systems, Semiconductor ecosystems Developments, Cooperation on human spaceflight, advancement in 5G and 6G technologies and adoption of OpenRAN network technology in India. India's ability to harnesses this promising opportunity for enhanced collaboration and advancement in crucial high-tech areas will ensure the empowerment of nation's growth in various sectors.

#### References:

1. The great US-China tech decoupling. (2023, July 20). ORF Online. <https://www.orfonline.org/expert-speak/the-great-u-s-china-tech-decoupling/>
2. China restricts exports of drone equipment as tech war intensifies with US. (2023, July 21). WION News.

<https://www.wionews.com/world/china-restricts-exports-of-drone-equipment-as-tech-war-intensifies-with-us-621212>

3. US-India initiative on critical and emerging technology. (2023, July 22). Drishti IAS. <https://www.drishtiias.com/daily-updates/daily-news-analysis/us-india-initiative-on-critical-and-emerging-technology>



# Geopolitical Watch

## India's tech partnerships focus: Takeaways from PM Modi's recent international visits



Source: <https://kathmandupost.com/columns/2021/05/25/south-asian-geopolitics-present-and-future>

In May 2023, PM Modi embarked on a series of significant international visits, attending the G-7 Hiroshima Summit & Quad Summit in Japan, followed by the 3rd Summit of Forum for India & Pacific Islands Cooperation (FIPIC) in Papua New Guinea (PNG), and concluding with a visit to Australia.

The G-7 Summit highlighted the importance of considering global fertilizer supply chains, promoting organic farming, and diversifying staple food crops to include millets, concept of 'One Earth, One Health' policy which envisages digitalisation and universal health coverage for all, appeal for resilience of green and clean supply chains, etc. While the summit called for immediate cessation of conflict in Ukraine, PM Modi's address marked India's growing stature in geopolitics by ensuring to do everything within India's means to help resolve the conflict.

Similarly, the Quad summit witnessed a series of developments such as the launch of Quad Infrastructure Fellowship Programme which aims to train 1800 professionals to design and build high quality infrastructure, the launch of the Quad International Standards Cooperation Network, Quad Principles on Critical and Emerging Technology Standards for the development of new industry standards, the Quad Investors' Network to facilitate investment in cutting-edge and critical technologies, the Quad Joint Principles for Secure Software and the Quad Joint Principles for Cyber Security of Critical Infrastructure, etc. The FIPIC summit saw the initiation of several outcomes such as setting up of health facilities and Jan Aushadhi centres to Pacific Island countries, training and technology transfer, especially solar and desalination, etc.

During the Prime Minister's visit to Australia, several significant outcomes were achieved, including a renewed focus on an India-Australia Comprehensive Economic Cooperation Agreement (CECA), enhanced cooperation in the mining and critical minerals sector, establishment of a joint task force on Green Hydrogen, and the signing of a migration and mobility agreement. While India and Australia had upgraded their relationship to Comprehensive Strategic Partnership in 2020 with a focus on science and technology, maritime cooperation, trade and investment, defence ties, agriculture, education and tourism, the leaders of the two countries resolved to conclude the CECA by the end of 2023. For the year 2021-2022, India exported USD 8.3 billion worth of merchandise to Australia while the imports stood at USD 16.75 billion.

In June 2023, Prime Minister Narendra Modi embarked on his first state visit to the United States since Joe Biden assumed the presidency. While the visit was significant due to multiple factors, the focus on technology featured at the forefront, with the word 'technology' being mentioned 44 times in the joint statement. Both nations discussed strengthening their strategic partnership in numerous areas, including emerging technologies such as AI, coordination for semiconductor industry incentives, space collaborations between NASA and ISRO, and advancements in atomic and green energy. The cooperation in strengthening semiconductor

supply chains is exhibited through the investment plans of Mircon Technology, through aid from India Semiconductor Mission, in a semiconductor assembly and test facility in India. 60000 Indian engineers will also be trained by Lam Research through its 'Semiverse Solution' to enhance India's semiconductor education. The space cooperation between the two countries received further boost as India became the 27th country to sign the Artemis Accords, which espouse conduct of space activities for peaceful purposes, sustainable space related activities, limit the generation of harmful debris, etc. The visit also witnessed the establishment of Indo-US Quantum Coordination Mechanism to facilitate joint research on Quantum Technology, AI and advanced wireless technologies. Lastly, a mechanism named 'Innovation Handshake' was also launched to connect the Startup ecosystem of both the countries which will in turn support the US-India Initiative on Critical and Emerging Technologies.

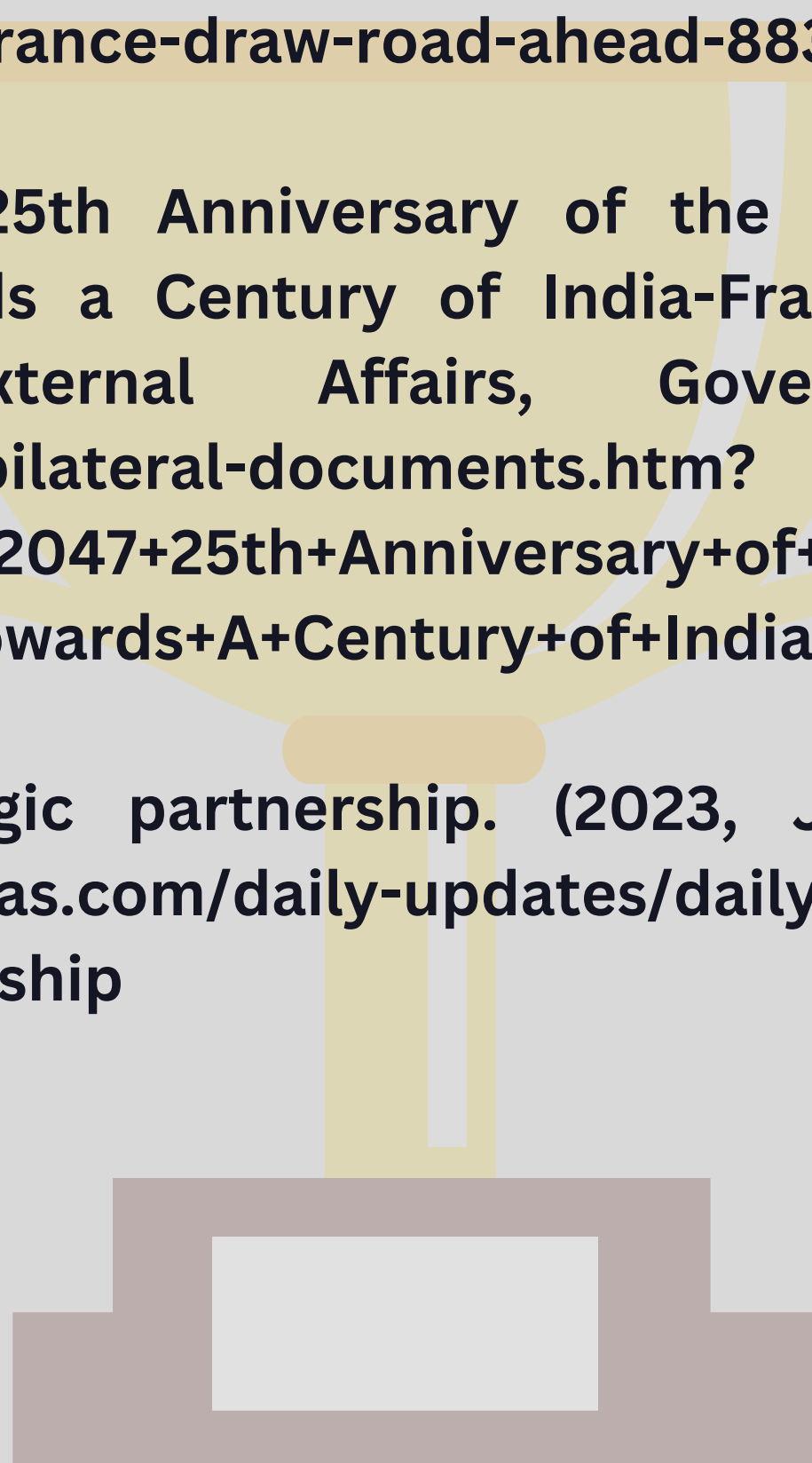
In July, PM Modi's visit to France marked the 25th anniversary of India-France Strategic Partnership, which was signed in 1998. Trade between the India-France peaked in 2022-2023 with India's exports accounting for more than USD 7 billion and imports of approximately USD 5.6 billion. During the visit, PM Modi was felicitated with highest honour of France, The Grand Cross of the Legion of Honour, which was instituted by Napoleon Bonaparte in 1802. French President Emmanuel Macron and PM Modi launched the 25year vision roadmap till 2047 which is based on 3 pillars of partnership for security and sovereignty, partnership for the planet and partnership for the people. The partnership for defence and security is focused on areas of defence in terms of Rafale jets and scorpene submarines, space cooperation between CNES (France's national space agency) and ISRO, civil nuclear energy, counter-terrorism, critical technologies such as cloud computing, supercomputing, AI and quantum computing and civil aviation. While partnership for the planet is based on plastic pollution and health, the partnership on people focuses mainly on student mobility and aiding advanced research collaboration.

India's rapidly growing tech partnerships with other countries are propelling the nation towards the forefront of the global technological landscape. As the world increasingly relies on innovation and

collaboration, India's strategic alliances in emerging technologies, space exploration, green energy, and defense industries are fostering mutual progress and prosperity, fostering India's march towards a brighter and promising future.

### References:

1. India-Australia trade to cross \$70 billion in five years, says think-tank. (2023, July 23). Livemint. <https://www.livemint.com/economy/indiaaustralia-trade-to-cross-70-billion-in-five-years-says-think-tank-11672315080400.html>
2. Dasgupta, A. (2023, July 6). PM visit to Japan, Papua New Guinea, Australia. IDSA Issue Brief. <https://www.idsa.in/issuebrief/pm-visit-japan-papua-new-guinea-australia-adasgupta-070623>
3. India, France draw road ahead on three pillars. (2023, July 20). The Indian Express. <https://indianexpress.com/article/india/three-pillars-as-basis-india-and-france-draw-road-ahead-8838240/>
4. Horizon 2047: 25th Anniversary of the India-France Strategic Partnership Towards a Century of India-France Relations. (2023). Ministry of External Affairs, Government of India. <https://mea.gov.in/bilateral-documents.htm?dtl/36806/Horizon+2047+25th+Anniversary+of+the+IndiaFrance+Strategic+Partnership+Towards+A+Century+of+IndiaFrance+Relations>
5. India-US strategic partnership. (2023, July 22). Drishti IAS. <https://www.drishtiias.com/daily-updates/daily-news-analysis/india-us-strategic-partnership>



# TEAM SAMVAD

## EDITORIAL TEAM



Rishita Goyal  
Co-Editor



Ajinkya Borse  
Chief Editor



Kaustubh Sharma  
Co-Editor

## CONTENT CURATORS



Rhutuja Bhangale  
Head Curator



Ayushi Pandey  
Deputy Curator



Priyanshi Jain  
Content Curator



Samradhi Goyal  
Content Curator



Rohit Jadhav  
Content Curator



Dhanush M S  
Head



Sanjana Kulkarni  
Deputy Head



Devanshi Shah  
Member



Udit Goyal  
Member

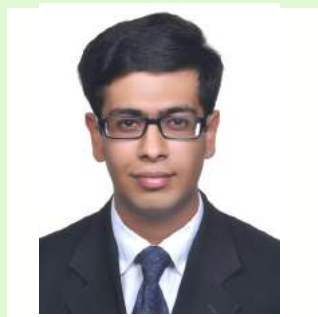
## CREATIVE MINDS



Pravin Mishra  
Head



Jaslin Kaur Sablok  
Deputy Head



Pratyush Bazaz  
Member



Anivit Singh  
Member

## PR PROS



Ayushi Jonwal  
Head



Gourav Bengani  
Member



Rishabh Sawalwade  
Member

## WECHAT MASTERS



# CALL FOR ARTICLES

## THEME FOR THE MONTH

# CONSULTING





Management



Environmental



Financial



IT



Marketing



**Deadline: 20th August 2023**

Submit your article on D2C or mail it to [samvad.we@gmail.com](mailto:samvad.we@gmail.com)

 [@samvad\\_we](https://twitter.com/samvad_we)

 [Samvad WeSchool](https://www.linkedin.com/company/samvad-weschool)

 [SamvadWE](https://www.facebook.com/SamvadWE)

 [@samvad.weschool](https://www.instagram.com/samvad.weschool)
Contact Us: [samvad.we@gmail.com](mailto:samvad.we@gmail.com)

We invite articles for the 138th issue of SAMVAD

The theme for the edition: **'CONSULTING'**

The articles can be from Finance, Marketing, Human Resources, Operations, or General Management domains.

Submission guidelines:

- Word limit: 800 - 1200 words.
- The cover page should include your name, institute's name, course details & contact no.
- The references for the images used in the article should be mentioned clearly and explicitly below the images.
- Send in your article in .doc or .docx format, Font size: 12, Font: Arial, Line spacing: 1.05' to [samvad.we@gmail.com](mailto:samvad.we@gmail.com).
- Please name your file as: \_\_<section name e.g. Marketing/Finance> Subject line: <Your Name>\_<Course>\_<Year>\_<Institute Name>
- Ensure that there should be no plagiarism of more than 5%, and all references should be mentioned clearly.
- Clearly provide source credit for any images used in the article.<!-- EndFragment--> </body> </html>



**Follow us on**



**@samvad.weschool**



**Samvad WeSchool**



**SamvadWE**



**@samvad\_we**



**Contact Us:**

**samvad.we@gmail.com**