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HARNESSING ARTIFICIAL INTELLIGENCE IN INDIAN COMMERCE: OPPORTUNITIES, CHALLENGES, AND TRENDS

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ABSTRACT

Artificial intelligence is transforming the Indian commerce by bringing innovation into the retail, e-commerce, banking and transportation sectors. India's AI market is currently worth of USD 7.8 billion in 2023 and is expected to reach USD 23 billion by 2028. With this we can understand that the overall CAGR is over 25%. Indian enterprises have started to practice and understand AI for many a thing. Customer analytics, Predictive pricing, fraud detection, especially in the banking industries. Considering the NASSCOM report, over 60% of conglomerates have adopted the AI in their business functions. It enhances their efficiency and serving the customer well. If we take the e-commerce field it is Flipkart, Amazon and in the field of banking HDFC, SBI. Even logistics partners such as Delhivery, India Post is using AI. With the benefits, there comes the challenges also. India faces huge data privacy issues, replacements of humans by AI, etc. This paper will throw light into how AI can develop Indian commerce sectors and provides solutions for ethical issues with AI.

KEYWORDS*: *Artificial Intelligence, Indian Commerce, Digital India, Operational Efficiency, Ethical AI, AI Adoption.

INTRODUCTION

In the current global scenario, Artificial Intelligence (AI) has emerged as the weapon for transforming India into a well-built digital economy. Programs like Digital India have shaped the current scenario in India, which has also made India a good platform for the digital penetration. AI is rapidly booming and helpful for consumer analytics, forecasting the sales, demand etc. Chatbots are replacing the humans in the field of customer inquiry handling. NITI Aayog has come up with 'AI for All" and MeitY's National Program on AI make India transform into a global hub. This paper address key issues in AI adoption in Indian commerce and discussions regarding the implications.

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METHODOLOGY

This study takes its source from the secondary data available from NASSCOM, MeitY, McKinsey India, and the World Economic Forum reports published between 2022–2025. Case studies from Indian enterprises such as Flipkart, Reliance Retail, HDFC Bank, and Delhivery are also used for this research. The research contains the qualitative analysis of trends and quantitative data such as market growth, AI adoption rate to analyse the AI's impact in Indian commerce sector.

PROBLEM STATEMENT

Many knows the term AI. But only a handful people knows about the AI. In order to make India into a digitalized economy, our people should understand AI. AI comes with some benefits and some problems.AI inclusion in the fields of commerce has shown increased growth and productivity. But the problems are:

1. Not all the businessmen are using AI. It may be due to the fear of the privacy or inability to shift to AI.
2. Those who know AI are not completely aware of the challenges associated with it and the ways to tackle. This research paper gives discussions relating to the challenges and the solutions of AI adoption in India.

RESEARCH

This research paper has the qualitative and quantitative frameworks, using data from NASSCOM(2024), MeitY's 'National Program on AI', and McKinsey India's industry reports and its findings. This research paper compares the AI implementation between a period of 5 years say, 2020 and 2025. The readers can understand the growth and intensity of AI implementation. This paper also discusses the achievement of AI in cost efficiency, better decision making and solutions to overcome the problems of AI in order to transform India into a global hub and a digital leader.

OPPORTUNITIES OF AI IN INDIAN COMMERCE

India is a growing economy. It has a significant consumer base thereby presenting huge opportunities for AI integration. Classic opportunities are as follows:

1. **SERVING THE CONSUMERS IN THE BEST WAY**–Indian conglomerates like Reliance, Tata and Flipkart use AI in their customer interfaces in order to better satisfy the customer needs and wants. This leads to developing loyal customers and increased conversion rates.
2. **SUPPLY CHAIN OPTIMIZATION**–As discussed in the introduction, logistics firms such as Delhivery and India Post use AI to forecast the demand, optimize the routes and thereby cutting the transportation and fuel cost leading to an approximate cut of 10% in operational costs.

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3. **FASTENING THE BANKING PROCESS**–Nowadays AI are also used in banks in order to analyse the credit score of the customers, risk assessment of companies. This eases the process of credit lending.
4. **SME EMPOWERMENT**–Budget 2026 has given significant allocation to the MSME sectors to support the Make in India movement. Affordable and effective AI inclusion in the day to day operations of the MSME will streamline the marketing and analytics.
5. **GOVERNMENT SUPPORT**–Initiatives like National program on AI and Digital India contribute to the increased growth of AI infrastructure in India. They have increased the AI adoption in the Indian business environment.

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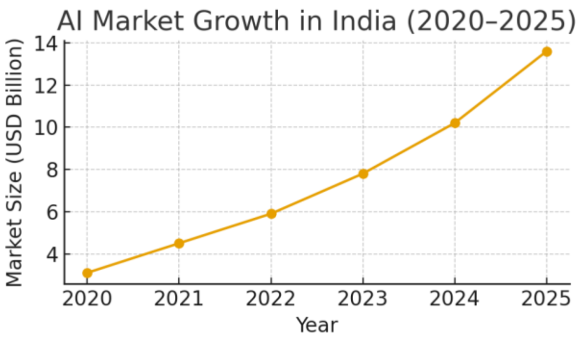

FIGURE 1: AI INVESTMENT GROWTH IN INDIA (2020–2025). SOURCE: NASSCOM, MCKINSEY INDIA (2024)

AI-POWERED EFFICIENCY AND DECISION INTELLIGENCE IN INDIA'S DIGITAL ECONOMY

Artificial Intelligence (AI) has tremendously benefitted the businesses in cost-efficiency, supported in decision-making frameworks, and fuelled the India's digital economy transformation. According to NASSCOM's 'State of AI in India 2024', those Indian firms and businesses which have used AI have achieved an average 18-25% decrease in operational cost and a rise in productivity of 15%.McKinsey India (2025) shows that over 72% of big businesses in India have included AI in atleast one business function. The benefits they are reaping are very high. They get a competitive edge over their competitors, increased accuracy in forecasting, better serving of their customers, etc. All these benefits would be an incentive for the companies which have not adopted AI yet, to build a strong trust on it. Let us now take a look at the quantitative data. AI's contribution to the Indian economy is also huge. It has increased the India's GDP by USD 67 billion. This is approximately 1.8% of the national output. Various studies put forth the prediction that the contribution would exceed USD 120 billion by 2028 as SMEs and various businesses are adopting it. Moreover, MeitY's National Program on AI (2024) indicates that AI has improved the decision making in government, betterment of logistics. Also, it cuts cycle time by upto 20%. Collectively we can say that AI not

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only makes transformation to the economy digitally but also develops India into a stronger nation – increasing productivity, governance and streamlining the processes.

FUTURE TRENDS OF AI IN INDIAN COMMERCE

AI is contributing to huge growth in India. It is expected that it will have an increased contribution in the next decade.

1. Increase in the use of generative AI for marketing, content creation, product design thereby enhancing efficiency.
2. Financial economy is adopting AI for various reasons such as fraud detection, credit score checking, personalized customer service.
3. AI when combined with Internet of Things (IoT) will enable smart and advanced operations.
4. Rural people can be benefitted by the AI based agriculture techniques, weather analytics and real time pricing.
5. With the growth in AI, India is in the process of developing ethical frameworks on the use of AI which will certainly have a positive impact on the users.

QUANTITATIVE ANALYSIS

The quantitative analysis of the available data shows a strong impact of AI in the Indian Commerce sectors between 2020 and 2025.According to NASSCOM (2024), the AI market in India is expected to expand from USD 7.8 billion in 2023 to over USD 23 billion by 2028, with a compound annual growth rate (CAGR) exceeding 25%. Banking and financial services are the largest adopters, with a 72% adoption rate, followed by retail and e-commerce at 68%. Logistics and manufacturing have also witnessed significant advancements in automation, which has increased the operational efficiency up to 20% in logistics and 15% in the retail supply chains. Also, AI has contributed to 1.5% in India's GDP.

TABLE 1: AI ADOPTION ACROSS INDIAN COMMERCE SECTORS (2024)

SECTOR	ADOPTION RATE (%)
Retail & E-commerce	68
Banking & Finance	72
Logistics	54
Manufacturing	49
Customer Service	61

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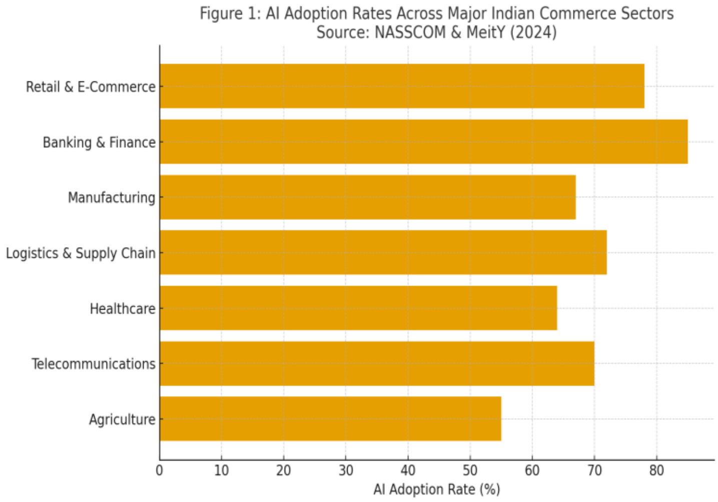

FIGURE 2: AI ADOPTION RATES ACROSS MAJOR INDIAN COMMERCE SECTORS. SOURCE: NASSCOM & MEITY (2024)

CHALLENGES OF AI IN INDIAN COMMERCE

We acknowledge that AI is being adopted and implemented in India, but there are also challenges and difficulties in its full-fledged implementation. Below are the major challenges faced by Indian Commerce in adopting AI.

1. **DATA PRIVACY ISSUES**–Lack of strong legal rules protecting the data leads to falling of data in the wrong hands.
2. **LACK OF STRONG INFRASTRUCTURE** –Not all Indians can access high-speed internet. Especially in rural areas and Tier III cities, it is a major problem. There is a gap in the urban area and rural area in accessing the network. We can see many users of digital banking, Paytm in urban areas.
3. **SKILL GAP IN INDIA** – NASSCOM report shows that there is a skill gap of 51% in regards to AI among the Indian youth. Sounds very large. When half of the population is not aware of AI application, how can India become a strong digitalized nation?
4. **IMPLEMENTATION COST** –SMEs face a huge financial burden when they want to adopt AI in their business. If they do not adopt AI in their business, their process cannot be streamlined and they will not have competitive edge.
5. **ETHICAL ISSUES**–While using the AI in the core business functions, there is a tendency of the owners to have suspicion, as AI may not be fully secured. This leads to many business persons refraining from the application of AI.

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SOLUTION & RECOMMENDATIONS

The research paper indicates that AI has transitioned from a mere technology to a strategic device leading to commercial success in India. The findings suggest that AI if used with Big data, IoT, cloud computing has led to significant operational efficiency, cost reduction, supply chain optimization and customer satisfaction. In order to have a 100% implementation of AI,

1. The government should come up with strong legal framework providing punishments for breach of ethics while using AI.
2. Though AI replaces the repetitive roles and mundane tasks, it actually provides job opportunities for those who know how to handle AI. That is why there is an increased emphasis on the learning of AI tools.
3. In order to bridge the skill gap, the government should come with various vocational courses and skill courses to equip the people with AI. Thanks to National Skill Development Council which is performing a wonderful job on equipping the Indian youths with various skills.
4. In order to reduce the regional imbalances on accessing the digital tools, awareness regarding the digitalization needs to be done.

CONCLUSION

Digital India is no more an ambition. It has become a reality. Nowadays everywhere AI has a prospect and scope. It will soon become an indispensable tool. It’s the high time that we all learn and equip ourselves in the cutting-edge technology. Gone are the days where we all segregated the streams in the schools and colleges. Now even a doctor needs to learn AI to precisely identify the problem. An arts student needs to learn AI to automate the accounts and day to day operations in the company. With the increased support from the government, businesses and all other users, we can jointly achieve the India’s mission of becoming ‘Digi India’.

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