ARTIFICIAL INTELLIGENCE IN FUTURISTIC HUB IN INDIA

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ABSTRACT

Artificial Intelligence (AI) and its field of study have come a long way since John McCarthy first conceptualised the idea in 1956, along with a group of mathematicians who believed that all aspects of learning and cognition could be clearly defined and simulated in machines. Trailblazers such as Alan Turing, Hinton and LeCun advanced so-called neural networks and deep learning, which transformed natural language processing, image generation and medical diagnostics. The decade of the 2010s was characterized by the emergence of multimodal AI, which could perform a variety of tasks over diverse domains. At the same time, India's Smart Cities Mission, launched in 2015, is designed to empower urban infrastructure to be reborn with 'smart solutions', such as data-driven traffic management and intelligent lighting. The convergence of AI technologies with the Smart Cities Mission also brings its own set of challenges and opportunities including, managing data privacy concerns, combating skill gap issue in the country, and creating a requisite high-performance computing infrastructure. The Indian government and progressive policymakers underpinning a potential partnership with global talent for research and real-world application can together aid India

in emerging as a global leader in AI research and application with the goal to set international standards for the use of AI. We examine these developments in this paper and discuss the prospects of building sustainable and economically viable smart cities with applications of the AI technology towards the urban and digital future of India.

1. INTRODUCTION

Keen Cities Mission, a path-breaking program was declared by the Prime Serve of India, Mr. Narendra Modi on 25th of June 2015. objective of this program is metropolitan ranges with "savvy arrangements" that give quality fundamental framework, and a clean and maintainable environment, which have been picking up priority over domain. Urban Advancement can be exceptionally extravagantly portrayed as a work out pointed at thousands of financial development and the tall common quality of life by considerably moving forward the relationship by social, financial, physical and organization components. It may be a central supported conspire in which, the central government contributes Rs. 48,000 crores (US$ 5.76 billion) for this over the length of five a long time. States/ ULBS/ ULBs are anticipated to coordinate similarly. Private division interest (PPP) as another source of financing must too be being mobilized. It is implied to develop models that can be duplicated to realize economical and comprehensive improvement, beacons for other trying cities.

1.1 WHAT IS AI

Counterfeit insights was said at a conference on computing in 1956. And a modest bunch of beat mathematicians and researchers took portion in a four-day-long conceptualizing venture around manufactured insights organized by John McCarthy at Dartmouth College. At final they made a proposal:"We suggest that a two-month, ten-person study on false insights be conducted at Dartmouth College during the summer of 1956. The idea is to proceed with the assumption that every learning perspective or other insight can, in principle, be so accurately represented that a computer could be programmed to replicate it. At a preparatory procedures permitted computers to talk English and fathom polynomial math problems.Artificial insights has changed from a field of science into a major drive in mass excitement and commercial innovation, from voice acknowledgment to therapeutic conclusion and, more as of late, voice-activated help and driverless

cars. So, AI is the computer program acting like a human, combining data from numerous sources and frameworks to form choices and identify designs.

1.2 THE FUTURE OF AI

In 1950s, Turing made predictions about thinking machines that served as the intellectual foundation for subsequent advancements in artificial intelligence (AI). In the 1980s and 2000s, Hinton and LeCun, two pioneers of neural networks, cleared the path for generative models. The 2010s deep learning explosion, in turn, drove significant advancements in natural language processing (NLP), text and image production, and medical diagnoses through picture segmentation, therefore extending the capabilities of artificial intelligence. These developments are culminating in multimodal AI, which appears to be able to accomplish anything. However, given multimodal AI was a result of earlier developments, what can multimodal AI lead to? Generic artificial intelligence (gen AI) has been developing since its birth.

Developers like OpenAI and Meta have already started to use smaller, less costly models in place of larger ones, enhancing AI models to do the same or more with less. As models like ChatGPT get more sophisticated and adept at comprehending the subtleties of human language, prompt engineering is evolving. Since LLMs have more specialized training, they may offer deep industry experience and become always-on agents prepared to assist with duties. Artificial Intelligence is not a new technology. It's not a stage. In order to maximize AI's advantages while reducing its hazards, more than 60 nations have created national AI policies.

2. KEEN CITIES VISION IN INDIA

Vision Due to the rise in urban populaces and the quick extension of locales, the government is investigating more brilliantly strategies for managing complexities, upgrading efficiencies, and bettering life quality. As a result, cities got to direct and join foundation in arrange to upgrade asset optimization and benefit arrangement for inhabitants. The point of the shrewd city activity is to make feasible and comprehensive urban situations that offer all the foundation for a great quality of life and a clean, feasible environment. It'll be conceivable through the integration of savvy arrangements, like data-driven activity administration, and brilliantly lighting frameworks. A smart city's essential infrastructural components are as follows:

- A sufficient quantity of water
- A guaranteed source of electricity
- Sanitation, which includes managing solid waste
- Effective public transportation and urban mobility
- Reasonably priced homes, particularly for the underprivileged
- Strong digitalization and IT connectivity
- Good governance, particularly citizen participation and e-governance
- A sustainable setting
- Safety and security of citizens, particularly women, children, and the elderly
- Health and education

3. ADMINISTRATIVE STRUCTURE

Three layers of monitoring are provided by Smart City guidelines: national, state, and local.

- National: The Secretary of the Service of Urban Advancement leads the Summit group, which is made up of representatives from related services and organizations. The group can approve plans and monitor the progress and distribution of reserves.
- High-Powered Controlling Committee (HPSC): For the State, a Tall Fueled Controlling Committee will be built up headed by Chief Secretary of the State to lead the complete Savvy City Mission.
- City: Each Keen City has set up a Shrewd City Counseling Gathering, which is chaired by the Area Collector. These incorporate giving reserves and overseeing, observing, and assessing Shrewd City improvement ventures. These incorporate the chairman, neighborhood individuals of the Authoritative Get together, individuals of Parliament, nearby youth, specialized specialists and district-based agents. Direct and enable Inhabitants.

3.1 FINANCING

The middle too helps India's Keen Cities Mission program. The recipients detail plans for usage in setting of stages 3 & 4 of the Shrewd City Mission proposition and be that as it may anticipates comparable responsibility on portion of the state governments & ULBs to execute exercises of the Shrewd City Proposition. For the Keen City Proposition ventures, states will distinguish subsidizing sources from the taking after (not constrained to):

State/ULB asset utilization- to be raised from obligation, credits, arrive monetization, recipient & affect expenses, client expenses and others. Using additional assets uncovered as a result of actualizing the Fourteenth Fund Commission's proposals. The utilize of unused era money related rebellious like Charge Increase Financing (TIF), Pooled Back Improvement Support Plot and bonds of metropolitan bodies with credit appraisals of ULBs. Through neighborhood and universal advances from monetary teach counting respective and multilateral

4. INTEGRATION WITH OTHER GOVERNMENT PROGRAMS

Two programs are beautiful much comparative within the touch of how to bring approximately alter to urban destitute: the Atal Mission for the Revival and Urban alter (AMRUT), and the Savvy Cities Mission. The previous is more area-based, and the last mentioned is project-based. Endeavoring to coordinated Shrewd Cities Mission with other programs and plans of Central and State Government can accomplish comparable benefits. Shrewd City Proposition at the arranging arrange must coordinated all these programs — AMRUT, Swachh Bharat Mission (SBM), National Legacy City Advancement and Expansion Yojana (HRIDAY), Computerized India, Expertise advancement, lodging for all, development of galleries supported by the Culture Office and all the other programs related to social framework, like wellbeing, instruction and culture.

5. COUNTRIES SUPPORTING INDIA'S SAVVY CITIES ACTIVITY

Beneath the Union Budget 2024-25, the Government of India has apportioned Rs. 2,400 crore (US$ 19.67 billion) for the Savvy Cities Mission in India.

As of July 12, 2024, these 100 cities comprise up to Rs 1,64,223 crore (US$19.67 billion) for 8,016 enterprises and Rs 1,45,083 crore (US$17.38 billion) for known completed ventures (7,218 projects). These 100 cities also include ventures for which orders have already been set.

The driving economies of the world are inquisitive about the shrewd city activity of India and see forward to collaborating for development. A few of these nations incorporate Spain, the Joined together States, Germany, Japan, France, Singapore, and Sweden.

	India and Spain have agreed to work together to transform Delhi into a smart city. The Barcelona Regional Agency in Spain has been interested in technology exchange with India.
	Ajmer, Rajasthan; Allahabad, Uttar Pradesh; and Visakhapatnam, Andhra Pradesh, would all became smart cities, based on an option issued by the United States Trade and Development Agency (USTDA).
	Singapore has shown interest in aiding India's Smart City Mission and has indicated a desire to help transform Amravati, the future capital of Andhra Pradesh, into a smart city. The nation is looking into the potential of modernizing and re-engineering the transportation sector as well as retrofitting the older parts of Indian cities.
	The concept of smart cities has also drawn interest from Italy, which has committed to investing US$1.2 trillion in various projects over the next 20 years. From advice services to the actual infrastructure construction, Italian companies will be involved in the planning and development of the smart cities.
	Delivering smart city planners with experience in governance, capacity building, reform implementation, and supply of water and sewerage management is the goal of an ongoing Indo-Canadian collaboration. This could lead to significant urban growth in the Indian states of Punjab, Haryana, and Rajasthan. The initiative will teach at least 150 professional areas planners and designers for the efficient & predictable design and execution of smart cities, despite developing specialized platforms and tools.

TABLE 1. COUNTRIES SUPPORTING INDIA'S SAVVY CITIES ACTIVITY

The Service of Lodging and Urban Issues beneath its lead Mission, Shrewd Cities Mission (SCM) showcased its accomplishments on January 18, 2024, amid the progressing 3 day Keen Cities India Expo at the 'National Savvy Cities Mission Pavilion' in Modern Delhi. A few other outstanding ventures were Prayagraj's Digitization of Compositions, Surat's Interfacing Past with Future, Udaipur's Area-Based Developmentand Indore's Chappan Dukaan venture. Organized by the India Exchange Advancements Organization (ITPO) and the Presentations India Gather, this expo too included conversation sessions at the Savvy Cities India Grants ceremony on January 19, 2024 and the City Leader's Conclave. These occasions are implied to bring together private business people and neighborhood authorities to talk about civil programs and to recognize ventures that offer assistance to form decent, economical and beneficial cities.

6. CHALLENGES

- Data Privacy: The objective of India's Personal Data Protection Bill is to control the methods of data collection, storage and use. A major challenge is finding a middle ground between these regulations and the freedom necessary for AI systems to train on and utilize large datasets during inference.
- Chief Artificial Intelligence OfficerSkill Gap: With the growing popularity of Artificial Intelligence, there is a shortage of qualified AI professionals in the job market. To bridge this gap, it will be necessary to implement robust educational initiatives, foster cooperation between industry and academia, and develop upskilling programs tailored to the needs of the AIsector. Infrastructure: The creation of sophisticated AI applications will necessitate high-performance computing resources, including GPUs, data centers, and 5G networks. Such infrastructure must be developed and expanded across in India, requiring significant investments.

7. OPPORTUNITIES

- Global Game Changer: With its massive talent base, burgeoning startup ecosystem, and ardent government policies, India has the potential to be a global game-changer in the AI sphere. As a center for research and development, India can set the international standards and practices for AI used in real-world implementations.
- Social Impact — Some of the most significant societal issues facing the world can be resolved by AI by providing everyone equitable access to high quality

healthcare to improving the outcomes of learning and increasing job opportunities in disadvantaged areas of economies.

- Hybrid Disciplines: New fields of application are leveraging insights from diverse areas like biology, engineering and user experience. Consultative platforms can help accelerate AI adoption across sectors and ensure that it is implemented ethically.

8. CONCLUSION

Nearly all the worldwide populace has been influenced in one way or another since of COVID-19; it has attacked most healthcare systems and economies, but within the taking after months after the lockdown, endeavours to construct 100 savvy cities in India have gone back to full throttle with the utilize of funds nearly multiplying. One of the enormous issues they confront is how to back keen cities. It requires an awesome budgetary use for foundation. To attain shrewd city plans effectively, the government of India is centering on open private organization and as of now PPP accounts for almost 21% of savvy city ventures. For occurrence, Sterlite Control and the Gurugram Metropolitan Advancement Specialist (GMDA) marked a PPP understanding in June 2020 to construct and oversee the fiber organize in Gurugram Sub 21 a long time in City 2. India, which has more than 4,000 cities and towns, has guarantee in numerous vital segments, such as lodging, job, IT, wellbeing and instruction, transportation, the environment, and cleanliness and sanitation. The Shrewd City Mission has drawn intrigued from beat economies over the globe, and the government has prioritized venture within the budgetary and IT administrations divisions.

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