

Tech Trends 2024 and Beyond (AI, Innovations, and Emerging Challenges)

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Why in News?

- 2024 has been a transformative year for technology, particularly Artificial Intelligence (AI).
- This year marked significant advancements in AI, responsible tech, and greener innovations, while also revealing challenges in adoption and ethical considerations.
- Predictions for 2025 hint at further developments and shifts in the tech landscape.

Tech Developments in 2024 (Key Highlights):

- **AI's growing influence:**
 - AI became all-pervasive, impacting various sectors and introducing existential questions.
 - Companies have recognised AI's potential but are recalibrating use cases due to difficulties in realising immediate returns.

- For individuals, AI acts as a “copilot,” supporting but not replacing human creativity and specialised skills.
- **Responsible AI and ethical concerns:**
 - The focus on responsible AI highlighted the importance of ethical considerations in deployment.
 - AI agents raised questions about autonomy and human intervention, particularly in sensitive areas like **healthcare and finance**.
- **Greener tech and sustainability:** Efforts to integrate sustainable practices into technology gained momentum, reinforcing the importance of eco-conscious innovations.
- **Missed predictions:** Though these trends gained popularity worldwide, predictions regarding the prevalence of a “cookieless world” and extended reality in India were not met.

Tech Predictions for 2025:

- **AI agents revolutionise automation:**
- **Adoption and capabilities:**
 - AI agents capable of autonomous learning and decision-making will become prevalent.
 - Use cases include handling routine tasks, data processing, and generating alerts for human oversight.
- **Consumer impact:** Personalised AI agents may shift interactions beyond the current chat-driven paradigm.
- **Death of dashboards:**
 - **GenAI in analytics:** Generative AI tools are set to replace traditional dashboards, answering complex queries with visual insights and predictions.
 - **Data evolution:** Data collection formats will adapt to support advanced analytics, requiring greater granularity and complexity.
- **Rise of not-so-social media:**
 - **Platform challenges:** TikTok faces uncertainty despite its popularity. Platforms like X (formerly Twitter) and Facebook struggle to retain users.
 - **User shifts:** Closed-group platforms and niche networks are gaining popularity among younger audiences.
- **Unmatched computing power:**
 - **Quantum leap:** Innovations like Google’s Willow chips and NVIDIA’s GPUs are pushing computing boundaries.
 - **Data challenges:** Computational advancements highlight the need for robust, complex data models to leverage full potential.
- **AI meets hardware:**
 - **Early failures and new hope:** Initial AI hardware attempts (e.g., Humane AI Pin) faced setbacks. 2025 might witness a new wave of AI-integrated hardware with targeted functionalities.
 - **Innovative devices:** Possible advancements include AI-led smartphones and laptops, replacing traditional apps and operating systems with AI agents.

Conclusion:

- 2024 underscored AI’s transformative potential while revealing its limitations and ethical implications.

- Predictions for 2025 suggest continued innovation, particularly in AI agents, analytics, and computing power.
 - The tech landscape is set for significant shifts as companies and users adapt to these advancements, navigating both opportunities and challenges.
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Q.1. What are the ethical challenges for AI adoption?

AI decisions are not always intelligible to humans. AI-based decisions are susceptible to inaccuracies, discriminatory outcomes, embedded or inserted bias.

Q.2. What is IndiaAI mission?

The IndiaAI mission aims to establish a robust AI computing infrastructure in India to support the development and testing of AI systems.

Source: IE

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