International Journal of Academic Research
P-ISSN: 2348-7666: Impact Factor: 7.215
Homepage: https://www.ijar.org.in/
Volume-13, Issue-3(2), Jul-Sep-2026
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Technology as the Backbone of Good Governance-Vision for India @ 2047

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Abstract
India is approaching the centenary of its independence in 2047 with a vision to become a developed, equitable, and sustainable republic. Achieving this ambitious goal requires governance that is transparent, accountable, efficient, and inclusive. Technology has emerged as a transformative enabler capable of reshaping the way governments interact with citizens, manage resources, and implement policies. This paper explores the role of technology as the backbone of good governance, emphasizing its potential to enhance administrative efficiency, ensure transparency, and promote social inclusion. Key technological interventions such as digital identity systems (Aadhaar), e-governance platforms (UMANG, DigiLocker, e-NAM), digital payment systems (UPI, AePS), and emerging technologies (AI, block chain, IoT, GIS) have already demonstrated significant impact in improving service delivery and accountability. The study also highlights the objectives of technology-driven governance, including improving citizen participation, bridging the digital divide, strengthening data security, and enabling data-driven policymaking. At the same time, it examines the challenges that India faces in implementing technology-enabled governance, such as digital literacy gaps, infrastructural limitations, cyber security risks, resistance to change, algorithmic biases, and coordination issues among governmental agencies.
Keywords: Technology, Digital, Government, Citizen, Back bone.

Introduction

Good governance is the foundation of a developed nation. In India, governance challenges such as bureaucratic inefficiency, corruption, lack of accountability, and inequitable service delivery have historically hindered development. The vision of India @ 2047 emphasizes a nation that is not only economically advanced but also socially just and environmentally sustainable.
Technology provides the tools and frameworks to achieve these goals by:

- Increasing efficiency and reducing administrative delays
- Enhancing transparency and accountability
- Promoting social inclusion and citizen empowerment
- Facilitating participatory and data-driven policy making

Several initiatives such as Digital India, Aadhaar, UMANG, DigiLocker, and UPI have laid the groundwork. The challenge now is to scale, integrate, and innovate

Objectives of Technology-Driven Governance

1. Enhancing Efficiency and Accountability
    - Automating administrative workflows to reduce delays and human error.
    - Enabling real-time monitoring of government programs and budgets.
2. Ensuring Transparency
    - Open data platforms for public scrutiny.
    - Block chain-based record-keeping for tamper-proof documentation.
3. Promoting Social Inclusion
    - Digital identity and financial inclusion systems for marginalized communities.
    - Ensuring access to government services for rural, tribal, and differently-baled populations.
4. Empowering Citizen Participation
    - E-participation platforms, grievance redressed portals, and public consultations.

- Mobile-based feedback systems for policy improvement.

5. Strengthening Security and Resilience
   - Cyber security measures to protect sensitive citizen and government data.
   - Disaster-resilient digital infrastructure to ensure continuity of services.

Key Technological Interventions in Governance

1. Digital Identity and Service Delivery
   - Aadhaar-based identification enables direct benefit transfers and targeted subsidies.
2. E-Governance Platforms
   - UMANG, DigiLocker, e-NAM, and GSTN provide unified access to government services.
3. Financial Inclusion and Digital Payments
   - UPI, mobile banking, and AePS (Aadhaar-enabled payment systems) expand financial access to rural populations.
4. Data-Driven Policy and Decision Making
   - Dashboards and predictive analytics allow policymakers to monitor schemes and optimize resource allocation.
5. Emerging Technologies
   - Artificial Intelligence (AI) for predictive governance and service optimization.
   - Blockchain for secure and transparent record management.
   - Internet of Things (IoT) and GIS for urban planning, agriculture, and disaster management.

Challenges in Technology-Enabled Governance

1. Digital Divide
   - Limited internet access and devices in rural areas.
   - Gender and socio-economic disparities in digital access.
2. Data Privacy and Cyber security Risks
   - Threats of data breaches, identity theft, and misuse of personal information.
3. Resistance to Change
   - Reluctance among bureaucrats and citizens to adopt new digital systems.
   - Lack of technical training and awareness.
4. Infrastructure Gaps
   - Inadequate connectivity in remote regions.
   - Power supply issues and device limitations.
5. Algorithmic Bias and Ethical Concerns
   - AI and automated systems may perpetuate societal biases.
   - Need for ethical governance frameworks.
6. Financial and Administrative Constraints
   - High cost of implementing new technologies.

Coordination challenges among multiple government departments

Strategic Roadmap for India @ 2047

Universal Digital Access

- Affordable broadband and Smartphone accessibility for every citizen.
- Community digital centers in villages and remote areas.

Robust Cyber security and Data Protection

- Strong legal frameworks to protect citizen data.
- Regular audits and security protocols for government databases.

Capacity Building

- Digital literacy programs for citizens, including women and marginalized groups.
- Training programs for government employees in emerging technologies.

Convergence of Emerging Technologies

- AI, blockchain, and IoT integrated into governance.
- Smart cities and rural digital hubs to decentralize development.

Citizens-Centric Governance

- Multilingual and easy-to-use digital platforms.
- Continuous feedback systems to improve policy formulation.

Inclusive Policy Design

- Special focus on differently-baled, women, and minority communities.
- Technology as a tool to reduce inequality and promote social justice.

Case Studies & Examples

- Aadhaar & DBT: Reduced leakages in subsidy delivery and improved transparency.
- UPI & Digital Payments: Revolutionized financial transactions in urban and rural India.
- e-NAM: Unified platform for farmers to trade agricultural products efficiently.
- DigiLocker: Eliminates dependence on physical documents for citizens.
- AI-based Urban Planning in Smart Cities: Optimizes traffic, water management, and energy use.

These examples illustrate how technology strengthens governance while promoting transparency, efficiency, and inclusion.

Conclusion

Technology is not just a tool but the backbone of modern governance. For India to realize its vision by 2047, digital innovation must permeate every level of government operations. Bridging the digital divide, ensuring data security, empowering citizens, and promoting ethical, inclusive practices are crucial. By adopting technology-driven governance, India can become a developed, equitable, and sustainable republic, setting a global example in transparency, efficiency, and citizen empowerment.

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