



सत्यमेव जयते
GOVERNMENT OF MAHARASHTRA



Strategic Roadmap for The Digital Transformation of Directorate of Technical Education



Government of Maharashtra, Maharashtra State

June 2026



महाराष्ट्र शासन

Glittering Memories

e-Governance





सत्यमेव जयते

DIRECTORATE OF TECHNICAL EDUCATION MAHARASHTRA STATE, MUMBAI

★ OUR ACHIEVEMENTS ★

*Excellence in Technical Education
Driving Innovation, Building Future*



PROUD MOMENTS OF LEADERSHIP & EXCELLENCE



RANKED NO. 1
Among 68 Directorates & Commissionerate across the State



100-DAY OFFICE IMPROVEMENT CAMPAIGN
Excellence in Office Performance



150-DAY E-GOVERNANCE PROGRAMME
Outstanding Performance in Digital Governance



INNOVATION & TECHNOLOGY DRIVEN
AI, GIS, Dashboard, Chatbots & Blockchain Adoption



COMMITTED TO EXCELLENCE
Continuous Improvements for Better Governance

This recognition reflects our commitment to Transparency, Innovation & Quality Education.



EMPOWERING YOUTH • ENRICHING SKILLS • BUILDING MAHARASHTRA



PREFACE

It gives me great pleasure to present this Policy Document on the phase-wise e-Governance transformation of the Directorate of Technical Education (DTE), Maharashtra.

In today's rapidly evolving digital era, governance must be transparent, efficient, accountable, and citizen-centric. The Directorate of Technical Education, which administers a vast network of Government, Aided, and



Private technical institutions across the State, has undertaken a visionary initiative to transform itself into a fully integrated e-Governance organization. This structured roadmap reflects Maharashtra's commitment to leveraging technology for strengthening public administration and enhancing service delivery.

The document outlines a comprehensive transformation framework implemented in a phased manner — beginning with foundational digital enablement, progressing through asset and financial digitization, and advancing toward regulatory reforms, integration, analytics, and smart governance. The successful deployment of digital systems such as HR-MIS, Infrastructure Inventory Management, Internal Revenue Generation, Final Approval Management, Budget Management, and the AEDP Monitoring Mechanism demonstrates a strong commitment to efficiency, transparency, and data-driven decision-making.

These initiatives significantly reduce manual processes, improve accuracy, strengthen audit readiness, and enhance coordination among stakeholders. The integration of secure cloud infrastructure, real-time dashboards, and advanced analytics lays a robust foundation for future-ready governance aligned with national missions such as Digital India.

I commend the Directorate of Technical Education and all associated offices and institutions for their dedication and collaborative efforts in implementing this transformative agenda. I am confident that this e-Governance initiative will further strengthen institutional governance, improve service delivery, and contribute meaningfully to the advancement of technical education in Maharashtra.

C. B. Patil

Shri Chandrakant Dada Patil

Hon'ble Minister of Higher & Technical Education,
Government of Maharashtra, Mumbai



PREFACE


The Higher and Technical Education Department, Government of Maharashtra, has consistently endeavoured to strengthen the quality, accessibility, and governance of technical education across the State. In an era marked by rapid technological advancements and increasing expectations for transparency and efficiency in public administration, the adoption of e-Governance has become both a necessity and an opportunity. The Directorate of Technical Education (DTE), Maharashtra, plays a pivotal role in regulating and administering a vast network of Government, Aided, and Private technical institutions. With the growing scale and complexity of operations, it is imperative to leverage technology to transform traditional administrative system.



This document on “*e-Governance Policy and its Implementation*” presents a comprehensive and structured roadmap for the digital transformation of DTE. The phase-wise approach outlined herein reflects a thoughtful progression—from foundational digitization to advanced integration, analytics, and smart governance—ensuring sustainability, scalability, and minimal disruption to existing processes. The initiatives undertaken by DTE, including Human Resource Management Information System (HR-MIS), Infrastructure Inventory Management System, Budget Management System, and other digital platforms, are commendable steps towards enhancing efficiency, accountability, and data-driven decision-making. These efforts not only streamline administrative functions but also significantly improve service delivery to institutions, stakeholders, and citizens at large.

The Department is committed to fostering a culture of innovation, capacity building, and continuous improvement to ensure successful implementation of these initiatives. The integration of emerging technologies such as Artificial Intelligence and advanced analytics further reinforces our vision of building a future-ready, transparent, and responsive governance ecosystem. I am confident that this policy document will serve as a guiding framework for achieving the vision of a fully integrated e-Governance organization within the Directorate of Technical Education. It will also act as a catalyst in strengthening governance practices and enhancing the overall quality of technical education in Maharashtra.

I extend my appreciation to DTE & his team involved in conceptualizing and implementing these initiatives, and I look forward to their continued commitment in this transformative journey.


Shri B. Venugopal Reddy

Additional Chief Secretary

Higher & Technical Education Department
Government of Maharashtra, Mumbai



PREFACE

It is a matter of great satisfaction to present this Policy Document outlining the phase-wise e-Governance transformation of the Directorate of Technical Education (DTE), Maharashtra.

The Directorate administers a vast and diverse network of Government, Aided, and Private technical institutions across the State. With increasing scale, complexity, and stakeholder expectations, it has become imperative to adopt structured, technology-driven governance mechanisms to ensure transparency,



efficiency, accountability with improved service delivery. This document presents a comprehensive roadmap to transform DTE into a fully integrated, data-driven e-Governance organization. The transformation has been conceptualized in a phased manner to ensure systematic implementation and minimal disruption. Beginning with foundational digital enablement and centralized databases, the initiative progresses through digitization of infrastructure and financial systems, regulatory workflow automation, and ultimately towards integrated dashboards, analytics, and smart governance frameworks. The successful implementation of key systems such as HR-MIS, Infrastructure Inventory Management System, Internal Revenue Generation Management System, Final Approval Management System, Web-based Budget Management System, and the AEDP Monitoring Mechanism reflects our commitment to institutional modernization and operational excellence.

These initiatives have significantly reduced manual processes, enhanced data accuracy, strengthened audit readiness, and improved coordination among Headquarter, Regional Offices, and institutions. The adoption of secured cloud infrastructure, role-based access controls, GIS integration, and advanced reporting mechanisms has laid a strong digital foundation for sustainable and scalable governance.

The Directorate remains committed to continuous improvement through capacity building, stakeholder engagement, and integration with State and National platforms. The proposed future initiatives, including the CHB Intelligent Portal and the Centre of Excellence in Artificial Intelligence further demonstrate our commitment to align technical education administration with emerging technological advancements.

I express my sincere appreciation to my colleagues at Directorate, especially IT team, Regional Offices, institutional heads, and all stakeholders whose dedication and collaborative efforts have made this transformation possible. I am confident that this e-Governance framework will continue to strengthen institutional governance, improve service delivery, and contribute significantly to the advancement of technical education in Maharashtra.

Dr. Vinod M Mohitkar

Director, Technical Education,
Maharashtra State



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GOVERNMENT OF MAHARASHTRA



Strategic Roadmap for The Digital Transformation of Directorate of Technical Education



Government of Maharashtra, Maharashtra State

June 2026

CONTENTS

Executive Summary	3
Strategic Roadmap for the Digital Transformation	4
1. Introduction	4
2. Vision and Objectives	4
2.1 Vision	4
2.2 Objectives	4
3. Guiding Principles	4
4. Stage-wise e-Governance Transformation Framework	5
Stage I: Foundational Digital Enablement (Year 1)	5
4.1 Objectives	5
4.2 Key Initiatives.....	5
4.2.1 Resources acquisition:	5
4.2.2 Human Resource Management Information System (HR-MIS).....	5
4.2.3 Web-based Budget Management System	6
Stage II: Asset, Infrastructure, and Financial Digitization (Year 2)	6
4.3 Objectives	6
4.3.1 Infrastructure Inventory Management System	6
4.3.2 Internal Revenue Generation Management System.....	7
Stage III: Regulatory and Service Delivery Digitisation (Year 3)	7
4.4 Objectives	7
4.4.1 Final Approval Management System for Private Institutes	7
Stage IV: Integration, Analytics, and Smart Governance (Year 4 and Beyond)	8
4.5 Objectives	8
4.5 Key Initiatives.....	8
5. Governance, Security, and Compliance	8
6. Capacity Building and Change Management	8
7. Expected Impact	8
8. Conclusion	9
Stage I: e-Governance Applications Implemented	10
A. Human Resource – Management Information System (HR-MIS)	10
B. Infrastructure Inventory Management System	16

C. Internal Revenue Generation Management System.....	21
D. Final Approval (अंतिम मान्यता) System: Unaided Private Institutes.....	27
E. Web-based Budget Management System	31
F. State-level Monitoring Mechanism for Apprenticeship Embedded Degree/Diploma Programmes (AEDP)	36
Stage II: Future e-Governance Projects/ Application	41
CHB Billing System (CHB Intelligent Portal).....	41
9. Recognition and Achievements	44
State-Level Recognition for Excellence in E-Governance Implementation	44
1. Recognition under the 100 Days Office Improvement Campaign (2025)	44
2. Recognition under the 150 Days E-Governance Programme (2026)	44
Impact of Digital Transformation.....	45

EXECUTIVE SUMMARY

The Directorate of Technical Education (DTE), Maharashtra State, is responsible for governance, regulation, planning, and monitoring of Government, Government-Aided, and Private Technical & Professional Institutions across the State.

Recognizing the growing need for transparency, efficiency, accountability, and data-driven decision-making, DTE Maharashtra initiated a comprehensive digital transformation programme aimed at transitioning from traditional administrative practices to a fully integrated e-Governance ecosystem.

The transformation has been undertaken through a structured, phase-wise approach focusing on digitization of human resources, infrastructure management, financial administration, institutional regulation, revenue generation, and programme monitoring. Leveraging modern cloud infrastructure, GIS technologies, centralized databases, workflow automation, and emerging Artificial Intelligence capabilities, DTE has established a robust digital governance framework that supports evidence-based policymaking and efficient service delivery.

Key initiatives implemented under this transformation include the Human Resource Management Information System (HR-MIS), Infrastructure Inventory Management System, Internal Revenue Generation Management System, Final Approval Management System for Private Institutions, Web-Based Budget Management System, and the State-Level Monitoring System for Apprenticeship Embedded Degree/Diploma Programmes (AEDP).

These initiatives have significantly reduced manual intervention, improved operational efficiency, enhanced transparency, strengthened financial and administrative accountability, and enabled real-time monitoring across institutions throughout Maharashtra.

The Directorate's commitment to digital governance has been recognised through prestigious State-Level Awards under the Government of Maharashtra's 100-Day Office Improvement Campaign (2025) and 150-Day E-Governance Programme (2026). These recognitions reflect DTE Maharashtra's leadership in adopting innovative technology solutions to strengthen governance and public service delivery.

The next phase of transformation focuses on integration of all digital platforms, advanced analytics, artificial intelligence-enabled decision support systems, and intelligent governance applications that will further strengthen Maharashtra's technical education ecosystem.

STRATEGIC ROADMAP FOR THE DIGITAL TRANSFORMATION

1. INTRODUCTION

The Directorate of Technical Education (DTE), Maharashtra State, plays a pivotal role in planning, regulation, and administration of technical education across Government, Aided, and Private Institutions. With increasing scale, complexity, and stakeholder expectations, there is a pressing need to adopt e-Governance to improve efficiency, transparency, accountability, and service delivery.

This policy document outlines a phase-wise roadmap for transforming DTE into a digitally enabled organization by leveraging Information and Communication Technology (ICT) through integrated digital platforms.

2. VISION AND OBJECTIVES

2.1 VISION

To transform the Directorate of Technical Education, Maharashtra into a transparent, efficient, data-driven, and citizen-centric e-Governance organization.

2.2 OBJECTIVES

- i. Digitize core administrative and regulatory functions of DTE.
- ii. Establish centralized, reliable, and real-time databases.
- iii. Enhance transparency, accountability, and auditability.
- iv. Improve service delivery to institutions, employees, and stakeholders.
- v. Reduce manual processes, delays, and administrative overhead.
- vi. Enable data-driven policy formulation and decision-making.

3. GUIDING PRINCIPLES

- i. Digital by Default.
- ii. Process Re-engineering before Digitization.
- iii. Interoperability and Integration.
- iv. Security, Privacy, and Data Integrity.
- v. Role-based Access and Accountability.
- vi. Scalability and Sustainability.

4. STAGE-WISE E-GOVERNANCE TRANSFORMATION FRAMEWORK

The transformation is planned and implemented in four strategic phases, ensuring minimal disruption while enabling gradual adoption and capacity building.

STAGE I: FOUNDATIONAL DIGITAL ENABLEMENT (YEAR 1)

4.1 OBJECTIVES

- i. Establish core digital infrastructure.
- ii. Digitize internal administrative processes.
- iii. Create reliable centralized databases.

4.2 KEY INITIATIVES

4.2.1 RESOURCES ACQUISITION:

Acquired High-speed Networking (CWN), and Cloud Services (IaaS, PaaS, and SaaS) for enabling the e-Governance Modules.

4.2.2 HUMAN RESOURCE MANAGEMENT INFORMATION SYSTEM (HR-MIS)

Scope

Coverage of over 4,870 employees across 12 Head/ Regional Offices with 58 Government and 48 Aided Institutions

Key Features

- i. Centralized employee master database.
- ii. Service records, postings, promotions, leaves, retirements.
- iii. Role-based dashboards for officers.
- iv. Audit-ready digital records.

Outcomes

- i. Faster HR processing.
- ii. Improved data accuracy and transparency.
- iii. Elimination of duplicate and manual records.

4.2.3 WEB-BASED BUDGET MANAGEMENT SYSTEM

Scope

Budget proposal submission and consolidation for 58 Government Institutions and 48 aided non-government institutions.

Key Features

- i. Online submission and validation of budget proposals.
- ii. Automated calculations and error checks.
- iii. Digital approvals and tracking.

Outcomes

- i. Reduction in processing time.
- ii. Improved financial accuracy.
- iii. Reduced administrative overhead.

STAGE II: ASSET, INFRASTRUCTURE, AND FINANCIAL DIGITIZATION (YEAR 2)

4.3 OBJECTIVES

- i. Digitize physical and financial assets.
- ii. Improve utilization and oversight.
- iii. Strengthen internal revenue governance.

4.3.1 INFRASTRUCTURE INVENTORY MANAGEMENT SYSTEM

Scope

Infrastructure and movable assets of 58 Government Institutions and 12 Head/ Regional offices.

Key Features

- i. Centralized asset registry.
- ii. GIS-enabled location mapping.
- iii. Asset lifecycle tracking.
- iv. Role-based dashboards and analytics.

Outcomes

- i. Enhanced asset visibility and utilization.
- ii. Accurate planning and maintenance.
- iii. Improved audit and compliance readiness.

4.3.2 INTERNAL REVENUE GENERATION MANAGEMENT SYSTEM

Scope

Testing and Consultancy projects across 58 Government Institutions.

- i. Key Features
- ii. End-to-end project lifecycle management.
- iii. Tracking of receipts, expenses, and revenue sharing.
- iv. Automated government revenue calculations.
- v. Financial dashboards.

Outcomes

- i. Transparency in revenue generation.
- ii. Improved financial discipline.
- iii. Increased institutional accountability.

STAGE III: REGULATORY AND SERVICE DELIVERY DIGITISATION (YEAR 3)

4.4 OBJECTIVES

- i. Digitize regulatory workflows.
- ii. Improve stakeholder experience.
- iii. Reduce delays and discretion.

4.4.1 FINAL APPROVAL MANAGEMENT SYSTEM FOR PRIVATE INSTITUTES

Scope

Approval of new institutes, courses, and intake capacities.

Key Features

- i. Online application and document submission.
- ii. Digital scrutiny and verification.
- iii. Online fee payment.
- iv. Grievance redressal and tracking.
- v. Automated approval workflows.

Outcomes

- i. Transparent and time-bound approvals.
- ii. Reduced physical interface.
- iii. Improved coordination among agencies.

STAGE IV: INTEGRATION, ANALYTICS, AND SMART GOVERNANCE (YEAR 4 AND BEYOND)

4.5 OBJECTIVES

- i. Integrate all digital systems.
- ii. Enable advanced analytics and decision support.
- iii. Institutionalise continuous improvement.
- iv. Using AI Tools for Inferential and Predictive Analysis.

4.5 KEY INITIATIVES

- i. Integrated DTE Digital Dashboard.
- ii. Management Information System (MIS) and Decision Support System (DSS).
- iii. Data analytics for manpower planning, infrastructure optimisation, and financial forecasting.
- iv. Integration with State and National e-Governance platforms.
- v. Mobile access and citizen-facing services.

5. GOVERNANCE, SECURITY, AND COMPLIANCE

- i. Compliance with IT Act, Data Protection guidelines, and the Government of Maharashtra IT policies.
- ii. Role-based access control and audit trails.
- iii. Regular security audits and backups.
- iv. Disaster recovery and business continuity planning.

6. CAPACITY BUILDING AND CHANGE MANAGEMENT

- i. Training programs for DTE officers and institutional staff.
- ii. User manuals and helpdesk support.
- iii. Awareness programs to promote digital adoption.
- iv. Continuous feedback and system refinement.

7. EXPECTED IMPACT

- i. Significant reduction in processing time and paperwork.
- ii. Enhanced transparency and accountability.
- iii. Improved institutional governance.
- iv. Better utilization of public resources.
- v. Data-driven policymaking.
- vi. Improved trust among stakeholders.

8. CONCLUSION

The phase-wise e-Governance transformation of the Directorate of Technical Education, Maharashtra, is modernising governance processes, enhancing service delivery, and establishing a robust digital foundation for the future of technical education administration in the State. This policy provides a structured roadmap to ensure sustainable, scalable, and citizen-centric digital governance.

The structured roadmap is being implemented in two stages. Stage I elaborates the details of eight modules developed in-house at DTE. Stage II presents the futuristic initiatives planned to take up the momentum ahead.

STAGE I: E-GOVERNANCE APPLICATIONS IMPLEMENTED

A. HUMAN RESOURCE – MANAGEMENT INFORMATION SYSTEM (HR-MIS)

Problem Statement

The Directorate of Technical Education (DTE), Maharashtra State, Mumbai, oversees more than 63 Government and 49 Aided technical institutions with over 5,000 employees across six regional offices. Earlier, HR activities such as manpower management, transfers, grievance handling, and reporting were handled manually, leading to delays, lack of transparency, and inefficiencies. This created a need for a centralized and automated Management Information System.

Objectives

- Digitize and streamline HR administration
- Create a centralized employee database
- Improve transparency and accountability
- Enable data-driven decision-making
- Reduce administrative delays

Usage

HR-MIS is used by DTE Headquarters, Regional Offices, Institutes, MSBTE, and RBTE for:

- Employee data management
- Post and vacancy tracking
- Online transfers
- Grievance monitoring
- Real-time reporting

Benefits

- Faster processing of administrative tasks
- Improved data accuracy
- Enhanced transparency
- Centralized access to HR data
- Scalable system architecture

Impact

- Strengthened governance
- Better coordination among institutions

- Effective manpower planning
- Support for digital governance initiatives

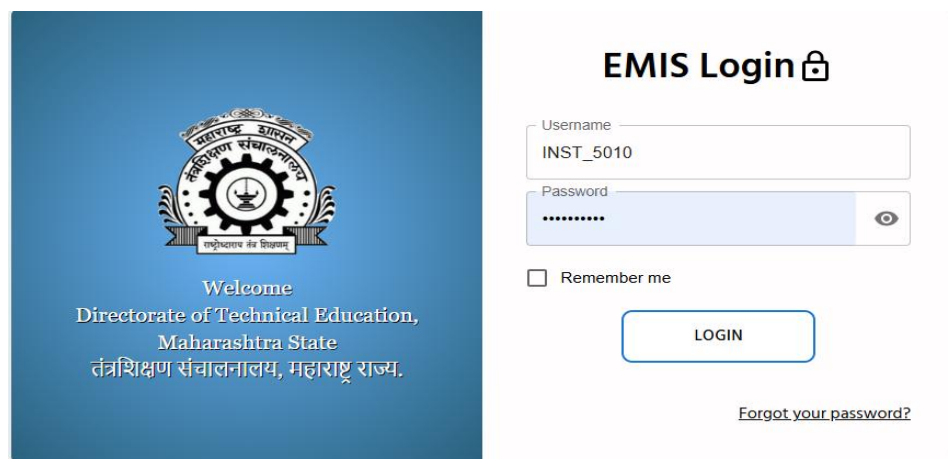
Outcome

- Fully digitized HR framework
- Transparent and efficient transfer system
- Reliable data for policy formulation
- Improved service delivery

Application Functionality

The Employee Management Information System (EMIS) is a centralized, web-based application developed by the Directorate of Technical Education (DTE), Maharashtra, to manage employee-related administrative processes across Government and Government-Aided Technical Institutions.

The application enables institutes to enter and update employee records, manage sanctioned, filled and vacant posts, and initiate employee transfers. Regional Offices and DTE Desks verify and approve the data through defined workflows. The system ensures accuracy, transparency, and efficiency in human resource administration.



The image shows a screenshot of the EMIS Login page. On the left, there is a blue banner with the logo of the Directorate of Technical Education, Maharashtra State, and the text: "Welcome Directorate of Technical Education, Maharashtra State तंत्रशिक्षण संचालनालय, महाराष्ट्र राज्य." On the right, the login form is titled "EMIS Login" and contains the following elements: a "Username" field with the value "INST_5010", a "Password" field with masked characters and a visibility toggle, a "Remember me" checkbox, a "LOGIN" button, and a "Forgot your password?" link.

EMIS Login Page

Welcome: Government Polytechnic, Chhatrapati Sambhajinagar

Vacancy Dashboard

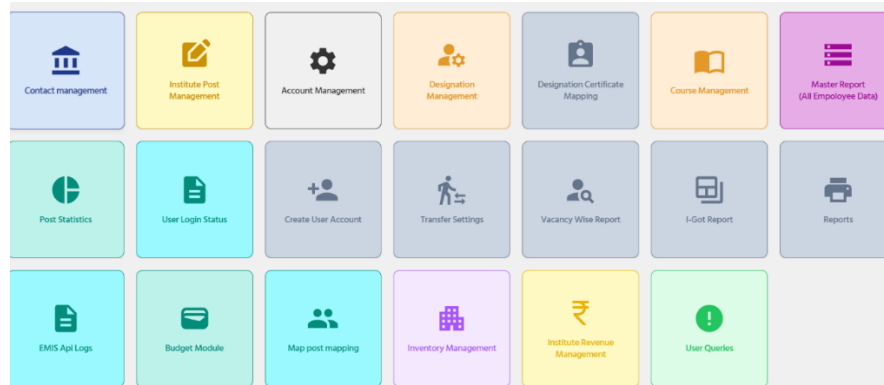
Manage and view institute/office post vacancies

Technical Non-Technical

Search Filters

Sr.	DESIGNATION	COURSE LEVEL	COURSE NAME	SHIFT	SANCTION POST	FILLED POST	VACANT POST
1	Principal	DIPLOMA	N/A	1	1	1	0
2	Head of Department (HdO)	DIPLOMA	Civil Engineering	1	1	1	0
3	Head of Department (HdO)	DIPLOMA	Civil Engineering	2	1	1	0
4	Head of Department (HdO)	DIPLOMA	Information Technology	1	1	0	1
5	Head of Department (HdO)	DIPLOMA	Electrical Engineering	2	1	0	1
6	Head of Department (HdO)	DIPLOMA	Electrical Engineering	1	1	1	0

Institute Vacancy Dashboard



Admin Home Page

Stakeholders (Users)

The EMIS application supports multiple stakeholders with defined roles:

- Employee – Views profile, submits correction requests, applies for transfer.
- Institute – Creates and updates employee records, manages institute posts and vacancy details.
- Regional Office (RO) – Verifies and approves institute data and transfer details.
- MSBTE Office – Manages and validates employee data related to MSBTE and RBTE.
- RBTE Office – Manages and validates employees' data.
- DTE Desk – Oversees state-level administration, post management, transfers, and reports.
- Admin – Manage all functionalities.

Output

EMIS generates various outputs required for administration and decision-making, including employee lists, sanctioned and vacant post statistics, transfer annexures, qualification-wise reports, and real-time MIS dashboards. Reports are available in PDF and Excel formats.

Information Available

The system maintains comprehensive information such as employee personal and service details, qualification records, post and vacancy details, transfer history, and institute master data. All information is stored in a centralized database ensuring consistency and audit readiness.

Future Scope with Scalability

EMIS is designed for scalability and future expansion. Planned enhancements include advanced analytical dashboards, AI-based forecasting and decision support, mobile and WhatsApp integration for employee self-service, and AI-powered agents for quick data retrieval and reporting.

Hardware / Software Used

Software Technologies:

- Backend: Node.js, Express.js
- Frontend: React.js
- Containerization: Docker
- CI/CD: Automated CI-CD pipelines.
- Cloud Platform: Amazon Web Services (AWS)

Hardware / Infrastructure:

- Cloud-based servers hosted on AWS.
- Load balancers and scalable compute resources.
- Secure storage for databases and documents

Security Features

The system incorporates strong security measures, including role-wise access control, OTP-based login, token-based authentication, encrypted password storage, protection against DDoS attacks, regular data backups, application versioning, and secure deployments through CI/CD pipelines.

Career Advancement Scheme (CAS) Management Module

As part of its commitment to digital transformation, transparent governance, and employee-centric service delivery, the Directorate of Technical Education (DTE), Maharashtra has successfully developed and implemented an integrated **Career Advancement Scheme (CAS) Management Module** within the Human Resource Management Information System (HR-MIS) for employees of Government and Government-Aided Technical Institutions.

The module provides a comprehensive end-to-end digital platform for processing CAS proposals, replacing the conventional paper-based system with a transparent, efficient, and auditable workflow. Employees can securely submit and maintain detailed academic, professional, and service-related information, including:

- Educational qualifications and additional certifications
- Service records and experience details
- Training programmes, faculty development programmes, and workshops attended
- Research publications, books, chapters, and conference papers
- Patents, copyrights, innovations, and technology transfers
- Participation in seminars, conferences, and professional activities
- Awards, recognitions, and academic contributions
- Supporting documents and evidentiary records

The system incorporates a structured multi-level scrutiny and approval mechanism involving:

- Institution-Level Verification by the Head of Institution
- Regional Scrutiny Committee Review
- Directorate-Level Screening and Evaluation Committees
- Final Approval and Record Management

Key features of the CAS Management Module include:

- Online submission and tracking of CAS proposals
- Automated eligibility verification based on applicable Government and AICTE norms
- Digital document repository and centralized record management
- Workflow-based scrutiny, approval, and remark management
- Deficiency identification and online compliance submission
- Automated notifications, alerts, and status updates
- Committee-wise agenda generation and proposal management
- Digital audit trails ensuring accountability and transparency
- Role-based access control for employees, institutions, regional offices, and Directorate officials
- Comprehensive MIS reports and analytical dashboards for monitoring proposal status and pendency

The centralized repository created through the CAS module serves as a valuable academic and professional database of faculty members across the State. The system enables quick retrieval of employee credentials for manpower planning, accreditation support, policy formulation, and institutional performance assessment.

Outcomes and Impact

- Significant reduction in proposal processing time.
- Elimination of repetitive manual verification and paperwork.
- Improved transparency, consistency, and accountability in CAS processing.
- Enhanced data accuracy through centralized digital records.

- Real-time monitoring of proposal status at all administrative levels.
- Creation of a state-wide faculty academic profile repository.
- Strengthened governance through audit-ready digital workflows.

The implementation of the CAS Management Module represents a major milestone in DTE Maharashtra's e-Governance journey, demonstrating the effective use of technology to modernize human resource administration and improve employee service delivery across the technical education ecosystem.

B. INFRASTRUCTURE INVENTORY MANAGEMENT SYSTEM

Problem Statement

The DTE administers 58 Government Institutions along with 12 offices. However, there was no centralized digital platform to systematically manage and track infrastructure and movable assets across these establishments. As a result, asset and requirement data were compiled in a fragmented manner from time to time, leading to duplication of efforts, inconsistencies and inaccuracies. Real-time information was also not available for effective monitoring and decision-making. To address this, assets are being mapped in 35 layers with support from MRSAC, enabling comprehensive spatial representation and improved planning.

Objectives

- To provide comprehensive asset tracking.
- To capture detailed institutional profiles.
- To integrate with GIS.
- To provide role-based access & dashboards.
- To provide data verification workflow

Usage

The system is used by DTE Headquarter (Planning and Purchase sections), Regional Offices and Government Institutes for following functionalities:

- Monitors a wide range of physical infrastructure, including land, buildings, classrooms, laboratories, libraries, workshops, and amenities like solar systems and water tanks.
- Captures essential requirements such as committee establishments, safety measures, and academic compliance.
- Employs Asset Map Linking using point, line, and polygon markers to spatially map buildings, roads, electrification, and grounds.
- Features specific modules for Institutes to enter data and Regional Offices (RO)/Admin to monitor and verify information through specialized dashboards.
- The workflow includes a mechanism to "Verify" or "Unverify" assets; verification locks the data to prevent unauthorized modifications, ensuring data integrity.
- Centralizes the management of furniture, equipment, and other movable items, allowing admins to update or delete items from a master list.

Benefits

- **Enhanced Data Accuracy:** The structured verification and locking process ensures that the inventory data remains reliable and tamper-proof once finalized.
- **Strategic Visualization:** GIS mapping provides a clear geographical overview of assets across the state, aiding in better resource distribution and planning.
- **Operational Efficiency:** Automates the reporting process, allowing users to generate consolidated asset reports, "Flag Data" reports, and Excel downloads instantly.
- **Centralized Oversight:** Enables the DTE IT Cell and Regional Offices to monitor institutes' data status and compliance metrics from a single interface.
- **Transparency:** Provides a clear audit trail of asset purchase years, costs, and current conditions (e.g., seating capacity, room dimensions).

Impact

- Availability of updated data on a single platform has enabled effective de-duplication.
- The system has ensured systematic management and tracking of infrastructure and movable assets.
- GIS-based visualization of assets has supported better planning and informed decision-making.
- Statistical reports provide valuable insights into the status and availability of assets.

Outcome

- A fully digitized, centralized Infrastructure and Asset Inventory has been implemented across DTE offices and Government Institutions.
- Reliable and standardized data is now used for planning, budgeting and preparation of project proposals, resulting in improved decision-making.

Overview

The **Infrastructure Inventory Management System** is a comprehensive, web-based solution developed to digitally manage and monitor infrastructure and movable assets across Government Offices and Educational Institutions under the Directorate of Technical Education (DTE), Maharashtra State.



The system replaces fragmented, manual data collection with a **single, centralized, real-time platform**, ensuring accuracy, transparency, and efficiency in institutional asset management.

Application Functionality

The platform enables end-to-end digital management of institutional assets through:

- Centralized login via EMIS portal with role-based access.
- Detailed infrastructure mapping (Building → Floor → Rooms/Facilities).
- Asset lifecycle management (Add, Edit, Track, Print).
- GIS-based Asset Mapping (Point, Line, Polygon)
- Institute-wise and asset-wise reporting.
- Printable and exportable asset records.
- Integration with MRSAC portal through Web Map Service for spatial visualization.
- Regional Offices can verify assets that institutes are unable to update and, if required, unverify them to allow institutes to make updates.
- Asset-wise and sub-asset-wise inventory reports.
- Excel-downloadable datasets as per role.

This ensures **real-time availability of verified infrastructure data** for monitoring and decision-making.

Stakeholders (Users)

The system is designed for multiple levels of governance and administration:

- Institutes – Institutes fill the asset information
- Regional Offices – Coordinate Institutes in their regions and verification of assets filled.
- DTE Desk 9 / Desk11 – Planning, policy formulation, and oversight

Each user operates under **controlled permissions**, ensuring accountability.

Output

The system generates structured and actionable outputs such as:

- A fully digitized, centralized Infrastructure and Asset Inventory has been implemented across DTE offices and Government Institutions.
- Reliable and standardized data is now used for planning, budgeting and preparation of project proposals, resulting in improved decision-making.
- GIS-based visual asset representations.

These outputs support **audits, planning, budgeting, and policy decisions.**

Information Available

The system captures comprehensive institutional data, and 33 assets including:

- Academic & Administrative Buildings
- Classrooms, Laboratories, Workshops, Libraries
- Hostels, Staff Quarters, Guest Houses
- Roads, Electrification, Compound Walls, Gardens, Grounds
- Water Tanks, Security Cabins, Gates, Sheds, Gyms
- Land Records, Parking, Solar Installations
- Movable Items with quantity, cost, and purchase year
- GIS-linked assets (Point, Line, Polygon mapping, MRSAC Assets Mapping)



This creates a **single source** for institutional assets.

Future Scope & Scalability

Built on modern web architecture, the system supports future expansion such as:

- Predictive maintenance and lifecycle forecasting
- Mobile application integration
- IoT-based real-time asset monitoring
- Expansion across additional departments and institutions
- Norms by Apex Body (AICTE, PCI,COA) and affiliating bodies (University/MSBTE) to find the requirement of infrastructure.
- Integration with EMIS, Courses, Revenue Generation Module.
- Use of AI to predict the infrastructure requirements and additional course.
- Enhance the utilization of hi end resources to generate revenue by Testing, Consultancy and short term courses.

The platform is designed for **horizontal and vertical scalability**.

Hardware / Software Used

Software Stack –

Backend: Node.js (Express.js) - Frontend: Next.js - Database: Postgres SQL database - GIS: Integrated Open Layer spatial mapping services

Hardware/Infrastructure Requirements – AWS Cloud Services, Docker Containerization. CI/CD Pipeline Integration.

Security Features

Security is embedded across all layers:

- Centralized authentication via EMIS application
- Role-based access control (RBAC), Secure session management using JWT.
- Controlled data modification rights. Access Rate Throttling.
- Server-side validation and audit-friendly data structure, Regular Data backups.
- Secured deployments through CI/CD Pipelines.

This ensures **data confidentiality, integrity, and compliance**.

Conclusion

The DTE Infrastructure Inventory Management System establishes a **robust, transparent, and scalable digital ecosystem**, empowering institutions and policymakers with accurate data, spatial insights, and operational efficiency for informed governance.

C. INTERNAL REVENUE GENERATION MANAGEMENT SYSTEM

Problem Statement

The DTE supervises 58 Government Institutions. Teaching and non-teaching staff undertake Testing and Consultancy services for various organisations to support internal revenue generation. Earlier, there was no comprehensive digital mechanism to manage the complete lifecycle of such projects. As a result, tracking of project receipts, expenditures and Government revenue distribution lacked standardization and end-to-end transparency. A robust system was therefore required to ensure transparent financial handling, structured approvals and accurate monitoring of project activities and employee payments

Objectives

- To provide end-to-end lifecycle management for Testing and Consultancy projects.
- To enable systematic financial tracking of IRG activities including receipts, expenses and distributions.
- To provide role-based dashboards for monitoring performance at Institute, Regional Office and DTE levels.
- To integrate with HR-MIS for personnel management and accurate employee linkage.
- To support GIS-enabled site/activity tracking using location coordinates and photographs.
- To automate workflows, verification mechanisms and MIS reporting

Usage

- The system is used by DTE Headquarter, Regional Offices and Government Institutes for following functionalities:
- Facilitates the registration, management, and closure of Consultancy and Testing projects.
- Provides a transparent method for handling project receipts, expenses, and government revenue distribution.
- Offers tailored interfaces for Institutes, Regional Offices (RO), and the DTE to monitor metrics like active projects, financial balances, and employee involvement.
- Allows institutes to assign employees to projects, define roles, and manage payment distributions
- Includes tools for tracking project progress through latitude/longitude coordinates and site photographs
- Generates comprehensive reports, including project summaries, employee-wise payment lists, and order-wise distribution
- Implement a systematic approval process where Regional Offices verify institute-level projects and payment orders

Benefits

- **Enhanced Transparency:** Ensures accurate and visible tracking of financial transactions and employee remuneration, supporting audit requirements.
- **Operational Efficiency:** Replaces manual handling with a streamlined digital workflow for project orders, receipts, and reporting activities.
- **Centralised Monitoring:** Enables the DTE to oversee regional and institute-level performance through real-time data and visual evidence of field activities.
- **Improved Accuracy:** Reduces errors in revenue calculation and employee workload distribution through standardised automated systems.
- **Accountability:** Provides a structured verification module that ensures all projects and orders are scrutinised by higher authorities before final closure.

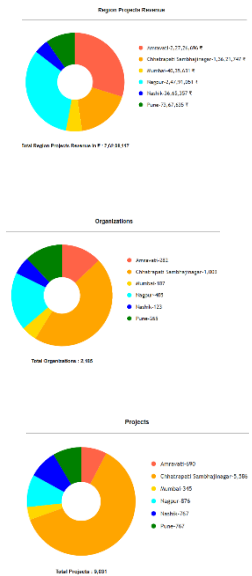
Impact

- Established a robust and transparent monitoring mechanism for Testing and Consultancy activities across Government Institutions.
- HR-MIS integration ensured accurate staff data linkage, improving correctness in project assignment and payment distribution.
- Real-time dashboards and statistical reports enabled identification of best-performing institutions/employees and supported evidence-based decision-making.
- Strengthened financial accountability and audit readiness through structured tracking of receipts, expenses, and revenue distribution.

Outcome

- Implemented a fully digitized, scalable end-to-end framework for IRG activities—from project initiation and assignment to report submission and closure.
- Ensured standardized workflows for verification and approvals across Institute, Regional Office, and DTE levels.
- Enabled automated reporting for monitoring revenue generation, employee payments, and order-wise distributions.
- Achieved improved governance and operational efficiency by replacing manual processes with structured digital processes

- Record financial transactions: Add Receipt, Add Revenue; manage employee Due Amount.
 - Generate Project Summary and Download/Print Project Report.
 - Close Project workflow: submit closure reason; sent to RO for verification; RO can verify or reopen for correction.
- f) Payment Order (Office Order Management)
- Create and manage office/payment orders: Add/Edit/Delete Office Order.
 - Manage order employees: Add/Edit/Delete Order Employee.
- g) Order Locking & RO Verification
- View order summary and Print.
 - Verify/Lock order to forward to RO for verification and closure.
 - RO may reopen and return if discrepancies found.
- h) Reports Module
- Project Summary Report (filters; export to Excel).
 - Order Wise Report.
 - Project-wise Employee Report.
 - Employee Project Payment Distribution Report.
 - Employee Order Payment Distribution Report.
 - Project Site Image Analysis Report (Lat/Long, photos).
 - Project Site Analysis Report.
- i) User Manual Access
- Option to view the User Manual within the application for guidance.



Stakeholders (Users)

The system is designed for multiple levels of governance and administration:

- Institutes – Institutes fill the project information
- Regional Offices – Coordinate Institutes in their regions and verification of Project filled.
- DTE Desk11 – Planning, policy formulation, and oversight

Each user operates under **controlled permissions**, ensuring accountability.

Output

The system generates structured and actionable outputs such as:

- **Institute-level dashboard summary** showing projects, organisations served, employees, receipts, expenses and revenue.
- **Complete project records** (Consultancy/Testing) with employee mapping, status (active/closed) and printable project reports.

- **Digitised receipt and revenue entries** with uploaded supporting documents (Project Receipt & Government Receipt PDFs).
- **Automated revenue sharing outputs**, including Government share and employee distribution details.
- **Generated Office/Payment Orders** with order-wise employee payment distribution for disbursement.
- **Audit-ready reports and RO verification outputs**, including Excel reports and verification/closure status

Information Available

- **Organisation Information** – details of organisations/clients served (type, domain, profile details).
- **Project Information** – consultancy/testing project details, status (active/closed), timelines and linked organisation.
- **Employee Information** – project-wise employee mapping, roles, technical/non-technical category.
- **Financial Information** – receipts received, expenses recorded, revenue deposited, due amount details.
- **Revenue Sharing Information** – government share and employee distribution share (order/project-wise).
- **Document & Verification Information** – uploaded receipts (PDFs), office orders, lock/verification status and RO approval trail.

Future Scope & Scalability

Built on modern web architecture, the system supports future expansion such as:

- **Advanced MIS dashboards & analytics** for institute-wise trends, comparisons and performance ranking.
- **Forecasting and predictive analytics** to estimate future revenue and project demand using historical data.
- **Integration with payment gateway & auto-reconciliation** for digital receipt collection and automated accounting.
- **Integration with IFMS/PFMS/Treasury systems** for automated government share transfer and employee payments.
- **Enhanced compliance & audit features** such as digital audit trail, alerts for missing documents and deviation checks.
- **Scalable rollout across institutes** with role-based approvals, SLA monitoring and mobile-enabled workflows.

Hardware / Software Used

Software Stack – Backend: Node.js (Express.js) - Frontend: Next.js - Database: MySQL database

Hardware/Infrastructure Requirements – AWS Cloud Services, Docker Containerization. CI/CD Pipeline Integration.

Security Features

Security is embedded across all layers:

- Centralized authentication via EMIS application
- Role-based access control (RBAC), Secure session management using JWT.
- Controlled data modification rights. Access Rate Throttling.
- Server-side validation and audit-friendly data structure, Regular Data backups.
- Secured deployments through CI/CD Pipelines.

This ensures **data confidentiality, integrity, and compliance**.

Conclusion

The DTE Infrastructure Internal Revenue Generation Portal establishes a robust, transparent, and scalable digital ecosystem, empowering institutions and policymakers with accurate data, spatial insights, and operational efficiency for informed governance.

D. FINAL APPROVAL (अंतिम मान्यता) SYSTEM: UNAIDED PRIVATE INSTITUTES

Problem Statement

The Directorate of Technical Education (DTE), Maharashtra State, Mumbai, has more than 1500 professional institutes under its purview, catering to technical education throughout Maharashtra State. Every year, new institutes are established, or new courses are introduced in the existing institutes with permission from the Apex body, viz., AICTE, PCI, CoA. Such institutes need final approval from the Directorate to participate in the centralised admission process. Since the existing process of giving final approval is manual, so leading to delays and a lack of transparency in getting the final approval. This created a need for a centralised and automated Approval mechanism, which is called the Final Approval Management System.

Objectives

- Create a centralised Institute database for institutes having approval from the Apex body
- Improve transparency and accountability
- Enable data-driven decision-making
- Reduce administrative delays

Usage

- Final Approval Management System is used by DTE Headquarters, Regional Offices and Institutes, for:
- Online Verification of Documents
- Acceptance of the Approval & processing Fees through DD.
- Grievance monitoring
- Giving final approval
- Real-time reporting

Benefits

- Faster processing of administrative tasks
- Enhanced transparency
- Centralized access to data

Impact

- Strengthened governance
- Better coordination among institutions & RO
- Effective manpower planning

- Support for digital governance initiatives

Outcome

- Fully digitized Institute framework
- Transparent and efficient system
- Reliable and readily availability of reports for approvals
- Improved delivery service

Application Functionality.

Institutes can submit applications online for an increase in intake capacity or for approval of new courses for the current academic year. The application follows a structured workflow where submitted applications are first routed to the Regional Office (RO) for verification. After RO level verification, applications are forwarded to the DTE Desk for final scrutiny and approval.

The system supports form filling, document upload, workflow-based verification, application locking, status tracking, notifications, dashboards, audit logs, and final approval publishing.

Directorate of Technical Education, Maharashtra State
द.त.वि.स. संस्थानात्मक, महाराष्ट्र राज्य

dteoms@dteimaharashtra.gov.in
022-68597469 / 8080529147

Antim Approval Portal

Login

Username *

Password *

[Forgot Password?](#)

[Login --](#)

New institutes will receive a default credentials in below format.
Username: INST_dtecode
Password: Inst@dtecode
Example: If your DTE code is 0001, your Username will be INST_0001 and Password Inst@0001.

DTE Final Approval Portal Login Page

Stakeholders (Users).

The application supports multiple stakeholders with role-based access:

Institute Users:

- Submit intake Increase or new course applications
- Upload required documents

- Track application status and receive notifications

RO Office Users:

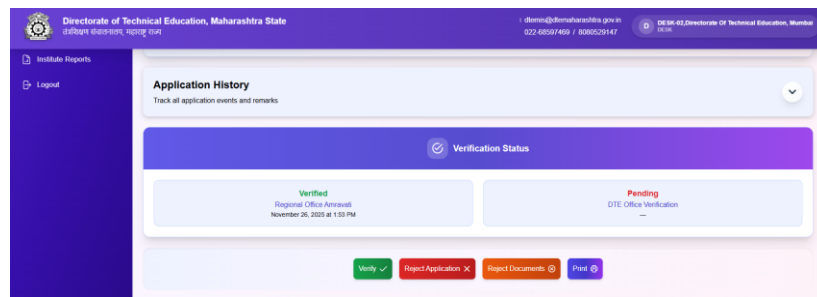
- Verify institute details and documents
- Approve or reject applications at RO level
- Forward verified applications to DTE Desk

DTE Desk Users:

- Perform final verification
- Approve or reject applications
- Publish final approval orders

Output.

The system generates outputs such as approved or rejected applications, official approval records, downloadable reports, audit logs, and real-time dashboards. These outputs ensure transparency, traceability, and regulatory compliance.



DTE Desk login

Information Available.

The portal stores institute profiles, course details, previous and proposed intake capacity, uploaded supporting documents, verification remarks, approval history, timestamps, and user activity logs. Access to information is controlled through role-based authorization.

Future Scope with Scalability.

The system is designed to support future scalability and enhancements. Potential future scope includes:

- Mobile application integration
- AI-based document verification
- Advanced analytics and reporting
- Integration with national education portals
- Support for higher concurrent users using cloud auto-scaling

Hardware / Software Used.

Software Stack:

- Backend: Node.js, Express.js
- Frontend: React.js
- Containerization: Docker
- CI/CD: Automated build and deployment pipelines
- Cloud Platform: AWS (EC2, S3, RDS, Load Balancer)

Hardware:

- Cloud-hosted servers on AWS infrastructure

Security Features.

The application incorporates robust security mechanisms including:

- Role-wise login and access control
- OTP-based authentication
- Encrypted password storage
- Token-based authentication (JWT)
- DDoS protection using AWS Shield and Load Balancers
- Regular data backups
- Application versioning
- Secure CI/CD pipelines and audit logging

E. WEB-BASED BUDGET MANAGEMENT SYSTEM

Problem Statement

The Directorate of Technical Education (DTE), Government of Maharashtra, Mumbai, administers 58 Government Institutions, 12 administrative offices and 48 Government-aided technical institutions through six Regional Offices, with a workforce of more than 5,000 employees. Every year, all establishments are required to submit head-wise budget proposals in a prescribed format to the Head Office. The proposal for a financial year includes: (i) head-wise actual expenditure for the previous three years on Salary and Non-Salary objects, (ii) revised expenditure for the current year (4 months/8 months), and (iii) estimates for the ensuing year. Earlier, these proposals were prepared manually and submitted physically as per the schedule issued by DTE. The manual process led to discrepancies, inconsistent data and lack of uniformity across proposals. Scrutiny required repeated corrections before acceptance. Overall, the process was time-consuming, costly and error-prone, as compilation and validation were carried out by manually linking data in spreadsheet (.XLS) files.

Objectives

- To digitize and streamline the budget management.
- To integrate with HR-MIS for preparation of most accurate budget for the Salary expenses based on filled employees' particulars and vacant posts.
- To improve accuracy, transparency and accountability.
- To reduce administrative overhead, expenses and time delays

Usage

- The system is used by DTE Head Office, Regional Offices, Institutes, MSBTE, and RBTE for:
- Submission of the budget head wise Expenses for previous three years details
- Submissions of budget head wise current financial year's (4 Month / 8 Months) expenses.
- Estimating next year's budget head wise expenses for Salary and Non-Salary.
- Integration with HR-MIS ensures uniformity and accuracy as actual data of staff position and their current pay-scales for calculation as the salary expenses are system generated.
- The proposal submitted by Aided Institute are scrutinized by Regional Offices which are forwarded to DTE.

Benefits

- Reduces time and cost involved in budget submission by eliminating physical visits to DTE offices.

- Improves accuracy of calculations, ensures data consistency, enhances transparency, and uniformity across the establishment.
- Easy coordination between the HR Team and Budget Team as data is integrated by system.
- No manual calculations or linking
- Enhanced transparency
- Role based access to Institutes, Regional Offices and desks of the DTE,
- Scalable system architecture

Impact

- Enabled end-to-end digitization of budget proposal preparation and scrutiny, resulting in stronger governance and compliance.
- HR-MIS integration ensured uniformity and accurate salary estimation based on sanctioned strength, vacancies and pay details.
- Improved coordination between Institutes, Regional Offices and DTE desks through a common, role-based workflow.
- Reduced discrepancies and manual errors by eliminating physical submission and spreadsheet-based linking of data.
- Enhanced transparency and accountability through standardized formats, validations and system-generated calculations.

Outcome

- Implemented a fully digitized, scalable and reliable Budget Management System for head-wise proposals across DTE and affiliated offices.
- Achieved transparent, accurate and realistic budget preparation supported by validated and uniform data across institutions.
- Ensured reliable availability of budget data and reports for planning and decision-making.
- Significant savings in administrative time, cost and effort by removing manual compilation and in-person submission processes.

Application Functionality.

- The functionalities are as follows
- **User & Login** - Create Estimation Officer account via Principal/Office login and Auto-generated credentials, OTP verification and mandatory first-time password reset.
- **Office Setup (One-time)** - Update Office City Type (metro/HRA/CLA) – locked after submission.
- **Bank Details** : Update institute/office bank details for budget processing.

- **Budget Entry & Estimation** : Other than Salary: budget head-wise amount entry (₹ in thousands) with description and PDF upload; status shows filled/pending.
- Salary: filled/vacant post salary estimation and submission (FY-wise).
- FY 2025–26 & 2026–27: post type/status entry, retire marking, salary breakup (TA = 0 for vacant); NPS not applicable.
- **Annexure / Receipts**: Annexure–7 (जमा महसूल) entry under Plan Indicator (FY 2022–23 to 2026–27).
- **Reports (Prapatra)**: Prapatra 1/1A (FY 2022–23 to 2024–25), 2/2A (FY 2025–26 term-wise), 3/3A (FY 2026–27). Prapatra 4 (post salary & status), 5 (sanctioned post expense), 6 (sanctioned post), 7 (plan indicator).
- **Module Unlocking** : RO: unlock/lock institute modules (module-wise or all). Desk 15: report access and unlock/lock modules for all institutes.

Stakeholders (Users).

- The system is designed for multiple levels of governance and administration:
- Institutes – Government and Aided Institutes fill the budget information.
- MSBTE - Head Office and its regional offices
- Regional Offices – Coordinate Institutes in their regions and verification of assets filled.

DTE Desk 7/ Desk 9/ Desk15 – Planning, policy formulation, and oversight

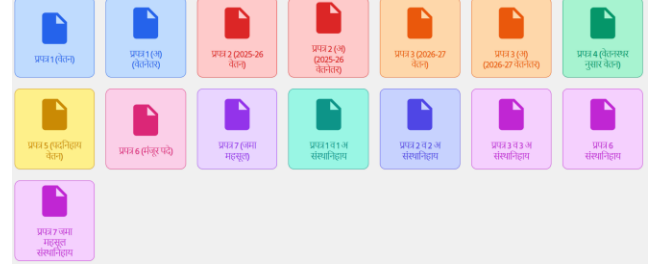
Each user operates under **controlled permissions**, ensuring accountability.

Output.

- Implemented a fully digitized, scalable and reliable Budget Management System for head-wise proposals across DTE and affiliated offices.
- Achieved transparent, accurate and realistic budget preparation supported by validated and uniform data across institutions.
- Ensured reliable availability of budget data and reports for planning and decision-making.
- Significant savings in administrative time, cost and effort by removing manual compilation and in-person submission processes.

Information Available.

The system maintains detailed financial records of all participating institutes and offices. It provides expenditure data for the last three financial years, revised budget data for the current financial year, and proposed estimates for the next year. It also displays employee-related salary information obtained from the



प्रपत्र - 1 (अ) (वेतनेतर)

सन-2022-2023 या आर्थिक वर्षातील वेतनेतर बाबीवरील प्रत्यक्ष खर्च

अर्थसंकल्पीय लेखाशिर्षाचे नांव: 2203 0022

(रु. हजार)

अ.क्र.	(02) मजूरी	(03) अति. भत्ता	(06) द्र.वी पा शुल्क	(10) कंत्राटी सेवा	(11) दे. प्र. खर्च	(13) का.खर्च	(14) भा.प.क	(16) प्रकाशने	(17) संगणक खर्च	(21) सा. व पुरवठा	(24) पे.ते.व वंगण	(26) जाहिरात	(27) ल. बांधकामे	(28) व्या. सेवा	(50) इतर खर्च	(52) यं.सा.व सा.सा	एकूण वेतनेतर खर्च	एकूण वेतनावरील खर्च	एकूण वेतन व वेतनेतर
1	15	193	2592	917	715	3189	181	0	297	0	256	65	0	0	0	0	8420	114416	122836
एकूण	15	193	2592	917	715	3189	181	0	297	0	256	65	0	0	0	0	8420	114416	122836

PRINT EXCEL

HR-MIS, including sanctioned strength, filled posts, vacancies, and pay scales. This consolidated data ensures accurate budgeting and transparency in the financial planning process.

Future Scope with Scalability.

- The application is designed to be scalable, supporting a growing number of institutes and administrative offices.
- The system can be enhanced with advanced reporting dashboards.
- It can include predictive analytics for improved budget forecasting.
- AI-based anomaly detection can be integrated to identify irregularities.
- The application can be expanded for mobile and tablet access for wider usability.
- The Budget Head and Institutions can be added.

Hardware/Software Used.

The system is built using modern and reliable technologies.

- MySQL is used for database management.
- The backend is developed using Node.js and Express.js, and the frontend is built with React.
- Docker is used for containerization to ensure portability and consistent deployment.
- CI-CD pipelines are implemented for automated build and deployment.
- AWS cloud services are used for hosting and scalability.

The application can run on standard cloud-based infrastructure.

Security Features.

Role-wise login ensures authorized access to system modules.

- OTP-based authentication provides additional security.
- Passwords are stored in encrypted form.
- Token-based authentication secures user sessions.
- DDoS protection safeguards the application from cyber threats.
- Automated data backup ensures data reliability and recovery.
- Application versioning supports controlled updates and maintenance

F. STATE-LEVEL MONITORING MECHANISM FOR APPRENTICESHIP EMBEDDED DEGREE/DIPLOMA PROGRAMMES (AEDP)

Problem Statement

The Apprenticeship Embedded Degree/Diploma Programme (AEDP), implemented under the National Apprenticeship Training Scheme (NATS), is being executed across multiple universities and technical institutions in the State. Due to the scale and distributed nature of implementation, there was no dedicated State-level mechanism to centrally monitor programme progress, ensure uniform data reporting, or provide real-time visibility to State and Central authorities. This resulted in challenges related to data consolidation, validation, timely reporting, and evidence-based decision-making.

The Directorate of Technical Education (DTE), Maharashtra has developed a Management Information System (MIS) to monitor and track the implementation of Apprenticeship Embedded Degree/Diploma Programmes (AEDP) across the state. The system supports eligible universities and Higher Educational Institutions (HEIs) as key stakeholders and enables structured monitoring, reporting, and decision-making for effective AEDP execution.

Objective

The objective of the Directorate of Technical Education (DTE) in developing the AEDP Management Information System (MIS) portal is to establish a centralized, State-level monitoring platform. The portal aims to enable real-time tracking of AEDP implementation, ensure availability of authentic and validated data, strengthen coordination among stakeholders, and support policy review and strategic decision-making at the State as well as Ministry and Secretary levels.

Impact

The implementation of the AEDP MIS portal has significantly strengthened governance and administrative oversight of apprenticeship-embedded programmes. It has improved transparency, accountability, and coordination across institutions. The availability of standardized and real-time data supports evidence-based policymaking, facilitates timely interventions, and enhances the effectiveness of programme monitoring at both State and Central levels.

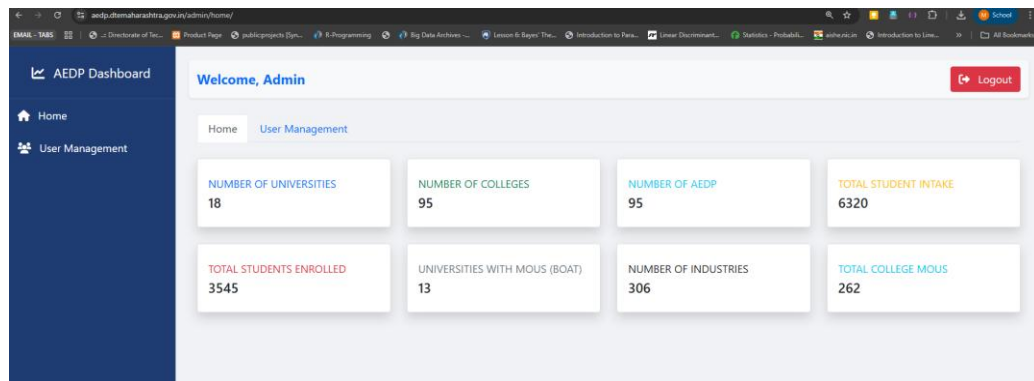
Outcome

The AEDP MIS portal has resulted in the creation of a consolidated and reliable State-level data repository covering institutions, student enrolment, apprenticeship engagement, and programme progress. It complements the national NATS 2.0 portal by addressing State-specific monitoring requirements and ensures consistent, accurate, and up-to-date reporting for review and evaluation purposes.

Current AEDP Implementation Snapshot (As per MIS Dashboard)

- Number of Universities: 18
- Number of Colleges: 95
- Number of AEDP Programmes: 95
- Total Approved Student Intake: 6,320
- Total Students Enrolled: 3,545
- Universities with MoUs (BoAT–WR): 13
- Participating Industries: 306
- Total College–Industry MoUs: 262

Admin Dashboard



University Management

The screenshot shows the AEDP University Management page. It features a sidebar on the left with 'Home' and 'User Management' options. The main content area displays a 'Welcome, Admin' message and a 'Logout' button. Below this, there are two tabs: 'Home' and 'User Management' (selected). The page title is 'University Management'. It contains a table with the following columns: University (Username), Full Name, Email, Group, and Actions.

University (Username)	Full Name	Email	Group	Actions
UN008	Karmveer Bhaurao Patil University	N/A	Group B	Report, Analysis, Summary, Curriculum
UN004	Dr. Homi Bhabha State University	N/A	Group B	Report, Analysis, Summary, Curriculum
UN003	SNDT Women's University	N/A	Group B	Report, Analysis, Summary, Curriculum
UN014	Swami Ramanand Teerth Marathwada University	N/A	Group A	Report, Analysis, Summary, Curriculum
UN012	Punyashlok Ahilyadevi Holkar Solapur University	N/A	Group A	Report, Analysis, Summary, Curriculum
UN002	Kavayitri Bahinabai Chaudhari North Maharashtra University	N/A	Group B	Report, Analysis, Summary, Curriculum
UN016	Hyderabad (Sindh) National Collegiate University	N/A	Group A	Report, Analysis, Summary, Curriculum
UN015	Dr. Babasaheb Ambedkar Marathwada University	N/A	Group A	Report, Analysis, Summary, Curriculum
UN009	Dr. Babasaheb Ambedkar University of Technology	N/A	Group B	Report, Analysis, Summary, Curriculum
UN010	Savitribai Phule Pune University	N/A	Group A	Report, Analysis, Summary, Curriculum
UN017	COEP Technological University	N/A	Group A	Report, Analysis, Summary, Curriculum
UN018	Lakshminarayan University of Technology	N/A	Group A	Report, Analysis, Summary, Curriculum

Application Functionality

- Online monitoring of AEDP implementation status across universities/HEIs
- Capturing institutional, programme, and student-level AEDP data
- Tracking apprenticeship enrollment and progress under NATS

- Periodic data updates and validation by stakeholders
- Centralized dashboard for DEPARTMENT to review implementation progress

Stakeholders (Users)

- Directorate of Technical Education (DTE), Maharashtra
- Eligible Universities in Maharashtra
- Affiliated Higher Educational Institutions (HEIs)
- Institutional AEDP Coordinators
- Policy and Monitoring Officials (HTED/DHE)

Output

- Real-time status reports on AEDP adoption and implementation
- University-wise and institute-wise progress summaries
- Consolidated state-level AEDP implementation reports
- Data inputs to support policy review and corrective actions

Information Available

- List of eligible universities and HEIs offering AEDP
- AEDP programme details (UG/PG/Diploma, duration, embedding semesters)
- Student enrollment details under AEDP
- Apprenticeship status mapped with NATS framework
- Compliance and progress indicators for monitoring

Future Scope with Scalability

- Integration with NATS 2.0 portal for automated data exchange
- Expansion to cover additional skill-based and apprenticeship-linked programmes
- Advanced analytics for outcome-based monitoring (employability, completion rates)
- Scalability to support increasing number of institutions and users
- State-to-national level data sharing and benchmarking

Hardware / Software Used

- Centralized server or state data center infrastructure
- Web-based MIS application
- Relational database for structured data storage
- Standard browsers for user access

Security Features

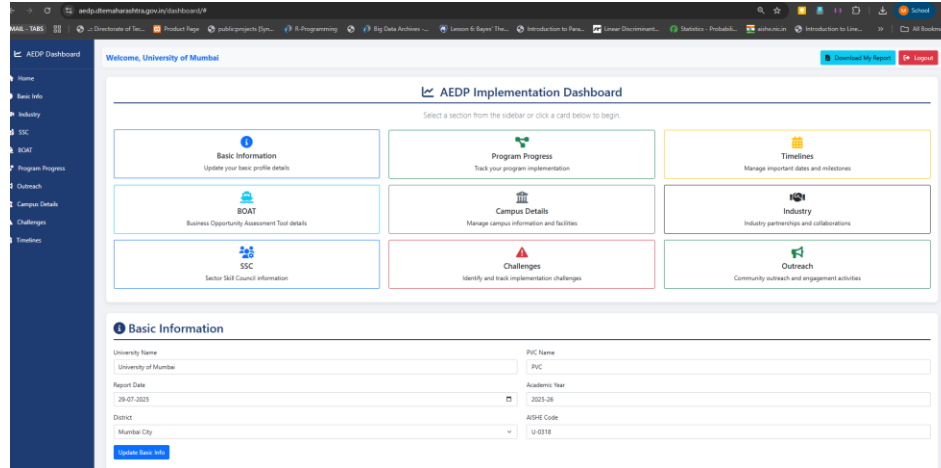
- Role-based access control for different stakeholders
- Secure login and authentication mechanisms
- Data validation and controlled data submission
- Regular backups and audit trails
- Compliance with government IT and data security guidelines

AI Tools Used (Proposed)

- Currently rule-based data validation and reporting
- Proposed use of AI/ML for:
 - Automated anomaly detection in reporting data
 - Predictive analytics for AEDP uptake and outcomes
 - Intelligent dashboards and decision-support systems
 - Chatbot-based user support for institutions

This MIS acts as a critical digital governance tool for strengthening industry-integrated education and ensuring effective implementation of AEDP across Maharashtra.

University Dashboard



Sample Report

Industry Engagement & MoUs

Industry Name	Sector	MoU	Start	Valid Till	Stipend	Contact Person	AEDP Programme	Location	Engagement	Students
A3B PROJECTS PVT.LTD	Interior Design	No	N/A	N/A	N/A	Anjali Tiwari A3B Projects (P) Ltd. 9699662211 anjalee@a3b.in	B Des(Interior Design)	A3B PROJECTS PVT.LTD ADDRESS: 505, 5 floor, Universal Business Park, A3B, A wing Chandivli Farm Rd next to Micro Lab, Saki Vihar, Andheri East, Mumbai-400072	Curriculum, Apprenticeship, Assessment, Training	0
AMRUT TECHNOLOGY SOLUTIONS	Manufacturing Sector - (Decorative and Industrial Paints, Coatings, and related products)	Yes	July 15, 2025	July 15, 2030	N/A	AMRUT TECHNOLOGY SOLUTIONS Mr. K B NINSE Administration Head -	B Sc (Paint Technology)	A-602, REGENCY PARK CHS, CHAKRI NAKA, KALYAN EAST, THANE, MAHARASHTRA-421306	Curriculum, Apprenticeship, Assessment, Training	0
Eduhub Pvt Ltd	Sports, Physical Education, Fitness & Leisure Skills	No	N/A	N/A	N/A	Mr Amit Gupta - COO - Eduhub Pvt Ltd	Bachelor of Sports Science	Fleet House, Ground Floor, Andheri - Kurli Road, Gamdevi, Fevicol Marol Naka Metro Station, Beside Marol Naka Aqua Line Metro Station, Mumbai - 400059, Maharashtra, India.	Curriculum, Apprenticeship, Assessment, Training	0
Veena Patil Hospitality Pvt Ltd	Travel and Tourism	No	N/A	N/A	N/A	Ms Annie Almeida HR Manager 8879972294	BMS (Travel and Tourism)	Veena Patil Hospitality Pvt Ltd, Neelkanth Corporate Park, Vidyavihar, West - 400086	Curriculum, Apprenticeship, Assessment, Training	0
Total Student Commitment										207

Conclusion

The State-level AEDP MIS portal developed by the Directorate of Technical Education, Mumbai, represents a key governance initiative aimed at strengthening monitoring, transparency, and coordination of apprenticeship-embedded education programmes. By enabling real-time oversight and data-driven decision-making, the system contributes to the effective implementation of AEDP and supports the broader objective of enhancing student employability and industry readiness.

STAGE II: FUTURE E-GOVERNANCE PROJECTS/ APPLICATION

CHB BILLING SYSTEM (CHB INTELLIGENT PORTAL)

Objective

The primary objective of the CHB Billing System is to design, develop, implement, and maintain an integrated, secure, and scalable **AI-assisted e-Governance portal** for managing the end-to-end lifecycle of Clock-Hour-Basis (CHB) lecturers across institutions under the Directorate of Technical Education (DTE), Maharashtra. The system aims to **automate faculty requirement calculation, recruitment, attendance tracking, bill generation, approvals, and treasury integration**, while ensuring compliance with government norms, audit readiness, and transparency. AI is used strictly in an assistive and rule-based manner, with all statutory decisions retained by authorized officials.

Scope

The scope covers design, development, hosting, deployment, testing, operation, and maintenance of the CHB Portal, including:

- Faculty requirement calculation and vacancy identification
- Auto-generation of bilingual (Marathi & English) advertisements
- Online application management and document scrutiny
- Interview, selection, and appointment workflows
- Faculty login for attendance and workload logging
- Automated monthly bill generation and multi-level approval (Institute → RO → Directorate → Treasury)
- Audit trail, MIS reporting, and compliance monitoring
- AI-assisted modules for validation, anomaly detection, and decision support
- Secure cloud hosting with DC/DR, scalability, and SLA compliance

The solution caters to multiple stakeholders: DTE/DHE/DOA administrators, Regional Offices, Institute Principals, System Administrators, and CHB Lecturers.

Resources Required

- **Human Resources:** Project Manager, Business Analysts, UI/UX Designers, Developers, QA/Test Engineers, DevOps/Cloud Engineers, and Support Staff
- **Technology & Infrastructure:** Government-approved cloud hosting (DC & DR), application servers, databases, security tools (SSL, MFA, encryption), AI components (rule engine, OCR/NLP), and monitoring tools

- **Software & Licensing:** Portal application, AI assistive modules, reporting tools, and testing automation tools (with perpetual licenses owned by DTE)
- **Operational Support:** Helpdesk, training, documentation, and ongoing maintenance

Impact

The system significantly reduces manual effort, processing delays, and human errors in CHB faculty management and billing. It enhances operational efficiency, transparency, governance, and financial discipline, while enabling faster approvals and improved compliance with audit, RTI, and vigilance requirements. Institutions benefit from standardized workflows and real-time visibility, and faculty experience smoother onboarding and timely payments.

Outcome

- End-to-end digitization of CHB processes
- Faster recruitment cycles and accurate faculty deployment
- Reduced bill rejections and treasury objections
- Strong audit trails and MIS reporting
- Improved accountability, data integrity, and policy compliance
- Scalable, future-ready platform aligned with e-Governance standards

Conclusion

The CHB Billing System represents a **robust, transparent, and intelligent governance solution** that aligns technology with regulatory discipline. By combining automation, assistive AI, and secure cloud infrastructure, the portal modernizes CHB faculty management while preserving human oversight and statutory control. Its successful implementation will result in **efficient administration, financial accuracy, and strengthened trust** among all stakeholders within the technical education ecosystem.

9. RECOGNITION AND ACHIEVEMENTS

STATE-LEVEL RECOGNITION FOR EXCELLENCE IN E-GOVERNANCE IMPLEMENTATION

The Directorate of Technical Education (DTE), Maharashtra State, Mumbai, has consistently demonstrated its commitment towards digital transformation, transparent administration, and citizen-centric governance through the effective implementation of various e-Governance initiatives across the State's technical education ecosystem.

In recognition of its outstanding performance, innovation, and successful execution of digital governance reforms, the Directorate has been conferred **two prestigious State-Level Awards consecutively by the Government of Maharashtra** during the years 2025 and 2026.

1. RECOGNITION UNDER THE 100 DAYS OFFICE IMPROVEMENT CAMPAIGN (2025)

The Directorate received a State-Level Commendation Certificate under the Government of Maharashtra's **100 Days Office Improvement Campaign** for successfully implementing administrative reforms, process automation, digital record management, and efficient public service delivery. The award acknowledged the Directorate's efforts in improving organisational efficiency, reducing manual processes, and strengthening accountability through technology-enabled governance.

2. RECOGNITION UNDER THE 150 DAYS E-GOVERNANCE PROGRAMME (2026)

Subsequently, the Directorate was honoured under the Government of Maharashtra's **150 Days E-Governance Programme** for its exemplary contribution towards digital governance and technology-driven public administration. The award recognised the Directorate's initiatives in implementing integrated online services, digital workflow systems, data-driven decision-making processes, and enhanced stakeholder services through robust ICT infrastructure.

Key E-Governance Initiatives Contributing to the Recognition

The Directorate has implemented several transformative initiatives, including:

- End-to-end online admission processes for technical education programmes.
- Digital governance platforms for institutes, students, and administrative offices.
- Online approval and monitoring systems.
- E-office implementation and paperless administration.
- Digital scholarship and student service delivery mechanisms.
- Real-time data management and analytics systems.
- Integrated grievance redressal and citizen service platforms.
- Transparent and technology-enabled monitoring of educational institutions.

IMPACT OF DIGITAL TRANSFORMATION

These initiatives have significantly improved administrative efficiency, transparency, accountability, and service delivery across the technical education sector in Maharashtra. The recognition received through these State-Level awards reflects the Directorate's leadership in adopting innovative digital solutions and its continued commitment to supporting the Government of Maharashtra's vision of good governance through technology.

The Directorate remains dedicated to further strengthening e-Governance frameworks and leveraging emerging technologies to provide efficient, transparent, and citizen-centric services to students, institutions, and stakeholders throughout the State.

The implementation of integrated e-Governance systems has transformed the administrative and regulatory functioning of the Directorate of Technical Education, Maharashtra.

Administrative Efficiency

Digitization of key processes has substantially reduced paperwork, manual data handling, repetitive verification activities, and administrative delays. Online workflows have enabled faster processing, approval, and monitoring of various activities across institutions and regional offices.

Transparency and Accountability

Role-based access controls, digital audit trails, automated workflows, and centralized data repositories have enhanced transparency across all governance processes. Decision-making is now supported by authenticated and verifiable digital records.

Data-Driven Governance

The availability of real-time institutional, employee, infrastructure, financial, and programme-related data has strengthened evidence-based policy formulation and strategic planning at State level.

Improved Financial Governance

Digital systems for budget management and internal revenue generation have improved financial monitoring, expenditure planning, revenue tracking, and compliance with Government procedures.

Enhanced Institutional Monitoring

Centralized dashboards and analytical reports enable continuous monitoring of institutional performance, infrastructure availability, manpower deployment, and programme implementation across Maharashtra.

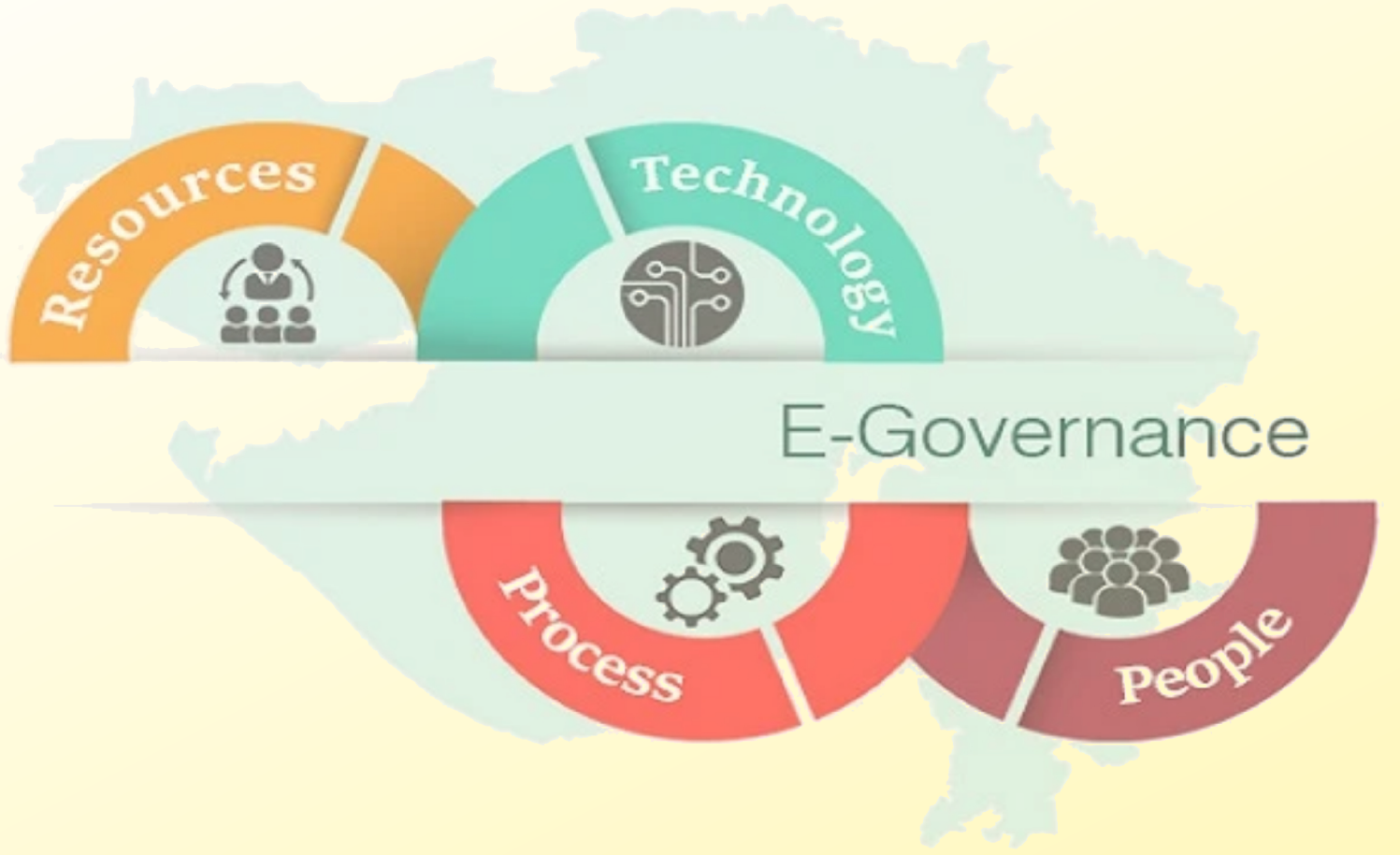
Citizen-Centric Service Delivery

Digital platforms have reduced physical interaction requirements, improved accessibility of services, and enhanced stakeholder satisfaction through transparent and time-bound service delivery mechanisms.

Foundation for Smart Governance

The current e-Governance ecosystem establishes a strong foundation for future integration of Artificial Intelligence, predictive analytics, intelligent decision-support systems, and automated governance services that will support the next generation of public administration.





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