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स्वच्छ भारत एक कदम स्वच्छता की ओर | Digital India Power To Empower | MeitY Government of India | NIC एनआईसी National Informatics Centre

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Technology update articles

एनआईसी NIC

Informatics

Volume 34 No. 2, October 2025

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Editorial

In an era where technology shapes how we communicate, learn, and work, its influence on democratic values has become unmistakable. At this intersection of innovation and civic life lie vast opportunities to broaden participation, alongside challenges that demand careful reflection. When guided with foresight and responsibility, technology becomes a partner in inclusion and national development. Digital systems today fortify the pillars of democracy—transparency, accountability, and public participation. Citizens can join conversations in real time, share perspectives widely, and follow matters of governance more closely than ever before. Easy access to information empowers individuals to make informed choices and engage with public issues more meaningfully.

As digital services expand, governance itself is undergoing transformation. Online platforms, electronic service delivery, and modern tools for civic interaction are helping public systems become more responsive and efficient. These solutions reduce delays, curb discretion, and bring administration closer to the people.

Yet, with these advancements come new challenges. Misinformation, cyber risks, and unequal digital access threaten the trust that binds citizens to institutions. The Digital Personal Data Protection Act, 2023, reinforces the principle that personal data must be handled responsibly and with respect for individual dignity. It promotes clearer communication, secure data handling, and mechanisms that grant citizens greater control over their information. While not a complete answer, it represents an important step toward strengthening public confidence in the digital realm.

Ensuring that technology benefits everyone remains a national priority. Bridging the digital divide—through wider connectivity, digital literacy, and inclusive design—is essential for meaningful participation. Every citizen, regardless of geography or background, should be able to access digital services and exercise their rights online.

Equally vital is nurturing trust in our information ecosystem. Fostering media literacy, supporting fact-checking initiatives, and strengthening platform responsibility can help protect public dialogue from distortion.

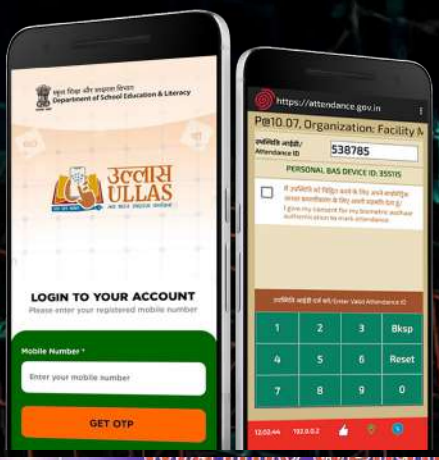
Data privacy and security lie at the core of this journey. As institutions collect increasing volumes of personal information, robust safeguards and responsible data practices are necessary—not only to meet legal requirements but to uphold the faith that citizens place in public systems.

The DPDP Act aims to build a digital future that is not only efficient but also founded upon unwavering integrity. This issue of Informatics features an insightful article on cybersecurity and privacy in governance, taking readers through the convergence of defensive security measures and proactive data protection strategies. Let us all embrace this responsibility and set the benchmark for digital governance globally.

Along with this English edition, it is with great pride that we present the inaugural, complete Hindi edition of Informatics—an entirely in-house production. We sincerely attribute the realization of this significant milestone to the keen interest and resolute encouragement of the Director General (NIC).

We hope you find this issue a useful and insightful read.

-Editor-In-Chief



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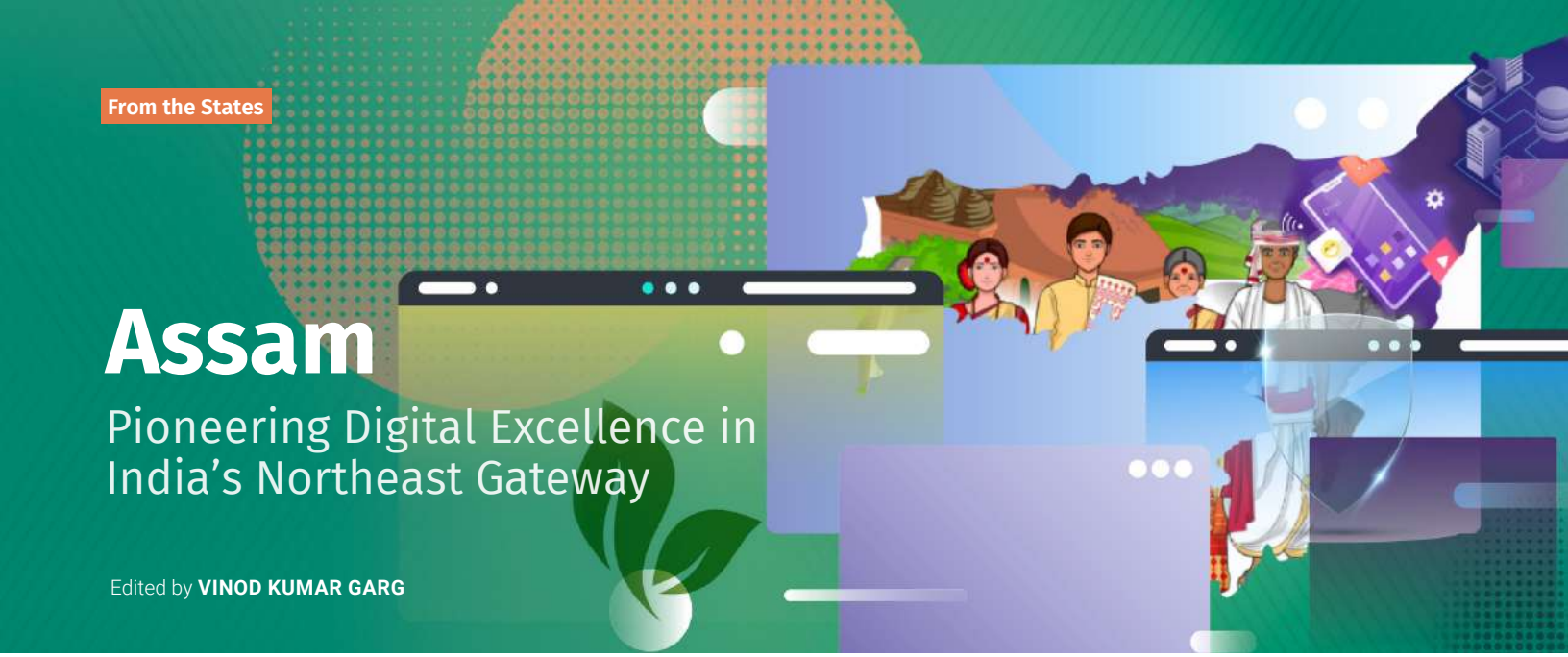

Assam

Pioneering Digital Excellence in India's Northeast Gateway

Edited by **VINOD KUMAR GARG**

Assam, the vibrant north-eastern state, known for its rich cultural heritage, its tea, the one-horned rhinoceros and the mighty Brahmaputra River, has emerged as a digital transformation leader in the Country. The State has been rapidly making strides in the domain of e-governance, bringing the power of technology to deliver better governance across all levels of administration. The National Informatics Centre (NIC) has been the government's most trusted and prominent technology partner, powering end-to-end digital solutions to strengthen administrative efficiency and deliver a wide range of Government-to-Citizen (G2C) services. The NIC Assam State Centre started functioning from 1986, and by the mid-Nineties, NIC had a District Unit in each district of the State. The advent of online technologies in the latter half of the second decade of the Twenty-First Century saw Assam and NIC perfectly poised to extract maximum advantage of the situation.

The state government proactively embraced digital innovations in its vision to ensure that technology-driven governance reached every corner of Assam, from urban centres to remote villages. NIC stepped in to make the vision a reality. Aligning its progress with the vision of Digital India, Assam and NIC worked hand in hand to implement comprehensive digital initiatives across diverse government departments ranging from e-governance solutions, contactless citizen services, data-driven dashboards to next-generation infrastructure and automation. NIC Assam has been pivotal in developing scalable IT solutions, establishing robust digital infrastructure, and creating innovative applications to establish itself as the technological backbone supporting the state's digital journey.

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Assam stands at the forefront of digital innovation in India, leveraging technology to create a more transparent, efficient, and citizen-friendly government. Working hand in hand since 1986, the NIC Assam State Centre and the State Government have built a comprehensive digital ecosystem with multitude of diverse ICT initiatives, transforming the lives of millions of citizens.

The scale of NIC's involvement in Assam's digital transformation is truly significant. A substantial part of Assam's Information and Communication Technology (ICT) initiatives are developed and implemented by NIC. These including 29 state-specific projects, 12 national projects customized for local requirements, and establishment of critical core infrastructure including services and security frameworks.

ICT Initiatives in the State

Digitization of Panchayat Electoral Rolls and Elections

The foundation of democracy lies in transparent and efficient electoral processes. However, that very foundation was standing on shaky grounds of obsolete and cumbersome manual systems. The Online Electoral Roll Management System (OERMS), Election Management and Monitoring System, and Polling Personnel Management System (PPMS) revolutionized how the State Election Commission conducts elections by digitizing the entire electoral roll preparation and polls management process. The system has covered 2,192 Gaon Panchayats and 25,046 polling stations, with 18,091,705 voters enrolled. During the elections, the platform processed 7,174 nominations for Anchalik Panchayat and Zilla Parishad positions, accepted 6,610, rejected 179, and recorded 385 withdrawals. This Government-to-Government (G2G) initiative has brought transparency and efficiency to grassroots democracy in Assam.

CM Dashboard

The CM Dashboard is an innovative approach for the state topmost leadership to monitor and evaluate government performance. This unique API-based platform enables real-time, data-driven monitoring and performance evaluation of districts, transparently showcasing best and worst performing districts with actual figures through dynamic, automated data collection.

The dashboard monitors 43 Central Schemes, 37 State Schemes, and 1 Externally Aided Project (EAP) covering 38 projects, with 17 archived schemes. It is an indispensable tool for the Hon'ble Chief Minister and senior officials to track implementation progress and make informed decisions based on real-time data.

Sewa Setu

Sewa Setu stands high as Assam's flagship citizen services platform, offering an unprecedented 815 services by integrating more than 20 portals and 10 national platforms including UMANG, Aadhaar, ePramaan, and DigiLocker. This Government-to-Citizen (G2C) platform has processed 1.94 crore applications, with 1.75 crore applications successfully disposed.

The platform includes an integrated Appeal

and Grievance Management System and leverages an in-house Service FlowMaster for efficient back-end workflow management. Demonstrating commitment to accessibility, Sewa Setu complies with WCAG and GIGW 3.0 standards, featuring a UX4G-designed accessibility menu. The platform's technical architecture leverages microservices for scalability and DevSecOps for secure continuous integration and deployment, making it a model for citizen-centric digital governance.

EoDB

The Ease of Doing Business platform has positioned Assam as a Top Aspirant in the Department for Promotion of Industry and Internal Trade (DPIIT) EoDB Rankings 2020. This unified G2G/G2B platform offers more than 300 online services—273 end-to-end and 27 external—across 21 departments and 42 sub-departments.

The platform has delivered 26.65 lakh services with an impressive 98.28% disposal rate. The system has registered 3.4 lakh Common Application Forms (CAFs) and processed 27.12 lakh applications, significantly reducing the time and complexity involved in obtaining business approvals and clearances.

ePrastuti

Assam became the first state in India to implement a standardized website framework for all government websites through ePrastuti. This initiative has standardized the government's web presence, ensuring consistency in design, accessibility features, and information architecture across all official websites, making government information more accessible and user-friendly. ePrastuti covers 299 websites, including those for departments, districts, the state portal, and the governor's portal.

eMantriSabha

eMantriSabha has transformed cabinet governance in Assam by digitizing the entire process from proposal submission to decision tracking and implementation, making cabinet meetings 100% paperless.

The system seamlessly integrates Digital Signature Certificates (DSC), eParichay, and Aadhaar authentication, with Bharat VC integration underway. Since implementation, the platform has facilitated 181 meetings, recorded 3,497 decisions including archived cabinet decisions, significantly improving the efficiency and transparency of the state cabinet.

Chief Minister's Atmanirbhar Asom Abhijan

Addressing unemployment through entrepreneurship, the Chief Minister's Atmanirbhar Asom Abhijan focuses on empowering youth with self-employment opportunities and fostering inclusive socio-economic development. This G2C initiative has registered 2,29,145 individuals, received 1,04,091 applications, and benefited more than 25,000 individuals with support for starting their own enterprises.

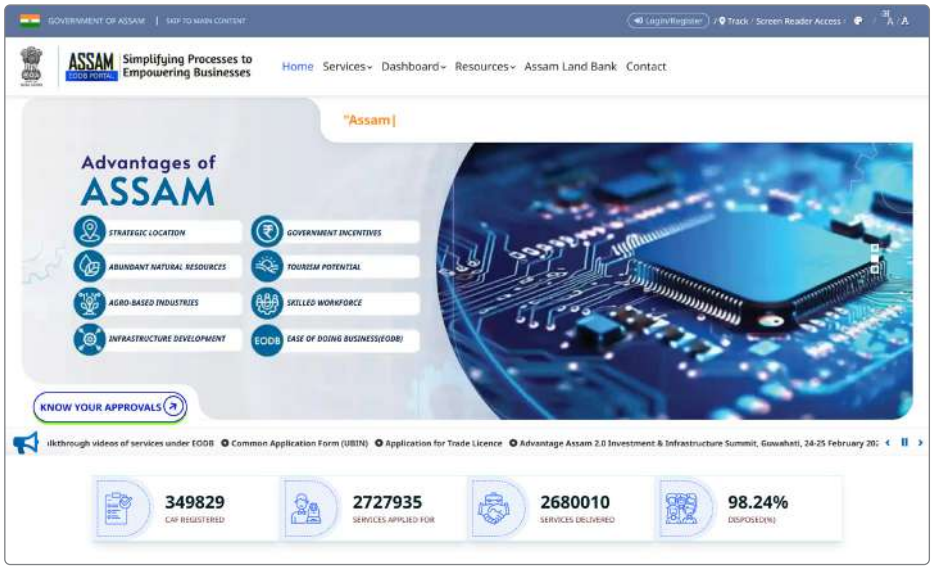
Integrated Land Records Management System (ILRMS)

Land records form the foundation of property rights and agricultural governance. The ILRMS has digitized the land record management processes with a comprehensive suite of integrated applications including Basundhara, Dharitree, Bhunaksha, eKhazana, Chitha, SVAMITVA, NOC, Landhub, NGDRS, Survey/Resurvey, and RCCMS. The online G2C services are facilitated to citizens through the Sewa Setu portal.

Nirman Sakhi

Nirman Sakhi simplifies worker registration, ensures transparent claims processing, Direct Benefit Transfer (DBT) disbursement, standardized cess assessment, and streamlined welfare delivery for Assam's construction workers under the Labour Department. The first application to be integrated with an Aadhaar vault, Nirman Sakhi has received 1,35,387 total applications, including 96,471 onboarding applications and 38,916 new applications.

▼ Fig 1.1 : EoDB website Homepage



> There was a belief that work like this cannot be done in Assam. We have started slowly. Seven lakh people have been benefitted by the (contactless services of the) Transport Department. But the numbers will only grow in transport, and by the time 2026 will come, about a crore people will be benefitted out of this entire process, and randomization (referring to his brainchild CM-TRANS application) in Assam is the first in the Country. If someone wants to do it now, it will be the Assam model. As a result of having done this work, we are eliminating corruption completely. NIC Assam has done this programme for us. They have done it for the first time, and NIC Assam is really doing great in responding to our requests. I would like to register my deep gratitude to Team NIC for taking all these significant steps for all of us. I want all of you to give a big clap for NIC because, it is because of them we are able to achieve a lot of milestones. We do not have to give money to anybody for these softwares, nor are there any bills or contracts or tender, we are just implementing it because NIC is there to help us, and we are doing it.
>
> 
>
> **Shri Himanta Biswa Sarma**
> Hon'ble Chief Minister of Assam
> (Excerpt from Hon'ble Chief Minister's speech at the Inaugural function of contactless transport services in Assam)

Assam eGRAS

The Government Receipt Accounting System (eGRAS) enables citizens and departments to make online payments for Assam government services, streamlining eChallan generation, multi-head payments, and receipt accounting for both Treasury and Non-Treasury heads. This G2G/G2C platform has generated 2,05,69,390 eChallans in Financial Year 2024-25, collecting a total of ₹84,446.97 Crores.

Digital ITI Platform

Recognizing that skilled workforce development is crucial for economic progress, the Digital ITI Platform represents a unified digital suite for

NIC Assam has been a valued partner in the State's digital transformation journey, during which numerous state-specific and national projects have been successfully implemented under the leadership of the Hon'ble Chief Minister of Assam.

NIC's scalable IT solutions have enabled contactless services and data-driven governance through comprehensive dashboards and other e-governance platforms. With 41 active G2C, G2E, and G2B state-of-the-art projects and core infrastructure services—including NICNET, Video Conferencing, and NKN—NIC has established itself as a key ICT pillar in Assam. The dynamic CM Dashboard, developed by NIC, is extensively used for data-driven decision-making. The adoption of eOffice across directorates has transformed government file processing, while service portals such as Sewa Setu and Ease of Doing Business (EoDB) have greatly benefitted citizens. Assam is also recognized as a leading state in implementing eTransport, integrating technology into this vital revenue-earning sector.

With NIC centres in every district, digital services now reach remote villages, ensuring no citizen is left behind. NIC's partnership has helped position Assam as a leader in digital transformation. The State Government and NIC have walked together to successfully apply digital technologies for a better and brighter future. We look forward to continued collaboration to build a digitally empowered Assam for generations to come.

Dr. Ravi Kota, IAS
Chief Secretary, Govt. of Assam

Industrial Training Institute operations. The platform features three integrated components: an MIS Portal that tracks academics, students, and administration in real-time; an Affiliation Portal that digitizes the ITI approval and compliance process; and an e-Counselling Portal that powers fair, paperless, merit-based ITI admissions.

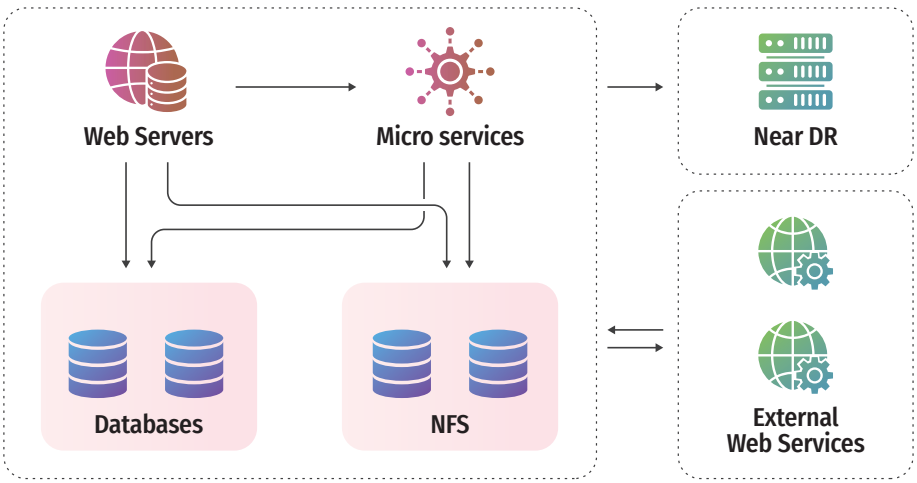
Kritagyata

Kritagyata has positively impacted pensioners by increasing transparency and reducing hurdles in the pension sanction and payment process. This G2E (Government-to-Employee) platform has added 59,722 retirees, processed 55,610 cases by HoDs, and approved 51,552 Pension Payment Orders (PPOs). With 4,058 cases pending for PPO approval, the platform maintains an impressive 92.70% PPO approval rate, ensuring that government servants receive their pension benefits promptly and with dignity after years of service.

eSamiksha

eSamiksha serves as a critical monitoring tool used by the Hon'ble Chief Minister (HCM), Ministers, and Department Heads to track the progress of various schemes and projects. This platform has facilitated the Hon'ble Chief Minister's 215 meetings generating 3,062 action points, Deputy Commissioner's Conference with 116 action points, HCM Notes with 395 action points, HCM Tour Direction with 180 action points, and CM Conclave with 42 action points. This systematic approach to monitoring ensures that decisions taken at the highest levels are tracked through implementation, with clear accountability mechanisms.

▼ Fig 1.2 System Architecture of Sewa Setu



ePrayukti Sewa

ePrayukti Sewa represents an innovative approach to grassroots digitization by offering a one-stop mobile app-building service for quick, customizable, and efficient app development. Featuring an integrated portal for registration, requirements gathering, and real-time service status tracking, this easy to use system enables various departments to digitize their services through mobile applications without extensive technical expertise.

JalTarangini

JalTarangini addresses the critical challenge of flood management and water resource monitoring through IoT technology. The system monitors water levels in real-time, transmits data via RF/LoRa from shadow areas, and triggers alerts at critical thresholds. This platform built on IoT-enabled RF/LoRa technology is copyright registered and patent filed by NIC Assam and set for deployment by the State Disaster Management department.

The system has won prestigious awards including Gold at the NIC Innovation Challenge 2018 for Emerging Technologies and Silver at the ET DigiTech Awards 2023 for Climate/Disaster Resilience, highlighting its potential to save lives and property through early warning systems.

Assam Civilian Awards

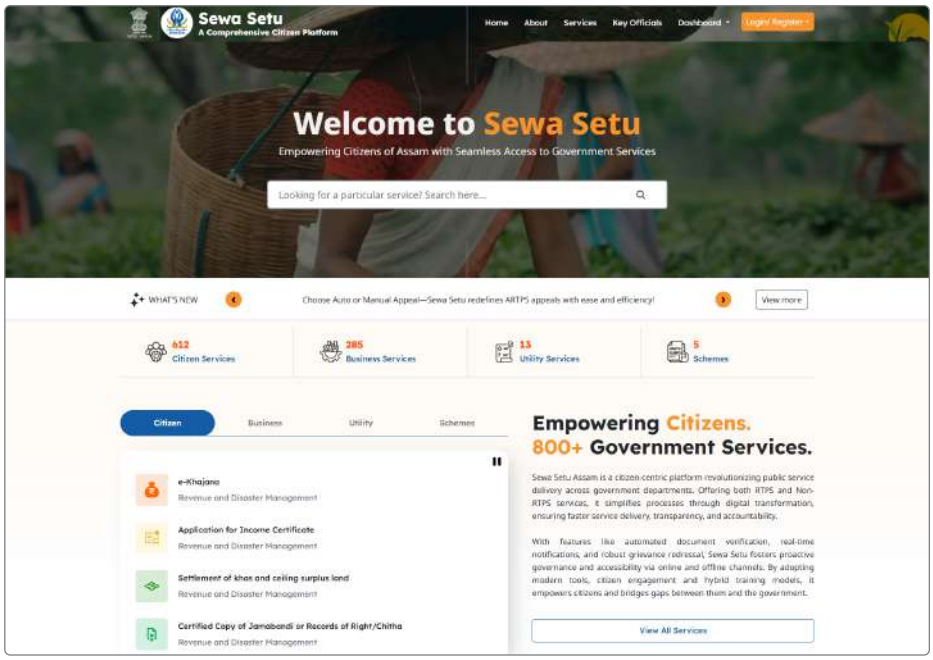
Facilitating the conferment of the highest Civilian Awards of the Government of Assam, this dedicated online system streamlines award nominations through a digital platform. This portal received 90 applications in 2023 and 266 applications in 2024, demonstrating increasing public participation in recognizing exemplary citizens.

Drugs Free Assam

Drugs Free Assam is a mobile app empowering citizens to report drug-related suspicious activities, persons, or transportation to police. Users can anonymously report complaints with photographic evidence and GPS location tagging. The platform has received 1,624 complaints to date, demonstrating strong community participation in combating the drug menace through technology-driven public participation in supporting law enforcement efforts.

Sadbhavana

Sadbhavana represents a major initiative by the Government of Assam for expeditious disposal of files. Pending matters in all physical files are resolved and files marked closed through the Sadbhavana portal. This platform received 316 applications, disposed of 242, with 74 under process, maintaining an impressive 76.58% disposal rate.



▲ Fig 1.3 : Sewa Setu website Homepage

Examination Results

NIC Assam has successfully published the Secondary Education Board of Assam (HSLC & AHM) and Assam Higher Secondary Education Council (HSSLC) results for 12 consecutive years, handling more than 23 lakh website visitors on result day and managing 12,000 hits per minute after release, demonstrating robust infrastructure and scalability.

Medical Asset Management System

Med-AMS has reformed and optimized medical asset management in medical facilities through seamless asset entry, real-time transparency, and vendor integration. Tracking of assets from procurement to disposal is done ensuring proper maintenance, availability and utilization. It is used across 16 medical college and hospitals, registering 3,408 major assets (93% functioning) and 44,227 minor assets (92% functioning), ensuring accountability and optimal utilization of medical equipment.

State Award to Teachers

This platform honors exceptional educators of the state, every year on Teacher's Day. It has a streamlined 3-step comprehensive self-nomination process for teachers, automated assessment and evaluation against predefined criteria, for easier decision making by administration. This G2C platform received 273 applications in 2024 and 427 applications in 2025, selecting 13 awardees in 2024 and 15 in 2025, recognizing teaching excellence across the state.

Matsya Baibhav

Under Assam's "Ghare Ghare Pukhuri, Ghare Ghare Maach" (GGPGGM) scheme, the Fishery Assets portal and the Matsya Baibhav mobile application enables complete digital asset mapping through GPS-based geo-tagging of all ponds and tanks created under GGPGGM. This robust mobile solution systematically captures beneficiary demographics, precise pond dimensions, geographic coordinates, and real-time photographic documentation. The application has successfully covered 9,083 ponds/ tanks under GGPGGM, with 9,029 geo-tagged, achieving 99% completion and demonstrating transparent monitoring of government assets.

State Public Procurement Portal

Launched on August 22, 2022, by Hon'ble Chief Minister Dr. Himanta Biswa Sarma, SPPP serves as Assam's unified tender access platform under the Assam Public Procurement Act, 2017. This platform integrates Assam Tenders, PMGSY, GeM, and manual tenders, enabling departments to publish NITs, documents, and corrigenda online while allowing citizens to freely access tender details and dashboards, promoting transparency in public procurement.

It is acknowledged that the State Election Commission has been working with the National Informatics Centre for a long time to introduce ICT applications in the election process, with the aim of enhancing transparency and integrity in local body elections in the state of Assam.

In mid-2022, the State Election Commission initiated the process of preparing the electoral rolls for the conduct of local body elections in the state, with the aim of ensuring free and fair elections. This was carried out in collaboration with the National Informatics Centre, Assam, under the guidance of the Commission. As a result of this initiative, the Online Electoral Rolls Management System (OERMS) was successfully developed after overcoming various challenges during the process. For the first time in Assam, the Commission used OERMS to prepare the electoral rolls and conducted the general elections for the Panchayati Raj Institutions (PRIs) with more than 1.80 crore electors.

After the successful development of OERMS, the Commission took the initiative to develop a series of ICT applications to enhance the election process in collaboration with NIC Assam. These included eNirvachan (for computerized randomization of polling and counting personnel), the Ballot Box Management System (for computerized randomization of ballot boxes), and the Election Management and Monitoring System (for digitization of candidate nominations along with affidavits). All these applications were used for the first time in the Rabha Hasong Autonomous Council Election, and later on a much larger scale during the general elections for the Panchayati Raj Institutions (PRIs). During the PRI elections, more than 1 lakh personnel were randomly selected and allotted to respective polling stations, over 50,000 ballot boxes were randomly assigned, and more than 7,000 nomination forms were digitized.

All the ICT applications mentioned above were developed by a team of highly qualified software engineers and an experienced management committee, under the leadership of Shri Rubaiyat Ul Ali (Scientist-F), NIC, Assam. These applications are efficiently managed by the District Informatics Officers (DIOs) and Additional District Informatics Officers (ADIOs) of NIC Assam, who are stationed across various districts of the state.

The Commission acknowledges the efforts of NIC Assam and expects to continue the journey of developing and implementing new ICT applications to enhance transparency and trustworthiness in the election process in the state of Assam.

Shri Alok Kumar, IAS (Retd.)
State Election Commissioner, Govt. of Assam

▲ Fig 1.4 : Launch of Project Sadbhavana by Hon'ble CM Shri Himanta Biswa Sarma

Manav Sampada

Manav Sampada, aptly named for Human Capital, provides a comprehensive ICT solution for the government sector, addressing key personnel management needs. Currently rolled out in Panchayat and Rural Development department, this G2E platform has registered 3,126 service books, received 5,696 leave applications, and created 2,109 Annual Confidential Reports (ACRs), streamlining human resource management in government departments.

Niyukti

Niyukti is a Software as a Service (SaaS) based recruitment solution for government departments to conduct hiring drives. Recruiting agencies can quickly onboard as authorized recruiters and initiate hiring processes with minimal configuration. The platform ensures faster, efficient, and transparent recruitment management. It has processed 2,50,000 applications, completed 84 recruitments across 900+ positions, streamlining government hiring statewide.

eDAK

eDAK is a centralized, role-based platform for managing official letters received in the CM Secretariat. It facilitates diarization, management, and tracking of communications with role-based access and workflows. The system handles both diarized and legacy letters, ensuring streamlined letter management across departments with centralized tracking capabilities.

Matri Pitri Vandana

The Matri Pitri Vandana initiative, launched in 2022, grants Assam government employees two days of special casual leave annually to spend quality time with parents and parents-in-law. After availing leave, employees must upload signed leave applications approved by department heads and photographs taken with parents during the leave period on the portal, ensuring accountability and genuine utilization of this family welfare initiative to promote work-life balance and familial values among employees.

▼ Fig 1.5 : Shri Himanta Biswa Sarma, Hon'ble Chief Minister of Assam, launching the CM-Trans

RTI Online Portal

Launched by the Administrative Reforms, Training, Pension & Public Grievances Department, the Right to Information Online Portal offers a transparent, paperless platform for submitting and tracking RTI requests and First Appeals. Till date rtionline.assam.gov.in has received 2,812 RTI requests and 527 First Appeals, with 1,548 citizens registered and 1,313 public authorities onboard. Integrated with eGRAS for secure payments, it ensures timely access to information and streamlines processing for both citizens and officials.

RurbanSoft

RurbanSoft represents Assam's contribution to national e-governance, serving as the Management Information System for Shyama Prasad Mukherjee Rurban Mission (SPMRM) under the Ministry of Rural Development. Entirely developed in Assam and implemented across all 26 states and 8 Union Territories, this G2C platform streamlines ICAP/DPR planning, PFMS-enabled payments, and geo-tagged asset tracking through the Geo-Rurban app. Though new works onboarding is now closed, the system remains active until all vendor payments are settled, demonstrating Assam's capability to develop nationally scalable solutions.

National Projects Customized for Assam

Beyond state-specific initiatives, NIC Assam has successfully customized and implemented 12 major national projects to suit local requirements and linguistic needs. The eOffice initiative has achieved 100% eFile adoption across all departments up to the directorate level, creating 811,640 eFiles, 4,516,764 receipts, and issuing 1,373,667 letters while converting 137,787 files, enabling efficient and transparent governance with anytime, anywhere file access. The eTransport platform, branded as CM-TRANS, positions Assam as a nation leader in transport automation with 73 contactless services. The comprehensive system integrates Speed Limiting Device, eChallan and eDAR. It includes MoRTH's cashless treatment scheme as a pilot initiative, alongside full automation of transport services.

The Inter-operable Criminal Justice System (ICJS) is a successful initiative in Assam, integrating police, e-Courts, e-Prisons, e-Forensics, and e-Prosecution including includes the Medico Legal Examination and Post Mortem Reporting System (MedLEaPR), for seamless data sharing under 'one data, one entry' principle, ensuring speedier and transparent justice delivery. Jeevan Pramaan provides biometric-enabled digital life certificates with Assamese language support, recording 32,708 successful submissions, while Real Estate Regulatory Authority (RERA) Application facilitates real estate regulation with 1,115 registered projects, 83 registered agents, and 405 complaints (262 disposed). The Public Distribution System ensures food security for 70,86,456 ration card holders covering 2,46,78,138 beneficiaries through 35,055 Fair Price Shops.

▲ Fig 1.6 : Hon'ble Finance Minister, Smt. Nirmala Sitharaman launching the Sewa Setu portal

Centralized Public Grievance Redress and Monitoring System (CPGRAMS) positions Assam as second in the Northeast, and third nationally, for grievance disposal, while NextGen e-Hospital connects 129 health facilities processing over 14.723 million OPD registrations with implementation in 687 health facilities in the pipeline. SPARROW streamlines performance management with 5,720 APARs registered, reviewed, and accepted, while eProcurement has facilitated 71,057 tenders worth ₹2,96,701 Crores since its 2014 launch in Assam. The eJagriti platform empowers consumer protection with 7,144 complaints filed and 4,877 disposed (68.27% disposal rate). These demonstrate NIC Assam's ability to adapt national solutions to state-specific contexts while maintaining interoperability and standards.

National Data Centre for NER

Strengthening the computing capacity of the region, the National Data Centre for the Northeast, with 4 MW total load, is being implemented by NIC and NICSI. This strategic infrastructure development represents a major leap forward in regional digital capabilities. With a capacity of more than 200 server racks (expandable to 400) with high-end connectivity, on-demand cloud infrastructure, and secure data hosting, processing, and data management, it will create a robust digital backbone for the entire north-eastern region support the growing demands of e-governance initiatives.

Core Services

Core services such as NICNET, NKN, video-conferencing, and webcasting are available extensively throughout the state. NICNET has been the digital backbone of the Government of Assam since 2003, with an extensive network of 21,388 nodes delivering round-the-clock uninterrupted connectivity. The robust Assam Secretariat LAN infrastructure has over 5,000 nodes with unrestricted Internet bandwidth and IPV6 compliance.

Video conferencing services have been part of NIC Assam's portfolio since 1995, which proved invaluable during the Covid-19 pandemic with 950 video conferences conducted in 2025 (as of September) and 1,619 conferences held throughout 2024. The state's digital infrastructure is further strengthened by robust email services supporting over 50,000 users across assam.gov.in and assampolice.gov.in domains, backed by all round technical support through a dedicated service desk ticketing system. The National Knowledge Network (NKN) Point of Presence in Assam has been operational since 2011, connecting to 12 core networks and offering 10/2.5 Gbps bandwidth with 80G bandwidth capacity and high availability systems, linking 64 premier educational and research institutions.

▼ Fig 1.7 : National Data Centre, North East Region

Regional Application Security and Audit

RASA, the Regional Centre for Application Security & Audit located in Jayanagar, Guwahati, provides comprehensive services including application security audits, vulnerability assessment, and penetration testing.

Conclusion

NIC Assam has emerged as the state government's most trusted technology partner, powering end-to-end digital solutions to strengthen administrative efficiency and public service delivery, extending from the state headquarters to remote districts. The State Centre's achievement of handling a majority of ICT initiatives of the Government of Assam, developing solutions that scale nationally, and pioneering innovations such as Jal Tarangini demonstrate the potential of committed partnerships between the government and NIC. Assam's digital transformation journey, powered by NIC's technical expertise and the state government's visionary leadership, serves as an inspiring model for other states, particularly in challenging geographical and infrastructural contexts.

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Chhattisgarh

Strengthening Roots with Digital Growth

Edited by **SUSHMA MISHRA**

Chhattisgarh, often called the "Rice Bowl of India", has steadily emerged as a front runner in digital governance and citizen-centric service delivery. Over the past few years, the state has leveraged technology to address the needs of its predominantly rural and tribal population, while ensuring transparency and efficiency across government processes.

With initiatives ranging from end-to-end computerisation of land records and paddy procurement to digital scholarships, Aadhaar-enabled PDS, and health management systems, Chhattisgarh has built a robust foundation for inclusive growth. The state has also integrated national platforms such as VAHAN, SARATHI, NGDRS, e-Courts, MGNREGAsoft, and PMAY-G, tailoring them to local requirements. NIC, Chhattisgarh had also leveraged the technology to make the Question/Answer more seamless in State Assembly.

Supported by strong network infrastructure through NICNET, SWAN, and NKN, and reinforced by extensive video conferencing usage at both state and district levels, Chhattisgarh has transformed into a digitally empowered state. Its achievements have been recognised at the national level with multiple awards for innovation in e-Governance, Agriculture, Education, Healthcare, and financial reforms.

As Chhattisgarh moves forward, its focus remains on deepening digital inclusion, expanding AI-driven analytics, and enhancing citizen-centric portals—ensuring that technology continues to bridge gaps between governance and grassroots.

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Chhattisgarh has emerged as a leader in digital governance with initiatives spanning land records (Bhuiyan, Bhunaksha), agriculture (Unified Farmer Portal, Token Tuhar Haath), welfare (Scholarship Portal, AePDS), housing, labour, excise, and health. Supported by NICNET, NKN, and video conferencing, the state integrates national MMPs while winning national awards. Its way forward focuses on auto-mutation, AI-driven analytics, paperless finance, and citizen-centric digital services.

ICT Initiatives in the State

NIC Chhattisgarh has been at the forefront of designing and implementing cutting-edge digital solutions to enhance governance and improve the delivery of citizen services. The focus has been on building integrated, transparent, and citizen-friendly systems across departments. Some of the key state-level ICT initiatives include:

Bhuiyan

https://bhuiyan.cg.nic.in

Bhuiyan is Chhattisgarh's flagship Land Records Computerisation Project, transforming paper-based records into a modern digital platform. Citizens can access and download digitally signed B-I (Khatauni) and P-II (Khasra) free of cost, while officials manage entries, Auto mutations, and approvals online with OTP and Aadhaar validation.

Key Features: Online mutation register, seasonal crop (Girdawari) entry with geo-tagging, Aadhaar/mobile linkage, urban Nazul & Diversion records, SMS alerts, and a mobile app for Patwaris and citizens.

Impact (2025)

- 20,527 villages digitised; 19,566 maps integrated
- 5,500+ Patwaris actively using the system
- Bank integration enables quick agricultural credit
- Citizens empowered with instant, transparent access to land records.

By linking with NGDRS for auto-mutation and Unified Farmer Portal for scheme validation, Bhuiyan has become the cornerstone of digital land governance in the state.

Bhunaksha

https://bhunaksha.cg.nic.in

Bhunaksha brings Chhattisgarh's cadastral maps online, integrating spatial and textual land records. It allows splitting, merging, and renumbering of plots, with updates reflected in the mutation register.

Key Features: Online access to 19,566 village maps, area/distance measurement tools, owner-wise plot reports, and multiple print options (A4 plot maps to A0 village maps). Integrated directly with Bhuiyan for consistency.

Impact

- Full coverage of almost all villages in the state
- 5,500+ Patwaris using for daily operations to update Maps
- Citizens can view, download, and authenticate land parcel maps, reducing disputes

By combining cadastral mapping with textual land records, Bhunaksha ensures transparent, efficient, and citizen-friendly land management.

CGAWAAS

https://tcp.cg.gov.in

CGAWAAS is Chhattisgarh's online system for granting approvals to colony development projects in both urban and rural areas. It streamlines the multi-department approval process, ensuring transparency and time-bound service delivery.

Key Features

- Colonisers apply online, track status, and make digital payments
- Applications move across nodal departments with defined timelines (120 days)
- Applicants receive stage-wise updates, rejection notices, and final approvals digitally
- Automated MIS for colony approvals and revenue generation

Impact

- 804 applications received, 238 delivered, and 29 Khasra integrations completed
- Over ₹34.9 crore revenue generated from approvals
- Reduced manual bottlenecks and ensured faster decision-making for urban expansion

By digitising colony approvals, CGAWaaS has enabled faster housing development, improved urban governance, and greater transparency for both developers and citizens.

Audit Online & e-CSA

https://res.cg.gov.in

Chhattisgarh's Audit Online and e-CSA platforms digitise audits of Panchayati Raj Institutions, Mandis, Universities, Boards, and Nigams, ensuring standardisation, transparency, and accountability.

Key Features

- Online audits of PRIs, integrated with eGramSwaraj
- Workflow-based audits for Mandis, Universities, and state entities
- Standardised formats, digital preservation, and MIS dashboards
- Linked with e-Kosh and e-Works for real-time fund tracking

Impact

- 11,688 GP profiles created, with 11,586 GPDPs uploaded for FY 2025–26
- 11,800+ audits completed across PRIs and institutions
- Recognised nationally with multiple e-Panchayat Awards

These systems have enabled real-time financial monitoring and strengthened grassroots accountability in fund utilisation.

Post-Matric Scholarship Portal

https://postmatric-scholarship.cg.nic.in/

The Post-Matric Scholarship Portal of Chhattisgarh is a flagship initiative of the ST & SC Development Department, designed to ensure efficient, transparent, and accountable disbursal of scholarships to students belonging to Scheduled Tribes (ST), Scheduled Castes (SC), and Other Backward Classes (OBC).

This integrated digital platform streamlines the entire lifecycle of scholarship management — from student registration and hostel enrolment to fund sanction, transfer, and expenditure monitoring. The system eliminates manual bottlenecks and enables stakeholders, including hostel superintendents, district officers, and state administrators, to operate in a coordinated and transparent manner.

Key Features

- **Online Hostel Management:** Digitize end-to-end processes for new admissions, renewals, attendance, and annual closures
- **Integrated Workflow:** Streamline fund proposals from superintendents to district-level approval by Assistant Commissioners
- **Direct Benefit Transfer (DBT):** Directly credit scholarships and stipends to joint accounts of superintendents and head students for efficient and secure payments
- **Real-time Expenditure Monitoring:** Track hostel/Ashram funds in real time, comparing allocated funds with sanctioned vs. admitted seats
- **MIS Reporting:** Provide departmental officers with analytical reports for informed planning, auditing, and decision-making

Impact & Achievements

- 1341 Ashrams, 1782 Pre-Matric Hostels, and 457 Post-Matric Hostels are registered on the system
- 78,917 new students and 1,25,652 renewal students enrolled in the current session
- ₹301 crore successfully transferred to hostels/Ashrams through DBT, ensuring transparency and accountability
- Real-time dashboards empower administrators to monitor hostel occupancy, sanctioned seats, and expenditure trends across districts

The portal has not only reduced processing delays and administrative overheads but also enhanced trust among students and parents. By bridging gaps between government departments, educational institutions, and beneficiaries, it has become a model of digital empowerment for inclusive education.

HMS & RSMIS

The Hostel Management System (HMS) and Residential School MIS (RSMIS) of Chhattisgarh digitize the administration of state-run hostels and specialized tribal schools, ensuring transparency and accountability in student welfare.

Hostel Management System (HMS)

- Online registration and renewal of hostellers across 1341 Ashrams, 1782 Pre-Matric, and 457 Post-Matric hostels
- Tracks attendance, expenditures, and fund proposals submitted by hostel superintendents
- Enables direct fund transfer after district-level verification, with dashboards for monitoring sanctioned vs. admitted seats

Residential School MIS

- Covers 75 Eklavya Schools (21,084 students) and 15 Prayas Schools (4,946 students)
- Records admissions, periodic test results, and academic performance
- Tracks infrastructure and manpower resources, with online fund sanction and utilization monitoring

Together, these systems create a 360° digital framework for monitoring student admissions, academic outcomes, and resource management. By combining hostel welfare with school performance tracking, they ensure data-driven decision-making and targeted support for tribal and marginalized students.

These portals can be accessed at https://hmstribal.cg.nic.in/ and https://eklavya.cg.nic.in/.

▼ Fig 2.1 : Hon'ble CM Shri Vishnudev Sai Virtually Inaugurates 51 Mahatari Sadans Across Chhattisgarh

The Hostel Management System Portal, developed by NIC stands as a landmark achievement in digital governance. This initiative exemplifies our commitment to fostering inclusive, equitable, and Hostel/Ashram-centric educational opportunities. By streamlining hostel management processes through innovative technology, it ensures transparency, efficiency, and timely support to deserving students. We believe this portal will pave the way for further advancements in welfare delivery, empowering the youth and strengthening the future of our nation.

Sonmoni Borah, IAS
Principal Secretary, ST, SC, OBC and Minority Development Department, Chhattisgarh

Unified Farmer Portal

https://agriportal.cg.nic.in

The Unified Farmer Portal is a single-window platform offering each farmer a unique ID linked to Bhuiyan land records, ensuring authenticity and eliminating duplication.

Key Features

- One Farmer – One ID capturing personal, land, and crop details
- Supports schemes like paddy procurement, horticulture, ethanol & sugarcane procurement, PM-AASHA
- DBT-ready, with bank accounts verified via PFMS
- API-based data sharing for secure interoperability
- Single registration usable across multiple schemes

Impact

- 27.19 lakh farmers registered
- 207 crops and 37.2 lakh hectares mapped
- Seamless benefit delivery across multiple departments
- Prevented duplication, improved efficiency, and enabled real-time monitoring

The portal has become the backbone of digital agriculture governance in Chhattisgarh, simplifying farmer access and supporting data-driven policy decisions.

Computerised Paddy Procurement

Chhattisgarh introduced its Computerised Paddy Procurement System in 2007, bringing transparency and efficiency to the procurement process and benefiting 25.49 lakh farmers.

In the early phase, most centres lacked internet connectivity, so a standalone software module handled purchases, miller issuance, and receipts. The innovative RUNNERS Module deployed about 250 motorcycle riders to carry daily data from centres to block headquarters, where it was uploaded via NICNET (V-SAT). CMR centres of CGSCSC and FCI used similar offline software with automatic server sync. Complete computerisation enabled instant cheque payments to farmers.

Today, all procurement operations—mill registration, permissions, agreements, securities, delivery orders, and receipts/issues—are fully online. Payments to farmers and millers are processed electronically through PFMS and the SBI SFG Server.

To eliminate queues for procurement tokens, NIC launched the 'Tuhar Token' App, allowing farmers to generate tokens and check centre-wise details. Offline token options remain available through societies.

Farmer registration is now routed through the national Agristack Portal, with 26.49 lakh farmers already registered on the Unified Farmers Portal with Agristack IDs. All preparations are complete, and procurement will begin on 15 November 2025.

Highlights

- 2,739 procurement centres across the state
- 149 lakh MT of paddy procured
- Integrated with 87 storage centres, 296 CMR depots, and 2,889 rice mills
- 64% of farmers actively used the mobile app for token booking

By integrating land records, bank accounts, and procurement data, Chhattisgarh has built a transparent, efficient, and farmer-friendly digital ecosystem—establishing itself as a model for digital agriculture governance.

AePDS & RCMS

https://epos.cg.gov.in

The Aadhaar Enabled Public Distribution System (AePDS) and Ration Card Management System (RCMS) provide end-to-end automation of Chhattisgarh's food supply chain, ensuring portability, transparency, and accountability under One Nation, One Ration Card (ONORC).

Key Features

- **Comprehensive Coverage:** Over 81 lakh ration card holders across 13,940 FPS
- **Aadhaar Authentication:** Eliminates duplication and ensures genuine beneficiary access.
- **Portability:** Ration available from any FPS under ONORC
- **Real-Time Monitoring:** Digital PoS devices capture transactions for MIS dashboards
- **Scheme-Wise Tracking:** Supports NFSA, CGFSA, Antyodaya, and other categories

Impact

- 81.03 lakh cards and 2.6 crore+ beneficiaries digitised
- Automated transactions at all FPS
- Enhanced transparency and efficiency in foodgrain distribution

The system has transformed PDS in Chhattisgarh into a citizen-centric, accountable, and portable network, benefitting both residents and migrant families.

Labour Department Portal

https://shramevjayate.cg.gov.in/

The Labour Department Portal of Chhattisgarh integrates registration, welfare schemes, cess collection, and compliance monitoring into a single digital platform. It provides end-to-end automation for workers, employers, and contractors, ensuring transparency and efficiency.

Key Features

- **Worker Registration:** Covers construction, organized, and unorganized workers with Aadhaar-based verification
- **QR-Coded Smart Cards:** Issued to workers for identity and scheme access.
- **Online Cess & Fee Collection:** Integrated payment gateway for ease of doing business
- **Direct Benefit Transfer (DBT):** Scholarships, maternity, pension, and housing benefits credited directly to worker accounts
- **Risk-Based Inspections:** Automated online inspections for transparency
- **Single Window:** Integrated services for employers, contractors, factories, and trade unions

Impact

- 49.3 lakh workers registered (29 lakh construction, 17 lakh unorganized, 2 lakh organized)
- 20,426 employers/contractors onboarded
- ₹1,300+ crore cess and ₹33+ crore welfare funds collected annually
- Over 15 lakh beneficiaries received DBT-based scheme benefits

By digitising registrations, scheme benefits, and compliance, the portal has emerged as a one-stop labour governance solution, empowering workers while simplifying regulatory processes for industry.

e-Awas

https://cghb.gov.in

The e-Awas system automates the Chhattisgarh Housing Board's processes for residential and commercial property management, ensuring transparency in allotment and efficient estate operations.

Key Features

- **Estate & Accounts Management:** Workflow-based modules for allotment, recovery, and finance
- **Online Property Search (Samriddhi):** Citizens can search properties, check availability, and apply online
- **Digital Payments:** Integrated payment gateway for installments and fees
- **Transparency:** End-to-end digital tracking from application to allotment

Impact

- Thousands of property applications processed digitally
- Reduced paperwork, faster approvals, and citizen convenience.
- Enhanced accountability in Housing Board transactions

The system has transformed property management into a citizen-friendly, transparent, and fully online process.

e-Excise

https://excise.cg.nic.in

Chhattisgarh's e-Excise project is a pioneering initiative covering the entire excise value chain, from license issuance to supply chain tracking, revenue collection, and enforcement.

Key Features

- **End-to-End Automation:** License/permit/NOC issuance, renewal, and approvals online
- **Supply Chain Tracking:** Barcoding & QR coding for liquor inventory; GPS-enabled vehicle tracking
- **Revenue Collection:** Online excise duty collection, cash management, and real-time monitoring
- **Enforcement & Transparency:** RFID-enabled cash tracking, CCTV integration, and random inspections
- **Mobile Apps:** For bar owners, stock ordering, and employee attendance (AEBAS).

Impact

- 43,1585 permits and 61,586 NOCs generated (till June 2025)
- ₹40,271 crore revenue collected via digital channels
- 520 GPS devices installed in transport vehicles and 100+ surveillance cameras deployed
- 530 RFID cards issued for cash management.

By digitising every step, e-Excise has made Chhattisgarh one of India's most advanced states in excise governance, ensuring transparency, higher revenues, and tighter compliance.

University Management Information System

https://igkv.ac.in

The University MIS at Indira Gandhi Krishi Vishwavidyalaya (IGKV) is an end-to-end automation platform covering admissions, academics, finance, HR, research, and digital library services.

Key Features

- **Admissions & Academics:** Online applications, OMR-based exams, grievance redressal, and result processing
- **Finance & HR:** Computerised bill sanction, payroll, service books, and CR management
- **Recruitment:** Online recruitment for Class I & II posts
- **Digital Library & Research:** Direct access to research findings and innovations by IGKV scientists
- **Mobile Apps:** Crop Doctor, e-Krishi Pathshala, e-Haat, and Custom Hiring for farmers

Impact

- 2,000+ applications processed digitally
- 9.6 lakh farmer queries resolved
- 4.4 lakh finance bills generated
- Direct farmer benefit through agri advisory and mechanisation services.

The system has established IGKV as a digitally enabled agricultural university, connecting academics, administration, and farmer outreach on one platform.

Healthcare IT Systems

Chhattisgarh has built a strong digital health ecosystem by integrating hospital automation, health worker payments, maternal care, and public health monitoring into ICT platforms. These initiatives ensure that healthcare delivery is efficient, accountable, and accessible, especially in rural and tribal regions.

NextGen e-Hospital

https://nextgen.ehospital.gov.in

The NextGen e-Hospital system is a complete Hospital Management Information System (HMIS) deployed in government hospitals across the state. It connects patients, hospitals, and doctors on a unified digital platform.

- **Features:** ABHA-linked OPD/IPD registration, token & queue management, e-prescriptions, pharmacy, diagnostics, OT scheduling, lab integration, billing, and discharge
- **Impact:** 306 hospitals onboarded, including District Hospitals, CHCs, PHCs, and medical colleges etc. ensuring smoother workflows and faster patient care

NHM DBT Portal

https://nhmdbt.cg.nic.in

The NHM DBT Portal ensures timely incentive payments to frontline health workers (Mitanins).

- **Coverage:** 71,000+ Mitanins and 3,000 trainers across 33 districts and 21,000 villages
- **Impact:** Monthly DBT of over ₹40 crore, directly credited into beneficiary accounts, strengthening grassroots health delivery

State Health Systems

- **High-Risk Pregnancy Monitoring:** Tracks maternal health to ensure timely interventions
- **CM Haat Bazaar Clinics:** Mobile health units providing services at weekly tribal markets, reaching remote populations
- **SOTTO (State Organ & Tissue Transplant Organisation):** Oversees organ and tissue donation, ensuring transparent allocation
- **Swasthya Inventrack:** Manages procurement, storage, and distribution of drugs and medical equipment
- **e-Kalyani:** Online monitoring of abortion services for compliance with MTP Act
- **Nutrition Rehabilitation Centres:** Digital monitoring of care provided to under-5 children with Severe Acute Malnutrition (SAM)

Benefits

- **For Citizens:** Easier access to healthcare services, reduced waiting time, and better maternal & child care
- **For Health Workers:** Timely payments, improved monitoring, and reduced administrative burden
- **For Administration:** Real-time dashboards, better fund utilisation, and data-driven policy planning

Together, these ICT systems have transformed Chhattisgarh's healthcare into a digitally enabled, citizen-centric network, ensuring equitable access across both urban hospitals and rural tribal belts.

Other State Health Systems

- **State Mental Health Authority:** Regulates licensing and monitoring of mental health establishments
- **Village Health, Sanitation & Nutrition Day (VHSND) MIS:** Records health and nutrition services provided at Anganwadi centres
- **National Oral Health Programme:** Expands affordable oral healthcare with a focus on prevention and awareness
- **Chhattisgarh Medical Services Corporation Ltd. (CMSCL):** Centralised procurement and distribution of drugs, surgical items, and medical equipment
- **Health Dashboard (Budget & Schemes):** Provides real-time visibility into fund allocation/uti-

▼ Fig 2.2 : Police staff trained on eOffice for paperless governance

lization and scheme progress for better planning.

Together, these initiatives make healthcare in Chhattisgarh digitally enabled, inclusive, and citizen-friendly, bridging the gap between policy and last-mile delivery.

Central Projects Implemented in State

Chhattisgarh has been proactive in adopting and implementing national e-Governance Mission Mode Projects (MMPs), customizing them to meet local requirements while ensuring citizen convenience, transparency, and accountability.

VAHAN 4.0 & SARATHI 4.0

VAHAN 4.0 and SARATHI 4.0 are fully implemented across all 28 RTOs, offering faceless, paperless services for vehicle registration, permits, tax collection, fitness certificates, DL/LL issuance, renewals, and ownership transfer. The state now provides 33 faceless VAHAN services and 24 faceless SARATHI services, significantly reducing RTO footfall.

Over 90 lakh vehicles with 2 crore transactions worth ₹13,000 crore have been processed through VAHAN. SARATHI has issued 36 lakh Driving Licenses and 23 lakh Learning Licenses, generating ₹311 crore in revenue. To support citizens, 555 Parivahan Seva Kendras and 238 PUCC centres are operational.

HSRP fixation is progressing well with two vendors deployed across districts. VLTD systems, 8 Automated Testing Stations, IRAD, and ITMS in two smart cities are fully functional.

vCourt automatically processes unpaid challans after 45/90 days, with challan details sent via SMS and WhatsApp. EDetection using ANPR and toll plaza cameras ensures automated enforcement.

An EV Subsidy Portal is also operational, strengthening the state's push toward cleaner mobility.

NGDRS

The NGDRS project enables digital property registration and mutation under the One Nation, One Registration framework.

- **Coverage:** Implemented across all 102 Sub-Registrar Offices in Chhattisgarh
- **Integration:** Linked with Bhuiyan (land records) for real-time verification and auto-mutation
- **Benefit:** Citizens can prepare, submit, and track documents online, reducing fraud and delays

NextGen e-Hospital

Deployed at 306 government hospitals in the state, the NextGen e-Hospital system offers end-to-end automation of hospital workflows.

- **Features:** OPD/IPD registration, ABHA integration, diagnostics, pharmacy, and billing
- **Impact:** Over 2.16 Crore OPD registrations and 14.6 lakh IPD cases recorded digitally, improving efficiency in healthcare delivery

CCMS

CCMS is a web-based platform for end-to-end monitoring of court cases filed against the Government of Chhattisgarh. It centralizes case data, tracks proceedings from filing to disposal, and provides real-time updates, dashboards, and automated reports for timely decision-making.

Key Features:

- **Napix–NJDG Integration** for real-time case sync
- **Role-based dashboards** and customizable MIS reports
- **Centralized repository** of all pending and disposed cases
- **Automated tracking** of replies, compliance, and deadlines
- **SMS alerts** for hearings and compliance
- **Mobile app** for anytime case access

Impact (2025):

- 77,038 cases monitored digitally by 3,206 users across 45 departments
- Faster compliance through automated alerts
- Real-time data improving governance and coordination
- Reduced paperwork through digital workflows

ICJS

Chhattisgarh has integrated its judicial ecosystem with the national ICJS platform, covering e-Courts, e-Forensics, e-Prosecution, e-Prisons, and e-Summons.

- **Benefit:** Enables seamless data exchange between police, judiciary, prisons, and forensic departments
- **Impact:** Faster investigations, improved case tracking, and better coordination between justice stakeholders.

IVFRT

The IVFRT project has been implemented across all district-level Foreigners Registration Offices (FROs).

- **Services:** Online registration, visa extension, and tracking of foreign nationals
- **Impact:** Enhanced national security, streamlined processing, and reduced in-person visits for foreign nationals.

MGNREGAsoft

The MGNREGAsoft platform enables complete digitisation of the Mahatma Gandhi National Rural Employment Guarantee Act in the state.

- **Coverage:** Implemented in all 33 districts
- **Impact:** Over 32.5 lakh job cards issued and 4.7 crore wage payment transactions processed via DBT, ensuring timely payments to workers

Pradhan Mantri Awas Yojana – Gramin

Chhattisgarh uses AwaasSoft and AwaasApp to monitor housing delivery under PMAY-G.

- **Coverage:** Online tracking of beneficiary selection, house construction, and fund disbursement
- **Impact:** Over 11 lakh pucca houses built for rural households, with transparent monitoring and DBT transfers.

e-Procurement (Central Public Procurement Portal)

The CPPP platform has been adopted by central institutes and enterprises operating in Chhattisgarh.

- **Users:** AIIMS Raipur, IIT Bhilai, NTPC, South Eastern Coalfields Ltd. (SECL), and World Bank–funded projects
- **Benefit:** Brings transparency, accountability, and open competition in government procurement

Other Governance & Citizen Services

Alongside flagship initiatives, Chhattisgarh has implemented several supporting ICT platforms that strengthen governance, citizen services, and departmental efficiency across sectors.

Governance & Justice

- **RevCase App:** Mobile-enabled case tracking and adjournment system for revenue courts, with SMS alerts and digital order sheets
- **Court Case Monitoring System (CCMS):** Centralised repository for monitoring government cases in High Court; analytical dashboards and compliance tracking
- **Vidhan Sabha Systems (e-Prashna, e-Uttar, e-Prashnottari):** Digital platforms for question submission, replies, and legislative document management, enhancing transparency in Assembly proceedings
- **Public Grievance Portals:** Unified grievance systems for CM Office, Janshikayat, and Governor's Office, with real-time tracking and transparent resolution

Finance & Treasury

- **Aabhar (ePension) & ekosh Lite:** Pension disbursal and treasury payments digitised for transparency and efficiency
- **IFMIS & SNA Sparsh:** Integrated finance management system ensuring real-time monitoring of CSS and state schemes, with DBT-linked payments
- **e-Challan & eVoucher:** Electronic receipt and expenditure systems integrated with RBI e-Kuber platform

Commerce & Industries

- **Udyam Aakanksha Portal:** Single-window registration for MSMEs and industries, with CAF generation and QR-coded digital certificates
- **Single Window System:** Common application form for approvals across multiple departments, enabling ease of doing business
- **Firms & Societies Portal:** Fully online process for registration and amendment of firms and societies, with QR-coded certificates
- **Boiler Inspectorate Portal:** Online registration, renewal, and inspection of boilers, with integrated fee payment and third-party verification

Together, these initiatives complement flagship projects, ensuring that justice delivery, grievance

redressal, financial reforms, and industrial growth are supported by robust digital platforms — reinforcing Chhattisgarh's reputation as a leader in comprehensive digital governance.

Mobile Apps

CG VHSND App

The CG VHSND App enables the Health Department to monitor health, early childhood development, nutrition, and sanitation services at Anganwadi and urban-ward levels. Users log in once with their HRMIS ID to generate an MPIN for easy future access. State-level logins for the Health Secretary and Director support centralized monitoring and analysis of VHSND data.

Chhattisgarh Rozgar App

Launched on 14 March 2024 by Hon'ble Dy. CM Dr. Vijay Sharma, the Chhattisgarh Rozgar App enables unemployed youth to register for employment assistance directly from their mobile phones. Aadhaar OTP–based verification is used for quick and secure registration.

Facilitates new registration, renewal, and vacancy information, eliminating the need to visit any office. After registration, users receive their registration number, user ID, and password via SMS, which can also be used to log into the eRojgar portal.

The app Job seekers can apply for state and district-level Rojgar Melas through the app as well.

Other Mobile Apps

Under the IGMIS (Integrated Grievance & Management Information System) project, NIC Chhattisgarh has developed a suite of farmer- and student-focused mobile applications, bringing essential services directly to smartphones.

Key Apps

- **Crop Doctor:** AI-enabled app for image-based identification of pests, diseases, and nutrient deficiencies, with online expert advice. Widely used by farmers for timely crop management
- **e-Krishi Pathshala:** A digital classroom offering study material, video lectures, assignments, and online exams for agriculture students. With over 50,000 downloads, it has become a virtual university on mobile
- **e-Haat:** A marketplace app connecting farmers directly with buyers for selling produce, reducing dependence on middlemen
- **Custom Hiring App:** Facilitates online booking of agricultural machinery, enabling farmers to hire equipment locally and improve mechanisation

Impact

- 1.35 lakh+ downloads across farmer-centric apps
- Direct benefits to farmers in crop management, learning, marketing, and access to farm machinery
- Enhanced transparency and reduced costs in agricultural services

By integrating advisory, education, marketing, and mechanisation support, these mobile apps have empowered farmers and students, making Chhattisgarh a leader in digital agriculture and agri-education services.

▲ Fig 2.3 : e-MaapVigyan of NIC, Chhattisgarh received CSI Award of Recognition

Network and Infrastructure

A robust digital backbone has been established in Chhattisgarh through NICNET, National Knowledge Network (NKN), and advanced video conferencing services, ensuring seamless connectivity for governance, education, research, and justice delivery.

NICNET & NKN

- **District Connectivity:** All 27 districts are connected through 34 Mbps/100 Mbps BSNL links, with 1 Gbps RailTel backup links at six districts
- **Treasury & Departments:** MPLS lines support 67 Treasuries/Sub-Treasuries and 13 State Beverages Corporation locations for secure transactions
- **Judiciary & Academia:** Leased line connectivity provided to 88 court complexes, 36 universities and institutes and state headquarters
- **Core Backbone:** The network backbone integrates 10 Gbps links from PGCIL, BSNL, and RailTel, ensuring high-speed and resilient connectivity
- **SWAN Integration:** Connected to 25 districts, further strengthening the state-wide digital ecosystem

This infrastructure supports secure government communications, advanced research, and delivery of e-Governance services, making Chhattisgarh part of the nationwide high-speed digital grid.

Video Conferencing Services

NIC's state-of-the-art video conferencing (VC) platform has become a vital governance tool in Chhattisgarh.

- **Usage:** Over 3.5 lakh VC sessions conducted between 2019–2025, covering Prime Minister's PRAGATI reviews, NITI Aayog consultations, departmental reviews, and judicial hearings
- **Judiciary:** Court complexes extensively use VC for case hearing from Jails and other locations, reducing delays and costs

The state was awarded 1st Prize in the East Zone (2025) for excellence in video conferencing services

The combination of high-speed networks and advanced VC services has positioned Chhattisgarh as a digitally empowered state, enabling real-time decision-making.

Awards and Recognitions

Chhattisgarh's ICT-led initiatives have earned national recognition across agriculture, education, governance, and ICT infrastructure.

- **2025 – Excellence in Video Conferencing:** 1st Prize, East Zone for outstanding VC services; over 3.5 lakh sessions facilitated governance reviews, judicial proceedings, and national consultations
- **2023 – National e-Governance Gold Award:** For the Crop Doctor App, enabling AI-based crop diagnostics and farmer advisory
- **2023 – mBillionth Award:** For NICler, an AI-driven school assessment tool
- **2022 – CSI SIG e-Governance Awards:** For TelePractice (AI-based student assessment) and e-MaapVigyan (geo-agriculture monitoring)
- **2022 – IMC Digital Awards:** For e-Prashna & e-Uttar, the Vidhan Sabha's digital systems for legislative question management.
- **2022 – Digital Technology Sabha Awards:** For the PMS Portal (pension management) and CSERC e-Petition system

These recognitions reaffirm Chhattisgarh's role as a leader in digital governance, driving innovations in agriculture, education, legislature, and infrastructure.

Way Forward

Chhattisgarh is accelerating digital governance by streamlining land and finance systems, strengthening agriculture services, digitizing healthcare, and expanding e-learning in schools. It is also enhancing citizen services through improved grievance platforms, digital signatures, and data-driven decision-making—creating a seamless, inclusive, citizen-centric ecosystem.

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Ahilyanagar, Maharashtra

Accelerating e-Governance through Digital Innovation

Edited by **SUSHMA MISHRA**

Ahilyanagar has emerged as one of Maharashtra's frontrunners in digital governance and ICT-driven development. With a vision to bring transparency, efficiency, and citizen-centric services, the district has adopted a wide range of technology initiatives—from real-time water management systems to doorstep delivery of government services.

By integrating AI-powered attendance systems, open data platforms, mobile applications, and GIS-based monitoring tools, Ahilyanagar is setting new benchmarks in how technology can strengthen governance at the grassroots.

Historically, the district traces its roots back to 1494 AD, when Malik Ahmed established Ahmednagar as the capital of the Nizamshahi dynasty. Over centuries, its boundaries evolved, and in October 2024, the district was officially renamed Ahilyanagar in honor of Maharani Ahilyabai Holkar.

ICT Initiatives in the District

Ahilyanagar District Website

ahilyanagar.maharashtra.gov.in

The official Ahilyanagar District Website, built on the S3waas framework, is a multilingual, mobile-friendly portal that acts as a one-stop gateway for government services and information. It provides:

- **History & Heritage:** Showcasing the district's cultural and historical legacy
- **Demographics & Governance:** Detailed insights into population, administrative setup, and resources
- **Tenders & Recruitment:** Transparent updates on contracts and employment opportunities
- **Citizen Services:** Easy access to certificates, welfare schemes, grievance redressal, and application tracking
- **Tourism & Economy:** Information on destinations, festivals, and investment opportunities.

Compliant with GIGW accessibility standards, the portal ensures inclusivity, transparency, and citizen-centric e-governance

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Ahilyanagar has emerged as a leader in digital governance, using technology to make services faster, transparent, and more accessible. Initiatives like Jaldoot's real-time water tanker tracking, Sevadoot's doorstep delivery of certificates, AEBAS with face authentication, iRAD for road safety, and open data platforms reflect the district's commitment to citizen-centric governance. By blending innovation with accountability, the district is demonstrating how ICT can transform everyday governance.

Jaldoot

jaldoot.ahmednagar.gov.in

The Jaldoot Portal is Ahilyanagar's flagship digital initiative to tackle water scarcity through real-time tanker management. It combines technology and governance to ensure that water reaches rural and semi-urban communities in an efficient, transparent, and equitable manner.

Key Features:

- **Digital Request System:** Gramsevaks (villages) and Deputy Engineers (urban areas) submit tanker requests online
- **Automated Order Generation:** Requests are approved and tanker orders generated instantly
- **Real-Time Tracking:** Tankers are GPS-enabled, and their movement is monitored via a mobile app by officials
- **Efficient Dispatch:** Block Development Officers coordinate scheduling and delivery
- **Citizen Access:** Residents can apply for tankers and track deliveries through the dedicated Jaldoot mobile app

By integrating approval workflows, GPS tracking, and citizen participation, Jaldoot has created a reliable digital framework for managing water scarcity in the district.

NIC is one of the major contributors of ICT activities. It has played a vital role in promoting ICT usage and executing both State and Central e-Governance programs like providing IT support for Cabinet meeting held in Ahilyanagar. Its contributions to e-Office, AI-driven innovations like Bhashini, AEBAS with face recognition enabled District administration and many other ICT implementations showcase its excellence. I congratulate and wish success to NIC Ahilyanagar and look forward to many more e-governance initiatives in future.

Dr. Pankaj Ashiya, IAS
District Collector and Magistrate
Ahilyanagar District

G.M. Sevadoot

gmsevadoot.ahmednagar.gov.in

G.M. Sevadoot is an e-governance initiative that

brings government services directly to citizens' doorsteps through trained village-level agents. The platform reduces the need for physical visits to government offices, ensuring convenience, efficiency, and wider access to essential services.

How It Works:

- **Online Appointment:** Citizens book services such as residence or income certificates through the portal
- **GM Assistance:** A Gram Mantri or Village Level Entrepreneur (VLE) visits the citizen's home to collect documents
- **Digital Processing:** Applications are processed online through the relevant government portals
- **Home Delivery:** Final digitally signed certificates are mailed to the applicant's residence

By combining technology with last-mile service delivery, G.M. Sevadoot ensures that governance is inclusive, citizen-centric, and truly accessible.

CM's 150 Days Programme Initiatives

Under this programme, the district launched key e-governance tools, including:

- **District Website Updates:** Enhanced with RTI integration for greater transparency
- **WhatsApp Chatbot:** Providing quick, user-friendly access to government services
- **Looker Studio Dashboard:** Allowing the Collector to monitor district activities in real time

Open Data Initiative

A Chief Data Officer (CDO) account has been created on data.gov.in, enabling the district to publish datasets in open, machine-readable formats. This promotes transparency, innovation, and public participation.

Key Events

Cabinet Meeting at Jamkhed

To commemorate the 300th birth anniversary of Maharani Ahilyabai Holkar, the Mahayuti Cabinet convened a special meeting on 06 May 2025 at Chondi, Jamkhed, her birthplace. The session underscored her legacy as a visionary ruler and emphasized the district's role in carrying her ideals forward. The agenda included discussions on a comprehensive development package, with focus areas such as:

- Restoration and conservation of historical monuments
- Infrastructure expansion in rural and urban areas
- Strengthening social welfare schemes to reflect Ahilyabai's inclusive governance model

▲ Fig 3.2 : NIC Ahilyanagar supported the State Cabinet meeting on May 6, 2025, commemorating Ahilyabai Holkar's 300th birth anniversary and outlining development plans with a focus on heritage restoration

Chief Minister's Special Event

On 6 May 2025, the Mahayuti Cabinet held its meeting in Ahilyanagar, Maharashtra, to mark the 300th birth anniversary of Maharani Ahilyabai Holkar. The agenda included approval of a comprehensive district development package covering infrastructure projects, welfare schemes, and renovation of historical monuments.

AEBAS Training

On 1 August 2025, the district administration rolled out the Aadhaar Enabled Biometric Attendance System (AEBAS) with facial authentication to modernize attendance tracking for government employees. Training sessions were conducted to ensure smooth adoption, enhance transparency, and minimize proxy attendance.

eHRMS

The Collector's office has implemented the electronic Human Resource Management System (eHRMS) for digital leave management, enabling efficient tracking, approvals, and record-keeping. This marks another step towards paperless administration and improved HR efficiency within the district.

Way Forward

Looking ahead, Ahilyanagar aims to expand citizen-focused services, strengthen data-sharing ecosystems, and explore new technologies such as AI, IoT, and blockchain for sectors like health, agriculture, and disaster management. Continuous capacity-building for officials, coupled with efforts to bridge the digital divide through better connectivity and literacy, will be key. By scaling these initiatives, the district can reinforce its position as a digitally empowered model for e-governance in India.

▼ Fig 3.1 : Under the iRAD project, NIC District Centre provided 131+ trainings to 1,472+ personnel across 32 police stations, two RTOs, and other offices

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Jamtara, Jharkhand

From Cybercrime Hub to Cybersecurity Hub

Edited by **SUSHMA MISHRA**

Jamtara, once stigmatized for cybercrime, is now scripting a powerful turnaround story through technology-led transformation. Since 2001, the NIC Jamtara District Centre has been spearheading digital initiatives that directly impact governance and citizens' lives. From e-Governance solutions to public service portals, NIC Jamtara has consistently strengthened the digital backbone of the district administration.

By building robust ICT infrastructure, introducing citizen-centric applications, and creating platforms for digital literacy, NIC Jamtara has aligned the district with the vision of Digital India. The launch of Cyber Security Clubs in all 72 high schools has further redefined Jamtara's narrative—from being called a cybercrime hub to emerging as a hub of cybersecurity, digital awareness, and innovation.

ICT Initiatives in the District

Cyber Security Clubs in Schools

Cyber Security Clubs have been established in seventy-two high schools across Jamtara to build awareness and resilience against online threats. Inaugurated by Deputy Commissioner Ravi Anand, IAS, the launch brought together Nodal Officers from each school in person, while students participated through video conferencing. The clubs aim to educate students and citizens on safe digital practices, equipping them with the skills to recognize, prevent, and respond effectively to cyber risks, thereby fostering a secure digital environment in the district.

Visitor Management System and Janta Darbar Portal

ejmt.jharkhand.gov.in

The Visitor Management System and Janta Darbar Portal provide quick and transparent grievance redressal across district, subdivision, block, and circle offices in Jamtara. Developed by NIC under the guidance of the Deputy Commissioner, the system operates through the SWAN network and will soon be migrated to the state data centre for enhanced capacity and scalability.

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Once known for cybercrime, Jamtara is now reshaping its identity through NIC-led digital initiatives. From Cyber Security Clubs in 72 schools to portals for land, healthcare, grievances, and citizen services, the district is strengthening transparency, literacy, and governance. With upcoming projects like an e-Library and a NIELIT Institute, Jamtara is steadily transforming into a hub of cybersecurity and digital empowerment.

Excise e-Lottery Portal

https://exciselottery.jharkhand.gov.in/

The Jharkhand Excise Online Lottery Portal is a transparent and efficient platform for the fair allotment of retail liquor shops under the Jharkhand Excise Rules, 2025. By digitizing the lottery process, it ensures credibility, removes manual intervention, and strengthens public trust in excise administration.

Community Libraries Portal

Jamtara is the only district in India where all 118 gram panchayats host well-equipped community libraries. The portal (jamtaradistrict.in), developed by NIC Jamtara, connects these libraries digitally, providing rural citizens with access to books, e-learning resources, and digital content, thereby promoting literacy and knowledge sharing at the grassroots.

Online Computer Proficiency Tests

To build a digitally literate workforce, NIC Jamtara conducts computer proficiency tests for candidates recruited on contractual or compassionate grounds. These assessments ensure that every new recruit has the essential ICT skills needed to support modern governance and service delivery.

> NIC Jamtara District Centre continues to provide seamless support to the District Administration, ensuring transparent, efficient, and speedy delivery of services for the benefit of citizens at the grassroots level. With the advancement of technology, the Centre remains committed to strengthening the district administration through more effective and innovative digital initiatives in the future.

Shri Ravi Anand, IAS
Dy. Commissioner-cum-District Magistrate & District Collector, Jamtara

Integrated Road Accident Database (iRAD/eDAR)

https://irad.parivahan.gov.in/

The Integrated Road Accident Database, now known as e-Detailed Accident Report (eDAR), has been implemented in Jamtara to enhance road safety. By collecting accident data from police, transport, health, and road-owning agencies, the system enables accurate analysis and evidence-based interventions to reduce road accidents and fatalities.

Jharbhoomi Portal
https://jharbhoomi.jharkhand.gov.in/

Jharbhoomi modernizes land records under the Digital India Land Record Modernization Programme. In Jamtara, the portal supports modules such as MIS, JharBhuLagan, JharBhuNaksha, ULPIN, and Parishodhan, enabling updated land records, automated mutation, and seamless integration between revenue and registration systems.

Next Gen e-Hospital
https://nextgen.ehospital.gov.in/

The Next Gen e-Hospital platform has been implemented at Sadar Hospital, Jamtara. Currently, modules for registration, e-prescription, and laboratory services are active, streamlining hospital workflows and improving patient care through faster, more efficient service delivery.

BOR Examination Portal
https://borexam.jharkhand.gov.in/

The BOR Portal simplifies departmental examinations for Jharkhand government staff. Employees can apply online, track their status, and access updates through the portal, making the process transparent, efficient, and accessible.

National Database of Arms Licenses (NDAL-ALIS)
https://ndal-alis.gov.in/

The NDAL-ALIS portal digitizes the issuance of arms licenses and related permits. Offering twenty-nine services, it supports individuals, entrepreneurs, and industries, while promoting the Government of India's Make in India and Ease of Doing Business initiatives.

JharSewa Portal
https://jharsewa.jharkhand.gov.in/

JharSewa is a citizen-friendly portal built on the ServicePlus framework, offering services such as income, caste, residence, and EWS certificates. Applications can be submitted online, via CSCs, or through Panchayat Swayam Sewaks, with digitally signed certificates delivered directly to citizens, ensuring transparency and convenience.

▲ Fig 4.2 : Cyber Security Club Inaugurated by Shri Ravi Anand, IAS, Deputy Commissioner–cum–District Magistrate, Jamtara

ICT Support for VVIP Events

NIC Jamtara has provided ICT support for major VVIP programmes, including two-way video conferencing during the inauguration of an electric power station at Bheluwa by the Hon'ble Chief Minister of Jharkhand. Such support ensures smooth execution of high-profile events.

ICT Support for Elections

During elections, NIC Jamtara has delivered end-to-end ICT support, implementing critical applications such as polling party randomization, vehicle and material management, police personnel allocation, observer and Encore portals, e-Affidavit, ETPBMS, C-Vigil, EMS, seizure management, and live poll-day monitoring. These systems have ensured transparency and efficiency in the electoral process.

NICNET and NKN Services

NIC Jamtara provides round-the-clock ICT and network support to the district administration and government offices. It also offers NKN connectivity to educational institutions, ensuring seamless access to digital resources for academic and administrative purposes.

Way Forward

NIC Jamtara continues to drive the vision of Digital India with transformative projects such as an e-Library, a NIELIT Institute, and a Podcast Room. The e-Library will expand access to digital resources, support e-learning, and strengthen Jamtara's shift from a cybercrime hub to a cybersecurity hub. The proposed NIELIT Institute will offer IT and Electronics certificate courses—free for SC/ST students and affordable for others—ensuring inclusive opportunities for local youth. By implementing ICT services across departments, NIC Jamtara is building a robust digital infrastructure and preparing the district to leverage emerging technologies for governance and development.

▼ Fig 4.1 : Students reading in a digitally enabled community library. Jamtara is India's only district where all 118 gram panchayats host such libraries, powered by an NIC-developed portal

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Tonk, Rajasthan

Leading Digital Transformation through Advanced ICT & AI Solutions

Edited by **VINOD KUMAR GARG**

NIC Tonk has built strong ICT infrastructure, enabling departments with tech-driven solutions and e-Governance initiatives that improve service delivery, transparency, and citizen access. A flagship achievement is PadhaiWithAI, an AI-powered web platform supporting 10th-grade Mathematics learning across 353 schools.

With expertise in cyber security, digital authentication, and data-driven planning, NIC Tonk continues to lead the district's transformation toward efficient, transparent, and citizen-centric governance.

ICT Initiatives in Tonk District

PadhaiWithAI

PadhaiWithAI is an AI-based personalized tutoring initiative conceptualized and implemented by the District Administration, Tonk, in collaboration with NIC Tonk. Launched under the LAKSHYA 2025 campaign, the project aims to improve Class 10 RBSE board examination results in government schools.

Key Features

- Coverage of all 353 government senior secondary schools in Tonk district
- 11,977 Class 10 students onboarded
- AI-driven personalized tutoring with bilingual support (Hindi/English)
- Special focus on Hindi-medium schools, the largest beneficiary group
- Comprehensive analytics dashboards at school, block, and district levels
- Conducted as a 6-week campaign (January–February 2025)
- Delivered unprecedented improvement in Class 10 Mathematics results - surpassing both state averages and previous district performance

Sushil Kumar Agrawal
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NIC Tonk spearheads Tonk district's digital transformation through innovative ICT initiatives like PadhaiWithAI, iRAD-based ambulance repositioning, Biometric Attendance System, EMS, and DILRMP. These initiatives enhance transparency, efficiency, and citizen services. Nationally recognized for innovation, NIC Tonk advances the Digital India vision through data-driven, inclusive, and citizen-centric governance.

The initiative has received wide recognition, including appreciation from NITI Aayog officials and national-level acknowledgement during prestigious events such as:

- National Seminar, Vigyan Bhawan, New Delhi (August 2025)
- AI for Viksit Bharat Showcase, NDMC Convention Centre, New Delhi (September 2025) - appreciated by Hon'ble Finance Minister Smt. Nirmala Sitharaman, Hon'ble Minister of IT & Railways Shri Ashwini Vaishnaw, and senior government leadership

Biometric Attendance System (BAS)

NIC Tonk serves as the State Nodal Officer for BAS in Rajasthan, ensuring its effective implementation across government offices. Responsibilities include:

- Stakeholder coordination and monitoring
- Facilitating biometric updates
- Generating and analyzing attendance reports
- Overseeing device installation and configuration

iRAD

Tonk became the first district in India to reposition 108 ambulances near accident black spots using the Integrated Road Accident Database (iRAD).

- Four high-risk sites identified through iRAD analysis
- Ambulance response time reduced to 3–5 minutes (earlier 15–20 minutes)

> PadhaiWithAI has revolutionized mathematics learning across Tonk's schools through AI-powered tools. This innovative effort is a significant step toward enhancing education quality, empowering teachers, and improving student outcomes. I extend my appreciation to NIC Tonk and the dedicated team for this innovative effort and wish them continued success in driving educational excellence and digital innovation.

Smt. Kalpana Agarwal, IAS
District Collector, Tonk

- Achieved without additional vehicles, demonstrating efficiency through data-driven planning
- Recognized at the national level by the Ministry of Road Transport & Highways (MoRTH) and NIC Delhi

Elections Management System (EMS)

NIC Tonk plays a pivotal role in managing election operations across the district. Through the Elections Management System

(EMS), it oversees personnel deployment, poll-day coordination, vote counting, and result dissemination. In addition, NIC Tonk ensures seamless pre- and post-election processes by effectively facilitating and integrating ECI applications, thereby strengthening efficiency, transparency, and credibility in the electoral process.

DILRMP

Under the Digital India Land Records Modernization Programme (DILRMP), land records across all nine tehsils of the district have been fully digitized. Citizens can now conveniently access digitally signed Records of Rights through tehsil offices, Common Service Centres (CSCs), and e-Mitra centres, ensuring transparency, efficiency, and ease of service delivery.

ICT Support During VVIP Visits

NIC Tonk has successfully provided ICT support during visits of the Hon'ble Prime Minister and other dignitaries, ensuring:

- Secure communication networks
- Real-time monitoring systems
- ICT-enabled safe houses with enhanced connectivity
- Seamless coordination for protocol execution

NIC Tonk has also been instrumental in implementing several other flagship e-Governance projects that strengthen service delivery and improve transparency. These include the Integrated Financial Management System (IFMS), and the Pregnancy and Child Tracking System (PCTS). Citizen services have been further streamlined through initiatives like eTransport (Vahan and Sarathi), the Arms License Issuance System, and the Civil Registration System (Pehchan). Educational and institutional reforms are supported by Sanstha Aadhaar, Shaladarpan, the Private School Portal, and Gyan Sankalp.

▲ Fig 5.2 : PadhaiWithAI Classroom

In addition, NIC Tonk has enhanced welfare and administrative services through the Public Distribution System (PDS), ePanjiyan, and e-Gram, ensuring digital access and efficiency across key sectors.

Awards and Recognition

- **2025:** Awarded the District Informatics Officer (DIO) by District Administration for development & implementation of PadhaiWithAI
- **2025:** Awarded by Hon'ble Deputy Chief Minister, Shri Prem Chand Bairwa, for excellence in ICT innovation
- **2020, 2021, 2024:** District-level awards for outstanding IT initiatives

Way Forward

Building on its progress, NIC Tonk will continue to expand awareness and adoption of ICT-enabled services, further strengthening alignment with the Digital India vision. The focus ahead is on harnessing technology to drive socio-economic growth, empower citizens with accessible digital solutions, and contribute to India's journey toward becoming a global digital leader.

▼ Fig 5.1 : Dr. Saumya Jha (IAS), Smt. Kalpana Agrawal (IAS) and NIC officials during NITI Aayog presentation

NIC Tonk has been instrumental in the Successful development & implementation of the PadhaiWithAI initiative by District Administration, which has transformed the way students across the district engage with Mathematics through AI-powered tools. From developing a robust digital platform to ensuring smooth deployment across all schools, NIC's technical expertise and dedication have been commendable.

I sincerely appreciate the efforts of DIO NIC Tonk for his pivotal role in my education-focused digital innovation and, I wish him continued success in driving impactful e-Governance and ICT projects across the district.

Dr. Saumya Jha, IAS
Director, Medical (IEC), Rajasthan and
Ex-District Collector Tonk

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eGov Products & Services

Drug De-Addiction Registry Portal

Cracking Down on Drug Pilferage in Punjab

Edited by **VINOD KUMAR GARG**

Punjab has long been at the forefront of India's struggle against opioid addiction. To confront this crisis, the state has built a wide network of Outpatient Opioid Assisted Treatment (OOAT) centres and partnered with private facilities to provide safe, affordable, and sustained treatment. These centres were designed to be places of hope — where patients could begin the difficult journey from dependence to recovery.

But alongside this progress emerged a set of hidden challenges. The very medicines meant to heal were vulnerable to pilferage and diversion. In some cases, patients were enrolled under duplicate identities; in others, gaps in manual record-keeping allowed leakages in the supply chain. Fake beneficiaries, ghost enrollments, and unmonitored drug inventories weakened the system, raising doubts about accountability and undermining the trust of both patients and citizens.

It was clear that treatment alone was not enough — the state needed a digital shield to secure the integrity of its de-addiction ecosystem. The Punjab Health and Family Welfare Department, with the support of NIC Punjab, responded with an innovation that combines governance with technology: the Drug De-Addiction Registry Portal (DDRP). By embedding Aadhaar-based biometric authentication, AI-powered face recognition, and real-time inventory management, DDRP ensures that medicines reach only genuine patients, every record is transparent, and every dose is accounted for.

This initiative represents more than a software system. It is a commitment to restoring confidence, protecting resources, and strengthening the fight against addiction through the power of digital governance.

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Punjab's Drug De-Addiction Registry Portal (DDRP) marks a major leap in the state's fight against opioid addiction. Integrating Aadhaar-based biometric verification, AI-powered face recognition, and real-time drug inventory management, DDRP eliminates fake enrollments, prevents medicine pilferage, and ensures transparent treatment delivery. The unified digital registry allows patients cross-centre access and enables administrators to monitor anomalies instantly. By merging technology with governance, DDRP strengthens accountability, safeguards public resources, and builds renewed trust in Punjab's de-addiction ecosystem.

The Challenge

While Punjab has invested in a network of Out-patient Opioid Assisted Treatment (OOAT) centres and private facilities, systemic gaps left the programme vulnerable:

- **Pilferage and diversion:** Medicines meant for patients often leaked into the illegal market due to weak supply controls
- **Fake and duplicate enrollments:** Ghost beneficiaries, forged identities, and multiple registrations consumed resources without delivering care
- **Manual and fragmented data:** Paper-based registers and isolated records resulted in duplication, delays, and poor visibility
- **Restricted patient access:** Patients were tied

The menace of drug abuse poses a serious challenge to the health and well-being of our society. Punjab has taken a significant step forward by leveraging advanced technologies such as Aadhaar-based biometric authentication and AI-enabled face recognition to secure drug distribution at de-addiction centres. The Drug De-Addiction Registry Portal (DDRP) is an exemplary initiative that not only prevents pilferage but also ensures transparency, accountability, and better patient care. This innovation demonstrates the power of digital governance in addressing complex social issues and stands as a model for replication across the country. I congratulate NIC Punjab and the Department of Health and Family Welfare for their commitment to harnessing technology for a healthier and drug-free society.

Shri Kumar Rahul, IAS
Principal Secretary
Department of Health & Family Welfare

to a single centre, and treatment continuity was broken if medicines were unavailable there

- **Weak accountability:** Without real-time monitoring, anomalies were only discovered during periodic audits

The Solution

The Drug De-Addiction Registry Portal (DDRP) was designed to directly address these pain points through a digital-first approach:

- Secure identity checks using Aadhaar-based biometric authentication, strengthened by AI-driven face recognition and geofencing
- Seamless integration with eAushadhi, ensuring real-time inventory management and eliminating medicine leakage
- A unified digital registry across the state that removes duplication and maintains transparent patient records
- Cross-centre treatment flexibility, allowing patients to collect medicines from any facility with stock, improving convenience and reducing drop-outs
- Automated dashboards and alerts that give administrators live insights into consumption, anomalies, and stock movement

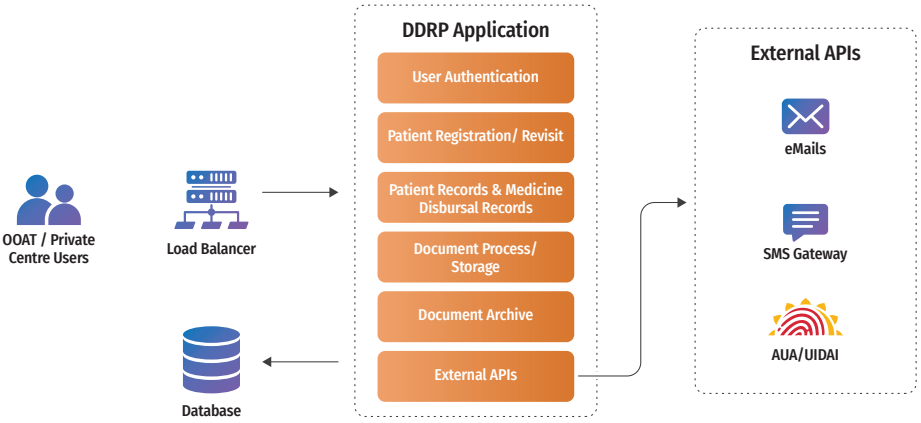
Together, these features transform DDRP into more than just a monitoring tool — it becomes a digital shield that safeguards resources, builds accountability, and strengthens patient trust in the de-addiction system.

Technologies Behind DDRP

At the core of DDRP lies a secure, scalable, and cost-effective architecture, built using open-source technologies and integrated with national digital platforms. Each component has been designed with two goals in mind: patient safety and system accountability.

- **Open-source foundation:** Developed using PHP 8.3 and PostgreSQL 14.4, DDRP is lightweight, scalable, and economical, making it easy to maintain and expand
- **Aadhaar Data Vault:** Sensitive identity information is stored securely, ensuring compliance with privacy guidelines and preventing misuse of patient data
- **AI/ML-enabled face authentication:** A mobile application uses face recognition coupled with geofencing, verifying that patients are physically present at the centre during treatment
- **Integration with eAushadhi:** By linking directly with Punjab's drug supply chain platform, DDRP connects patient dispensing records with medicine inventories in real time
- **Automated digital workflows:** From enrollment to medicine distribution, processes are digitized to replace manual registers, reducing errors and speeding up service delivery
- **Real-time dashboards and analytics:** Administrators gain visibility across centres, enabling faster decision-making and proactive interventions when anomalies appear

This technology stack ensures that DDRP is not just a monitoring tool, but a living system — continuously updating, self-correcting, and adaptable to the evolving needs of public health governance.



▲ Fig 6.2 **DDRP Application Software Architecture**

Benefits and Impact

DDRP has transformed Punjab's de-addiction programme by replacing manual gaps with a transparent, digital-first system

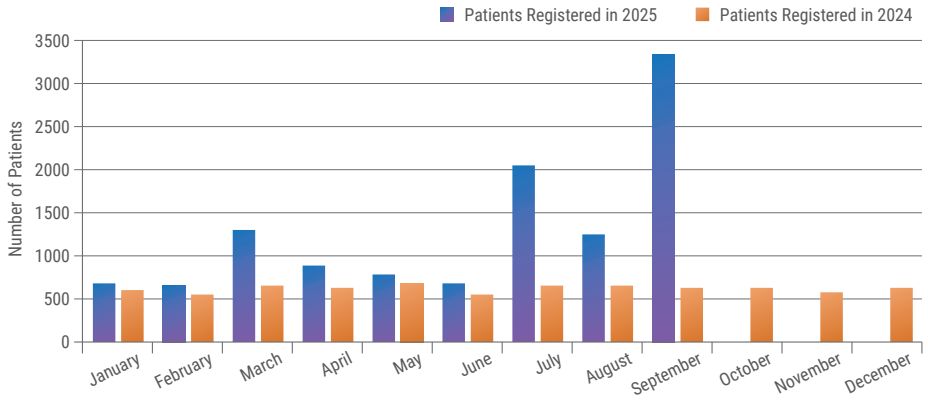
- **Secure treatment –** Aadhaar + AI checks ensure only genuine patients receive medicines
- **No pilferage –** Real-time sync with eAushadhi closes supply chain leakages
- **Patient convenience –** Cross-centre access reduces dropouts and improves continuity
- **Efficiency –** Digital workflows speed up enrollment and dispensing, cutting wait times.
- **Accountability –** Dashboards and alerts provide real-time visibility for administrators
- **Better planning –** Centralized data enables forecasting and evidence-based policy.

In short, DDRP safeguards medicines, builds trust, and improves patient outcomes through the power of digital governance

Way Forward

The success of DDRP is only the first step in Punjab's larger vision of technology-enabled public health. Going forward, the state plans to strengthen the system with predictive analytics for medicine demand forecasting, ensuring uninterrupted availability of essential drugs. The Aadhaar-based and AI-driven authentication framework will be extended to other health services where identity verification and accountability are critical. Integration with national digital health platforms will further enhance interoperability and continuity of care, while future upgrades may include tracking counselling sessions, relapse monitoring, and psychosocial support to make treatment holistic. Most importantly, Punjab aims to position DDRP as a replicable model for other states, demonstrating how digital governance can safeguard resources, improve patient outcomes, and restore trust in critical healthcare systems.

▼ Fig 6.1 **Patients Registration Month & Year Wise**



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eGov Products & Services

Jigyasa

An AI-powered Sahayika for Digital India

Edited by **NISSY GEORGE**

The digital revolution now touches every corner of India. Millions of government services are online, delivering transparency, inclusion and broader access. Yet citizens still face fragmented portals, unintuitive UI/UX and complexity that turn simple civic tasks into prolonged, often discouraging journeys.

Jigyasa resolves that friction to some extent. As an AI-empowered sahayika for Digital India, it is a plug-in conversational layer that integrates with any government website or app. Users speak in natural language; Jigyasa understands intent, retrieves answers or points to the exact form or page, and can translate instantly via services like Bhashini, turning the whole interaction into a calm, guided conversation.

Features & Capabilities

- **No hassle integration:** Easily integrates into existing government websites through API calls
- **Customizable AI models:** Can be tailored to use different AI models for different use cases
- **Multilingual Support:** Supports multiple languages with optional integration of translation services such as Bhashini
- **Feedback driven training:** Continuously improves through real user feedback

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India has proven its global leadership in cost-effective e-Governance solutions, yet citizens still struggle with interfaces that fail to provide meaningful, guided interactions. Jigyasa revolutionizes this landscape as a seamless, AI-powered, multilingual conversational layer that can be plugged into existing e-Gov solutions. It transforms complex systems into intuitive, human-centered experiences where users simply ask and are navigated to the relevant sections. With Jigyasa, digital governance becomes not just accessible but profoundly intuitive, inclusive, and empowering.

- **CPU & GPU variants:** Variants available for both CPU and GPU infrastructures.
- **Customizable chatbot UI and themes:** Dynamic chatbot interface customizable to match the specific look and feel of any application or website.

Technology and architectural flow

At the heart of Jigyasa lies a carefully engineered intelligence pipeline which can be understood through five powerful pillars that transform raw queries into meaningful, guided experiences.

Special Semantic Search

Unlike conventional keyword-based search, Jigyasa infuses semantic intelligence that harmonizes keyword signals with deep contextual understanding. The user has the liberty to choose either keyword search, semantic search, or both, depending on their needs. With adjustable weights, it balances domain-specific keywords and nuanced meanings, capturing intent, relationships, and context. This ensures that even vague or unstructured queries are resolved with precise, relevant results.

AI-based Reranking

Once candidate results are retrieved, Jigyasa applies advanced reranking models. Each result is scanned and re-evaluated to determine whether it truly answers the query. This ensures that the system does not just return "something similar" but instead pushes the contextually aligned answers to the top.

Knowledge Graph Synthesis

Raw answers alone are not enough, Governance information is often interconnected. Jigyasa transforms retrieved knowledge into a structured knowledge graph, weaving together information located on different pages into a coherent storyboard, giving user a complete, context-rich response that truly resolves his/her Jigyasa (curiosity).

AI-based Navigation

Through its interactive storyboard, users can navigate directly to the exact piece of information with a single click. It transforms static portals into living, conversational journeys where information is both delivered and contextually explored instantaneously even if it's buried deep within the sitemap.

Feedback and Enhancement

Every interaction is a learning opportunity. Jigyasa collects user feedback and performance data, feeding it back into its models to constantly refine accuracy, responsiveness, and contextual depth. This closed-loop system ensures that Jigyasa is not static but an ever-evolving AI assistant that grows sharper with every query.

Tech Stack and Workflow

Jigyasa is designed to work with containerized components, ensuring scalability and perfor-

mance with Docker. Each of the following components communicates via APIs built on Python FastAPI.

- **Data Extraction:** Crawls, chunks, and stores content in text and vector formats using FastAPI + Qdrant DB
- **Information Retrieval:** Delivers the most relevant content via keyword and semantic search, powered by open-weight AI models
- **Optional LLM:** Converts retrieved data into a knowledge graph, revealing deep insights
- **Pluggable Frontend:** Dynamic, customizable JS interface that learns from feedback and integrates effortlessly

Benefits

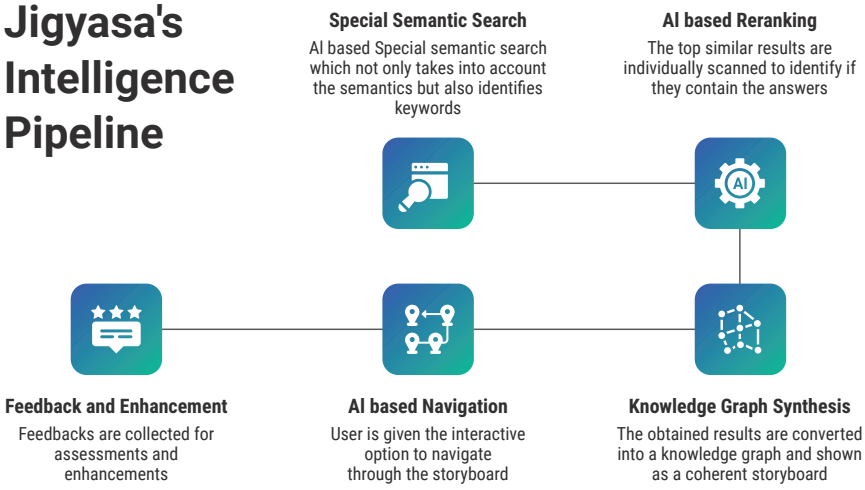
Jigyasa delivers immediate, measurable value to every stakeholder, transforming the e-governance experience from a challenge into an opportunity.

For Citizens

- **Zero-Learning-Curve Access:** Find information instantly by asking naturally in your preferred language
- **Enhanced Digital Inclusion:** Breaks down barriers for non-tech-savvy users, non-native English speakers, and persons with disabilities
- **Time and Cost Savings:** Drastically reduces the time and effort spent on simple tasks, from form searches to scheme eligibility checks

For Government Departments

- **Reduced Support Burden:** Cuts down helpline calls and in-person queries, freeing staff for complex, high-value tasks. Data-Driven Insights: Gain real-time analytics on citizen pain points, popular queries, and portal inefficiencies
- **Seamless Integration:** Low-cost, API-based plugin works with existing infrastructure, protecting previous investments
- **Accelerated Digital Adoption:** Intuitive interaction builds trust and encourages wider use of e-governance services
- **Unified, Multilingual Access:** Delivers a consistent, high-quality experience across all portals, strengthening the Digital India brand
- **Increased Transparency:** Provides clear, direct pathways to information fostering greater public trust



Conclusion

A functional model of Jigyasa was recently demonstrated to the Principal Secretary of IT, Maharashtra, leading to the department's decision to sponsor GPU resources under the IndiaAI mission. As we move towards securing the production infrastructure, our parallel objective is to evolve Jigyasa from a standalone solution into a foundational, open-source platform. This strategic transformation will enable NIC to build and deploy intelligent assistants across its projects, driving a significant shift in the e-Governance ecosystem.

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eGov Products & Services

Odisha Disaster Resource Network

Every Life is Precious

Edited by **NISSY GEORGE**

The Odisha State Disaster Management Authority (OSDMA), established in 1999, is the state's apex body for disaster management and resilience building. The Odisha Disaster Resource Network (ODRN) complements its efforts by serving as a centralized, GIS-based database of manpower, infrastructure, and equipment across all administrative levels. By providing real-time, location-specific information, ODRN supports disaster management planning, enables swift mobilization of resources, and strengthens coordination among agencies. This technology-driven platform enhances preparedness, reduces risks, and builds resilience across Odisha.

Objectives

- **Resource Inventory Management –** Maintains an updated database of emergency resources, including equipment, human, and infrastructure
- **Real-time Accessibility –** Provides quick access to information on resource availability for government agencies and disaster management teams
- **Coordination & Rapid Response –** Facilitates better coordination among various departments, and stakeholders for efficient disaster response
- **Transparency & Accountability –** Ensures proper tracking and utilization of resources to prevent mismanagement and delays
- **Integration with Disaster Management Plans –** Align with emergency response frameworks for a well-coordinated disaster management strategy

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The Odisha Disaster Resource Network (ODRN) is a centralized GIS based digital platform (https://odrn.nic.in/) of resource management system designed to enhance disaster preparedness, response, and recovery in Odisha by tracking and managing critical resources i.e. human, infrastructure and equipment resources needed during disasters such as cyclones, floods, droughts, and other emergencies.

Features

- **GIS-Enabled Mapping –** Visualizes shelters, equipment, manpower, and other assets across State, District, Block, and Gram Panchayat levels, ensuring easy deployment during emergencies
- **Resource Planning & Mobilization –** Helps administrations allocate rescue teams, shelters, and equipment effectively during disasters
- **Planning Support –** Assists in preparing Disaster Management Plans (DMPs) at all levels using spatial data and updated inventories
- **Secure Access & Web Availability –** Provides role-based login for authorized officials with secure, multi-platform access to support quick decision-making

Functionalities

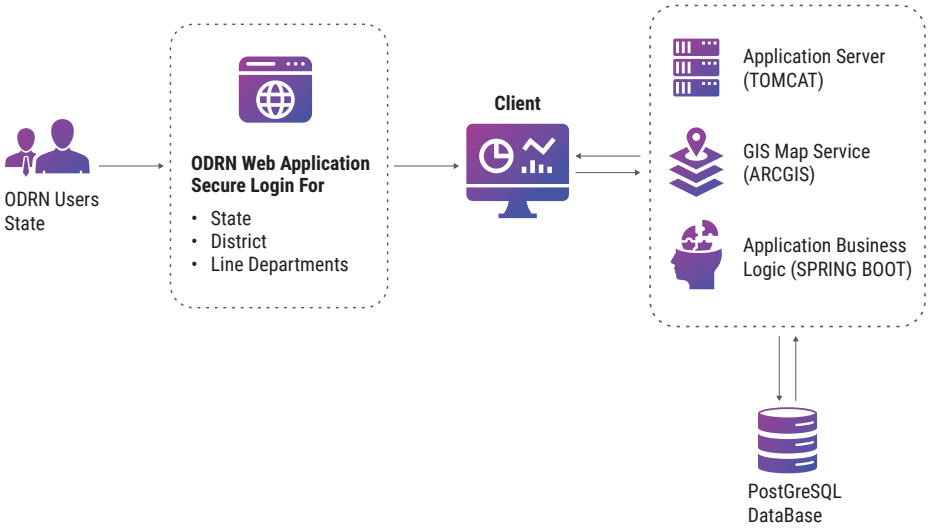
- **Resource Inventory Management –** Maintains a comprehensive, regularly updated database of manpower, infrastructure, and equipment at state, district, and block levels
- **GIS-Based Visualization –** Provides map-based display of resources, shelter capacities, and routes for quick identification, mobilization, and spatial analysis of disaster-prone areas
- **Planning & Decision Support –** Assists in preparing and updating Disaster Management Plans, identifies resource gaps, and informs procurement and capacity-building
- **Emergency Resource Mobilization –** Enables real-time identification of nearest resources, ensuring efficient logistics, allocation, and deployment during disasters
- **Inter-Agency Coordination –** Strengthens collaboration among OSDMA, district authorities, line departments, ODRAF, SDRF, and NDRF
- **Reporting & Documentation –** Generates customized reports on resources, infrastructure, readiness, and deployment, supporting audits and post-disaster reviews
- **User Access & Security –** Provides role-based login for officials at different levels, ensuring secure, confidential, and controlled access to information
- **Information Support –** Keeps officials updated on available resources through a centralized system
- **User Management –** Allows controlled addition and management of authorized users.
- **MIS Report Generation –** Creates management information system reports for planning, monitoring, and evaluation

Technologies Used

The ODRN application is developed using Spring Boot on the Model-View-Controller (MVC) framework, ensuring a clean, scalable, and maintainable codebase. This architecture enables seamless interaction between front-end and back-end components, efficient data flow, and modular development. Designed with a modular structure, secure data management, responsive user interface, advanced visualization tools, and integrated geospatial intelligence, the system provides both reliability and flexibility for disaster management operations.

Backend Layer

- **Framework:** Spring Boot provides a robust, production-ready environment for web applications
- **Database:** PostgreSQL ensures secure data storage, fast query execution, and reliable performance
- **Data Handling:** Supports secure management of user data with proper transaction handling and integrity checks



▲ Fig 8.1 **Software Architecture**

Presentation Layer

- **Template Engine:** Thymeleaf is used for dynamic content rendering
- **User Interface:** Built with Bootstrap for a responsive, mobile-friendly, and accessible design
- **Data Visualization:** Chart.js powers interactive dashboards, enabling users to interpret and analyze complex data easily

Integration & GIS Capabilities

- **NICMAP Service API:** Integrates geospatial functionalities through Bharat Map GIS, allowing spatial mapping, visualization, and location-based insights
- **Decision Support:** Enhances disaster planning and response by combining resource data with geospatial intelligence

Benefits

- **Improved Resource Visibility & Tracking –** Maps manpower, infrastructure, and equipment across locations, helping authorities quickly identify available resources, avoid duplication, and ensure better utilization
- **Faster & More Effective Response –** Pre-mapped resources enable quicker mobilization, reducing delays and saving lives
- **Better Preparedness –** Highlights resource gaps in advance, supporting disaster management plans at state, district, block, and Gram Panchayat levels
- **Coordinated Planning –** Centralized yet location-specific data improves coordination across all administrative levels
- **Efficient Recovery –** Resource availability data supports faster and more effective recovery planning
- **Transparent Decision-Making –** Regularly updated, mapped data reduces ambiguity, enhances accountability, and builds public trust
- **Optimized Resource Allocation –** Matches needs with available resources, allowing pre-positioning in high-risk areas and preventing wastage
- **Scalability & Dynamic Updating –** GIS-based system allows continuous updates as resources change, or are redistributed
- **Risk Reduction & Resilience –** Identifies recurring gaps and vulnerabilities, helping Odisha strengthen resilience over time
- **Integration with Other Systems –** Supports smoother functioning of the overall disaster management ecosystem

Way Forward

The future of ODRN lies in strengthening real-time tracking of critical resources through GPS/RFID and live dashboards, and integrating with Odisha's Early Warning Systems for pre-disaster mobilization. A mobile app with offline access will enhance usability in remote areas, while synchronization with Health, Police, Fire Services, and other departments will ensure coordinated action. By applying AI and predictive analytics, ODRN can identify resource gaps, generate readiness scores, and guide better planning. These advancements will make Odisha's disaster response more dynamic, coordinated, and resilient, advancing the state's "Zero Casualty Mission."

Odisha Disaster Resource Network (ODRN) application is a tool for OSDMA and the state of Odisha, as it centralizes information on infrastructure, equipment, and manpower with a GIS-based platform. It enables quick identification and mobilization of critical resources during disasters, thereby reducing response time and ensuring timely rescue and relief operations. By mapping resources at Gram-Panchayat, Block, District, and State levels, it strengthens preparedness and improves planning for disaster management and mitigation. It fosters better coordination among different stakeholders, ensuring smooth disaster management efforts. Transparency and accountability in resource use are enhanced, boosting efficiency. Ultimately, ODRN helps in minimizing the impact of disasters and helpful to achieve ZERO CASUALITY MISSION.

I would like to congratulate NIC, Odisha team for providing technical support and Officials of OSDMA for making this a successful project.

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PAIMANA Portal

Infrastructure Project Monitoring Platform

Edited by **ARCHANA SHARMA**

The PAIMANA Portal (ipm.mospi.gov.in) is a flagship initiative of the Ministry of Statistics and Programme Implementation (MoSPI), envisioned to serve as a unified digital platform for monitoring, evaluation, and dissemination of data related to infrastructure and project management. PAIMANA was formally launched on 25th September by the Hon'ble Minister of State for Statistics and Programme Implementation, Shri Rao Inderjit Singh, marking a significant milestone in the Government's commitment to transparency and data-driven governance.

The portal enhances accountability by ensuring real-time access to reliable project information, thereby strengthening evidence-based decision-making and enabling efficient governance. It comprehensively captures the implementation status of projects worth ₹150 crore and above, covering over 1,700 projects across more than 20 Ministries, with data being regularly reported by Line Ministries, Departments, and Implementing Agencies.

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The PAIMANA Portal, developed by MoSPI, provides a unified digital platform for monitoring and evaluation of high-value infrastructure projects across India. Covering projects worth over Rs. 150 crore, it enhances transparency, supports real-time decision-making, and ensures better coordination among stakeholders. It enables evidence-based governance and helps ensure timely monitoring of critical national projects.

The National Informatics Centre (NIC) conducts periodic project review meetings with the Department and continuously implements systemic improvements to accelerate project execution. These efforts play a vital role in identifying bottlenecks, analyzing time and cost overruns, and facilitating timely corrective measures, ultimately promoting the culture of performance-oriented and transparent project management across the Government ecosystem.

Technology Stack

- **Frontend:** HTML, CSS responsive interface with Bootstrap for UI design
- **Database:** MS SQL for structured data storage
- **Hosting & Infrastructure:** NIC Cloud for secure and scalable deployment
- **Analytics & Visualization:** SSRS for Integrated BI tools and dashboards with drill-down features
- **Security:** Role-based access control, SSL encryption, and compliance with government cybersecurity standards
- **APIs & Integration:** RESTful APIs for seamless data exchange with other government platforms
- **Prototype:** Figma for Prototyping and wireframe

Software Architecture

The system follows a layered architecture comprising several key components. Multi-layered architecture ensures scalability, security, and effi-

MOSPI has introduced a one-stop Infrastructure web platform called PAIMANA which serves as a reliable data source for monitoring the progress of ongoing Central Sector infrastructure projects costing more than Rs. 150 crores. By integrating monitoring and analytics into a unified platform, PAIMANA provides the Ministries with powerful actionable insights, strengthens accountability, and helps translate ambitious investments into early outcomes that improve people's lives and accelerate nation-building.

NIC has played a pivotal role in advocating for ICT adoption and in overseeing the implementation of technology-led solutions across the Ministry. I have full confidence that NIC will continue this excellent work, providing the necessary technical support and expert guidance to ensure that ICT services are implemented successfully, always with the ultimate aim of benefitting the citizen.

Dr. Saurabh Garg, IAS
Secretary, Ministry of Statistics and Programme Implementation

cient data exchange across multiple components. Data entry and integration are managed through secure interfaces where ministries and agencies upload project information. Remote data capture mechanisms fetch information from external systems using RESTful APIs. It interacts through the load balancer, which manages and distributes incoming requests efficiently across different servers to maintain performance and reliability. Supporting components such as Enterprise Libraries, Relay Service, Logger Service, and Reporting Service (SSRS) provide utility functions, communication, logging, and report and Dashboard generation.

It is also integrated with Legacy Data from older systems to maintain historical continuity.

Overall, this architecture enables seamless integration, validation, reporting, and visualization for government projects in real time, ensuring reliability, transparency, and informed decision-making. Automated validation processes ensure data accuracy, while monitoring dashboards enable continuous tracking of project progress. Authorized users can review and analyze data to identify bottlenecks and assess overall status.

Salient Features

The platform serves as a centralized project monitoring system, providing a single-window interface for ministries, departments, and implementing agencies to upload, tracks, and review project information. It features real-time dashboards with drill-down capabilities, enabling users to monitor progress across sectors, states, and timelines. Through secure RESTful APIs, the system ensures seamless data capture and integration from external servers. A role-based access control mechanism safeguards data and ensures accountability by granting customized access rights to different user categories.

▲ Fig 9.2 : PAIMANA was launched on 25 September 2025 by Hon'ble MoS (S&PI), Shri Rao Inderjit Singh

The platform also features an Interactive Reporting Interface, designed to generate customized, downloadable, and data-rich reports for policymakers, administrators, and stakeholders. This system-generated reporting module, developed using SQL Server Reporting Services (SSRS), produces an 80-page comprehensive report with advanced visualization informatics, seamlessly blending text, tables, graphs, and charts. The reports provide detailed insights into the five outstanding projects, highlighting their progress, achievements, financial status, and critical milestones through clear and visually engaging analytics.

Beyond static summaries, the interface supports dynamic filtering and drill-down analysis, empowering users to explore project data from multiple dimensions. Its analytics and decision-support features enable trend analysis, forecasting, and bottleneck identification, thereby strengthening strategic planning and informed decision-making. With a mobile-responsive interface, users can conveniently monitor project progress from any device.

Built on secure NIC Cloud infrastructure, the system adheres to government cybersecurity and data protection standards. Furthermore, its modular and scalable architecture allows seamless integration of new features, datasets, and emerging technologies—ensuring long-term adaptability, sustainability, and continuous improvement in project monitoring and evaluation.

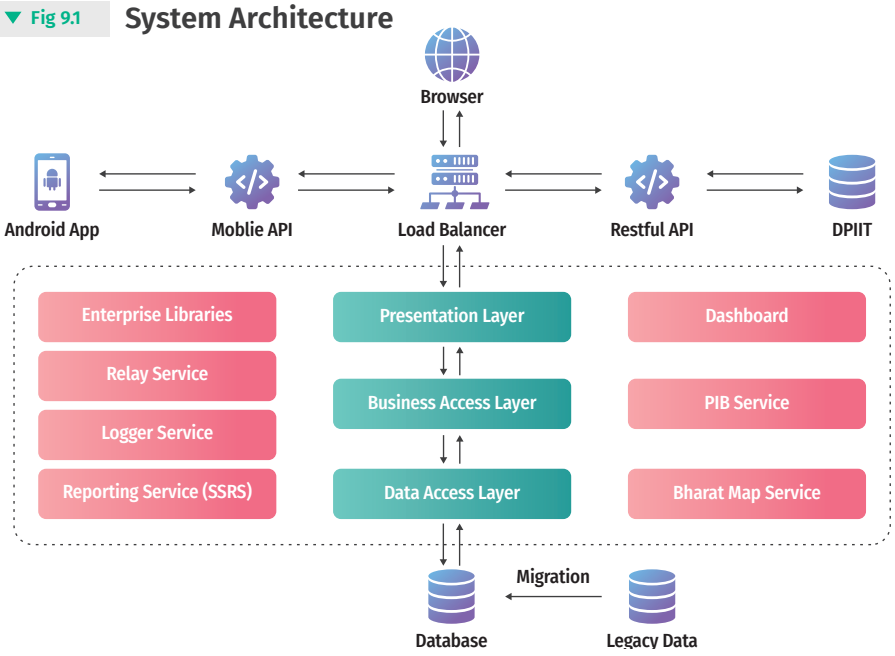
Impact and Benefits

The system enhances transparency by promoting accountability through open and reliable project information. It improves efficiency in monitoring by enabling real-time progress tracking, reducing delays in project execution. Policymakers benefit from informed decision-making, supported by accurate analytical insights that guide effective interventions. The platform ensures resource optimization by facilitating better allocation and utilization of financial and human resources. It also fosters stakeholder collaboration, strengthening coordination among ministries, departments, and implementing agencies. Ultimately, the system delivers greater public value by ensuring timely project completion and improving service delivery to citizens.

Way Forward

Going ahead, the PAIMANA Portal will integrate advanced analytics, AI-driven forecasting, and enhanced mobile accessibility to further strengthen project monitoring and evaluation. The AI-driven forecasting will utilize machine learning to predict time and cost overruns, resource needs, and potential risks, enabling timely and data-backed interventions for improved project outcomes. Continuous stakeholder engagement and system enhancements will ensure greater usability, stronger decision support, and alignment with national development priorities.

▼ Fig 9.1 **System Architecture**



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Permissions Management System

Powering Agile and Transparent Governance in Cyberabad Police

Edited by **NISSY GEORGE**

In the era of digital governance, efficiency no longer means merely putting public services online. It means building systems that can evolve - systems that can respond to new policies, urgent situations, and changing citizen needs without heavy technical intervention. Traditional government applications often fail here; their rigid design makes even small updates slow, costly, and dependent on specialized software teams.

Recognizing this challenge, NIC, Hyderabad, developed an innovative, flexible, and citizen-centric solution for the Cyberabad Police Commissionerate - the Permissions Management System (PMS).

The PMS is a comprehensive, configurable digital platform designed to streamline the management of public permissions. It ensures faster approvals, transparency, and adaptability - all while reducing the administrative burden on officials and improving convenience for citizens.

At its heart, the PMS integrates three dynamic tools that enable complete configurability without coding:

- **Dynamic Forms Designer –** To create and manage application forms effortlessly
- **Workflow Designer –** To configure approval processes and automate decision flows

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The PMS developed by NIC Hyderabad for Cyberabad Police, is a no-code digital platform that automates and simplifies public permissions. With dynamic forms, workflows, and document tools, it has cut approval times, improved transparency, and enhanced citizen convenience - emerging as a replicable model for adaptive digital governance.

- **Document Template Designer –** To generate official communications automatically

Together, these tools have transformed how permissions are managed - turning a once time-consuming, paper-driven process into a digital, traceable, and citizen-friendly system.

A Unified Digital Framework for Public Permissions

The Permissions Management System serves as a one-stop digital interface for citizens to apply for, track, and receive approvals for various activities that require police permission.

These include a broad range of cases - from organizing religious processions, public rallies, and marathons to granting film shooting licenses, loudspeaker usage, and establishment permits.

By combining configurability with automation, PMS has replaced manual file movement and physical approvals with digital workflows that are secure, transparent, and efficient.

Dynamic Forms Designer

In traditional setups, introducing a new permission type - or modifying an existing form - involved coordination with software developers, system downtime, and testing delays. The Dynamic Forms Designer built into the PMS eliminates these bottlenecks. It provides a no-code interface that allows administrators to design, edit, and deploy forms instantly.

Key Capabilities

- **Instant Form Creation:** New forms can be built and published in minutes without any coding
- **Field-Level Flexibility:** Administrators can add, remove, or modify fields, rules, and layouts easily
- **Reusable Components:** Frequently used sections, such as Applicant Details or Supporting Documents, can be stored and reused across forms
- **Multilingual Support:** Enables the design of forms in multiple languages for wider accessibility

This capability has been invaluable during high-demand scenarios, such as festivals, when thousands of event permissions must be processed quickly. For example, permissions for Ganesh pandals, religious parades, and community celebrations were efficiently managed using dynamically generated forms - without the need for new development.

Workflow Designer

Permissions often require scrutiny from multiple departments - law and order, traffic management, intelligence, and local administration. A fixed approval structure cannot accommodate such diversity.

The Workflow Designer introduces flexibility and logic-driven automation to handle these complexities. Using formula-based mapping, administrators can configure workflows that automatically adapt to the nature of the application.

Core Features

- **Configurable Approval Levels:** Create multi-tier approval chains that align with specific permission types
- **Role-Based Assignment:** Automatically routes applications to officers based on role, designation, and jurisdiction
- **Conditional Routing:** Intelligent rules manage exceptions - e.g., if an event involves public roads,

it is routed to the Traffic Police for clearance

- **Auto Escalation:** If delays occur, the system sends reminders or escalates the case to higher authorities
- **Real-Time Tracking:** Both citizens and officials can track application progress at every stage

With this flexibility, Cyberabad Police can introduce or modify workflows within hours, enabling them to respond to changing administrative needs or event-specific requirements without rewriting code.

Document Template Designer

Government communication must be precise, uniform, and timely. The Document Template Designer module automates the creation of official letters, notices, proceedings, and approvals, saving significant manual effort.

Much like an enhanced mail merge system, it merges applicant data dynamically into standardized templates.

Functional Highlights

- **Automated Document Generation:** Instantly produces memos, permissions, or notices
- **Uniformity in Format:** Maintains standard design and structure across departments
- **Error Reduction:** Minimizes manual input and potential inaccuracies
- **Reusability:** Templates can be updated and reused across multiple workflows

This module ensures that official communications are consistent, professional, and instantly available once a decision is made.

Key Features

The PMS integrates powerful features that enhance usability, transparency, and control at every level of governance:

- **Online, Anytime Access :** Citizens can submit permission requests online, supported by mobile-friendly interfaces, Aadhaar/PAN integration, payment gateways, and reusable sub-forms
- **Real-Time Notifications :** Automated SMS and email alerts keep applicants and officials informed at every stage of processing
- **Role-Based Access Control :** Ensures that users - from clerical staff to senior officers - only see information relevant to their roles
- **Comprehensive Tracking :** Applicants can monitor status updates, while officers can access remarks, attachments, and notices through a single interface
- **Configurable Workflows :** Allows parallel processing, iterative clarifications, and per-stage configurations like remarks, digital signatures, or payments
- **Document & Feedback Management :** Enables secure document uploads and captures post-event feedback for continuous improvement
- **Advanced Analytics and Reports :** Generates role-wise, time-wise, and form-wise analytics to identify process bottlenecks and improve efficiency
- **Legacy Onboarding :** Supports the digitization and renewal of permissions issued previously through offline systems - ensuring inclusivity in digital transformation

Authentication	Design Application	Design Workflow	Document Designer
Secure Login	Create application form for an event permission	Create workflow for Approval process	Create Output Document Design
CAPTCHA with Audio	Approve	Approve the workflow	Approve document template
	Publish		Publish template

▲ Fig 10.2 System Overview

Permissions Covered

The PMS currently supports more than 20 categories of permissions, including:

- Public and private events
- Film and ad shootings (road and off-road)
- Marathons, rallies, and charity walks
- Blasting permissions and renewals
- Loudspeaker and sound system use
- Establishment licenses and renewals
- Event cancellations, modifications, and post-event feedback

Each category can be configured independently, giving administrators complete control over form design, workflows, and approvals.

Measurable Impact in Cyberabad

Since its rollout, the PMS has brought a measurable transformation in how public applications are processed in Cyberabad:

- **Processing Time Reduced:** Automated workflows have cut average approval time from several days to just a few hours
- **Transparency Enhanced:** Citizens can track applications online, and officials benefit from audit trails and real-time data visibility
- **Convenience for Citizens:** Paperless applications, digital payments, and instant updates save time and eliminate the need for physical visits
- **Administrative Agility:** During major events such as festivals or marathons, new forms and workflows can be deployed instantly
- **Scalability and Adoption:** The system's success led to its adoption by the Hyderabad and Rachakonda Police Commissionerates, demonstrating its scalability and ease of replication

A notable example was during the festival season, when thousands of pandal and event permissions were processed smoothly and on time, proving the system's resilience under peak load.

Conclusion

The Permissions Management System represents more than an administrative upgrade - it marks a shift towards adaptive, intelligent, and citizen-focused governance.

By combining configurability, automation, and transparency, the PMS reduces dependency on developers, minimizes manual errors, and accelerates decision-making.

It is not limited to policing; its modular design makes it replicable across government departments - from municipal corporations to education boards and environmental agencies.

▼ Fig 10.1 : Inauguration of Cyberabad Police Permission Management System by Shri Avinash Mohanty, IPS, Commissioner along with higher officials

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Technology Update

Cyber Security and Privacy in Governance

Integrating Cyber Security and Data Protection under the DPDP Act, 2023

Edited by **MOHAN DAS VISWAM**

When a hospital's digital systems freeze under a ransomware attack or a citizen's Aadhaar-linked data leaks online, the damage extends far beyond lost files — it erodes public trust. Each such incident reminds us that cybersecurity without privacy is incomplete, and privacy without cybersecurity is impossible.

The Digital Personal Data Protection (DPDP) Act, 2023 marks a watershed moment in the nation's digital governance journey. For the first time, citizens have enforceable rights over their personal data, and organizations are bound by clear obligations to protect it. Yet, passing a law is only the beginning. The true challenge lies in translating the Act's intent into daily governance — ensuring that personal data is not only processed lawfully but also shielded from breaches, misuse, and negligence.

This is where Cyber Information Security Governance becomes indispensable. By creating structured accountability across people, processes, and technology, it turns legal compliance into operational discipline. A well-governed cybersecurity framework ensures that data protection is not a reaction to a breach but a culture embedded into every digital system.

In essence, the DPDP Act provides the legal backbone, but cyber governance provides the muscle and memory to make it work. Together, they lay the foundation for a privacy-first, cyber-resilient, and citizen-trust-driven Digital India.

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The Digital Personal Data Protection (DPDP) Act, 2023 establishes citizens' rights over personal data and mandates organizations to ensure its protection. However, true compliance requires Cyber Information Security Governance — a framework that embeds accountability, vigilance, and discipline across systems, people, and processes. By uniting privacy and cybersecurity under one governance model, organizations can move from reactive compliance to proactive trust-building. Sector-specific models, unified oversight, and a culture of accountability are essential to operationalize the Act. Ultimately, cyber governance transforms data protection from a legal requirement into a culture of digital responsibility, resilience, and citizen trust.

Why Cyber Governance Matters After DPDP

The Digital Personal Data Protection (DPDP) Act, 2023 mandates that every organization adopt "reasonable security safeguards" to protect personal data. But in the complex digital ecosystem of government systems, start-ups, and public platforms, what exactly counts as reasonable? Technology alone cannot answer that question. It requires structure, accountability, and foresight — the very essence of Cyber Information Security Governance.

Cyber governance provides the framework that transforms compliance into consistency. It ensures that protecting personal data is not left to individual judgment or afterthought but becomes part of an institution's design. Instead of reacting to threats, governance creates a proactive system of checks and balances that continuously monitors, evaluates, and improves security posture.

At its core, Cyber Governance bridges law and technology through discipline. It aligns cybersecurity controls with DPDP's privacy principles — from data minimization and purpose limitation to breach notification and consent management. The result is an ecosystem where every department, vendor, and digital platform operates under a unified accountability model.

Key dimensions of Cyber Information Security Governance include:

- **Systemic discipline:** Establishing clear policies, defined roles, and documented procedures to replace ad-hoc or reactive security practices.
- **Risk prioritization:** Safeguarding sensitive categories of data first — such as health, financial, or biometric information — through classification and layered protection.
- **Continuous vigilance:** Recognizing that breaches are inevitable but damage is preventable when detection, response, and reporting systems are well-governed.
- **Integrated compliance:** Embedding cyber safeguards directly into DPDP obligations — such as ensuring informed consent, minimizing data collection, and timely breach disclosures.

In short, cyber governance provides the operating system for DPDP compliance. It gives institutions the capacity to act responsibly, respond swiftly, and recover confidently — turning the principle of "reasonable security" into measurable, auditable, and enduring trust.

Real-Life Examples

Laws express intention; governance tests ex-

ecution. Across sectors, several real-world incidents have shown how fragile systems become when cybersecurity and privacy frameworks operate in isolation — and how resilient they are when governance binds them together.

Take the AIIMS ransomware attack in 2022. A sophisticated intrusion crippled the hospital's servers for weeks, threatening the confidentiality of millions of patient records. The absence of patch management, network segmentation, and timely response amplified the crisis. Under the DPDP regime, such an incident would trigger mandatory breach notifications to both the Data Protection Board and affected citizens — a scenario that underscores the urgent need for structured incident governance, offline backups, and defined escalation channels.

Similarly, the CoWIN data exposure (2021–22) revealed the dangers of weak API governance. Personal details like names, contact numbers, and vaccination status were accessible through unauthorized interfaces. The lesson is clear: API security and third-party oversight must become core governance practices, not technical afterthoughts. Under DPDP, unauthorized disclosure of personal data would constitute a breach of fiduciary duty, inviting accountability and redressal claims.

In contrast, DigiLocker stands as a positive example of governance by design. By encrypting stored documents, minimizing data collection, and empowering citizens to control sharing, it has already operationalized several DPDP principles — including purpose limitation, data minimization, and user consent. It proves that privacy-first architecture is achievable when governance leads design, not when it follows regulation.

Global experiences also offer valuable cues. In 2023, Meta was fined €1.2 billion under the GDPR for transferring user data to the United States without adequate safeguards. This case is a stark reminder that cross-border data governance is not a procedural formality — it's a cornerstone of trust. For Indian organizations expanding globally, compliance with DPDP's cross-border transfer provisions will demand similar rigor.

Each of these examples converges on one principle: Cyber Governance turns compliance into culture. Where governance was weak, breaches turned into crises; where governance was strong, trust became the default.

Sector-Specific Governance Models for Cyber & Data Protection

No two sectors face identical risks. A hospital's responsibility toward patient records differs fundamentally from a bank's obligation to secure financial transactions or a telecom operator's duty to protect subscriber identity.

▼ Tab 11.1 **Real-Life Examples**

Case	Governance Lesson	DPDP Relevance / Key Takeaway
AIIMS Ransomware Attack (2022)	Weak patching and delayed response crippled hospital systems.	Mandatory breach reporting to DPB; highlights need network segmentation, offline backups, and incident governance.
CoWIN Data Exposure (2021-22)	Insufficient API governance led to unauthorized data access.	Unauthorized disclosure breaches fiduciary duty; emphasizes strong API security and third-party audits.
DigiLocker Platform	Encryption, minimal data collection, and citizen-controlled sharing ensure privacy by design.	Model example of DPDP principles - consent, purpose limitation, and data minimization in action.
Meta GDPR Fine (2023)	Poor cross-border safeguards in data transfers.	Indian entities must enforce lawful transfer controls under DPDP to avoid similar penalties.

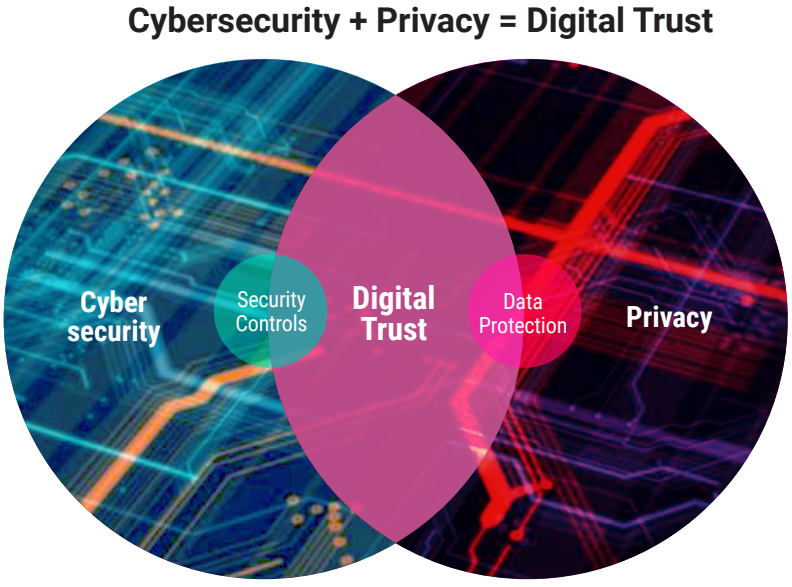
The DPDP Act acknowledges this diversity by demanding context-specific safeguards — a principle that lies at the heart of cyber governance.

In the healthcare sector, ransomware and identity theft remain the biggest threats. Hospitals and telemedicine providers must classify health information as sensitive personal data, encrypt patient records, and conduct regular Privacy Impact Assessments (PIAs). The AIIMS incident showed that without network segmentation and disciplined patching, even critical public institutions can face prolonged disruption.

The financial sector operates under dual regulatory oversight from the RBI and now DPDP. Here, governance translates into adopting Zero Trust Architectures, enforcing multi-factor authentication, and conducting periodic stress tests. The Cosmos Bank cyber heist in 2018 exposed how unmonitored endpoints and weak vendor oversight can compromise even well-regulated entities.

In telecom and digital communications, the focus must shift to data minimization and vendor governance. Telecom operators handle enormous volumes of personal data — from call logs to geolocation trails — making lawful interception policies and cross-border data safeguards indispensable. International cases, like Vodafone UK's GDPR fine, illustrate the risks of weak internal controls and insufficient transparency.

The public sector and e-governance platforms sit at the center of citizen trust. Platforms such as Aadhaar, CoWIN, and DigiLocker demonstrate both the vulnerabilities and strengths of large-



▼ Tab 11.2 **Sector-Specific Governance Models for Cyber & Data Protection**

Sector	Key Risks	Governance Priority	Example / Lesson
Healthcare	Ransomware, identity theft, unauthorized research use	Encrypt health data, restrict access, classify as sensitive, conduct Privacy Impact Assessments	AIIMS ransomware attack - need for segmented networks and timely breach response
Financial Services	Fraud, phishing, insider misuse	Adopt Zero Trust Architecture, enforce multi-factor authentication, align with RBI & DPDP norms	Cosmos Bank heist - endpoint monitoring and strong vendor oversight essential
Telecom & Digital Communications	SIM swap, data misuse, surveillance	Strengthen vendor governance, apply data minimization, ensure lawful interception compliance	Vodafone UK GDPR fine - transparent governance for subscriber data
E-Governance / Public Sector	API leaks, large-scale data exposure	Integrate privacy-by-design, centralize oversight, ensure CERT-In reporting	CoWIN exposure vs. DigiLocker's encryption - contrasting outcomes of governance maturity
Education	Child data exploitation, profiling, identity theft	Secure learning platforms, parental consent for minors, strict EdTech vendor audits	Edmodo breach - need to safeguard DIKSHA and SWAYAM user data
Critical Infrastructure	Ransomware, sabotage, national disruption	Segregate IT/OT networks, adopt NCIIPC frameworks, run red-team drills	Colonial Pipeline attack - highlight for India's smart grid resilience
AI & Emerging Tech Startups	Re-identification, bias, unconsented data use	Implement privacy-preserving AI, ensure consented datasets, maintain audit trails	AI model misuse cases - need for ethical AI governance aligned with DPDP

scale data systems. Integrating privacy-by-design, ensuring CERT-In reporting, and building centralized governance boards are now imperative for all government data systems.

In education, safeguarding student data — particularly of minors — demands parental consent frameworks, secure Learning Management Systems (LMS), and stringent vendor oversight in EdTech collaborations. The Edmodo breach, which exposed millions of student records, highlights why India's DIKSHA and SWAYAM platforms must evolve stronger governance layers.

For critical infrastructure, the risks are existential. Power grids, transport networks, and smart city systems rely on a blend of IT and operational technology (OT). Governance here means strict network segregation, real-time monitoring, and red-team drills aligned with NCIIPC frameworks. The Colonial Pipeline attack in the U.S. serves as a warning: a single breach can disrupt an entire national supply chain.

Finally, AI and emerging technology startups introduce new governance frontiers. Training datasets, behavioral analytics, and generative models raise novel privacy challenges — from re-identification risks to algorithmic bias. DPDP compliance for these entities will hinge on privacy-preserving AI techniques, transparent model governance, and explicit consent for data use in training systems.

Across all sectors, one truth endures: governance must adapt, but accountability remains absolute.

A privacy-aware governance model doesn't just protect systems — it reinforces the social contract between citizens and the institutions that serve them.

Key Governance Areas in the Post-DPDP Era

The Digital Personal Data Protection (DPDP) Act, 2023 is not merely a piece of legislation — it is a transformative milestone that reshapes how organizations in our nation govern, process, and protect personal data. It marks a decisive shift from compliance-based data handling to accountability-driven governance, where protecting citizens' data becomes both a strategic necessity and an ethical obligation.

In this new era, cybersecurity is no longer viewed as a purely technical or IT concern. It has evolved into a board-level priority, requiring active participation from compliance teams, senior management, and business leadership. The Act compels organizations to create structures that blend legal awareness, technological resilience, and organizational culture.

To operationalize this shift, modern governance must focus on six interlinked areas. Together, these form the foundation of a privacy-first and cyber-resilient organization — one that treats data not as a commodity, but as a shared national asset entrusted to its care.

Unified Governance Frameworks

In a world where data flows seamlessly across systems, vendors, and borders, fragmented controls no longer work. Organizations need a single, unified governance framework that integrates privacy and cybersecurity under one model.

Mapping data assets, defining ownership, and aligning policies across departments ensures shared accountability between the CISO and DPO. Unified encryption standards, centralized monitoring, and integrated reporting replace isolated practices, helping organizations move from compliance to true data stewardship.

Breach Response and Reporting

Under the DPDP Act and CERT-In directives,

breaches must be reported swiftly — both to regulators and affected citizens. A strong breach response system requires clear escalation paths, forensic readiness, and transparent communication.

Integrating incident response with privacy obligations helps detect and contain threats while maintaining public trust. In a digital democracy, how fast and how honestly an organization responds to a breach defines its credibility.

Vendor and Third-Party Oversight

Most modern breaches occur through vendors or supply chains. The DPDP Act holds Data Fiduciaries responsible for their partners' lapses, making vendor governance a non-negotiable priority.

Strong oversight includes due diligence before onboarding, embedding compliance clauses in contracts, conducting regular audits, and monitoring vendors continuously. Turning vendors into trust partners rather than risk factors strengthens institutional resilience.

Data Lifecycle Governance

Data protection does not end at collection — it must extend across the entire lifecycle, from creation to deletion. Clear retention schedules, encryption during use, and automated deletion after expiry bring the principle of data minimization to life.

Such lifecycle governance ensures organizations retain only what they need, process only what is lawful, and dispose of data responsibly — converting policy into everyday discipline.

CISO–DPO Collaboration

The post-DPDP era demands close collaboration between cybersecurity and privacy functions. The CISO safeguards how data is protected; the DPO defines why it is collected and for how long.

Joint reviews, shared audits, and coordinated risk assessments help unify security and compliance goals. Together, they build a coherent accountability framework that balances protection with purpose.

Culture of Accountability

Technology can secure systems, but only culture secures organizations. Regular awareness sessions, phishing drills, and password hygiene campaigns turn employees into frontline defenders.

When every team — from vendors to citizen-facing units — treats data as a shared responsibility, governance evolves from compliance to culture.

In essence, these six pillars form the scaffolding of trustworthy digital governance. They remind us that data protection is not a one-time compliance task but a living practice — one that transforms privacy from a legal mandate into a national value, anchoring a resilient and trusted Digital India.

Challenges

Translating the Digital Personal Data Protection (DPDP) Act, 2023 from policy to practice is less about drafting new rules and more about changing how institutions behave. While the law provides direction, implementation faces several operational and cultural hurdles that must be addressed for cyber governance to truly take root.

Defining "Reasonable Safeguards"

The Act's requirement for "reasonable security safeguards" provides flexibility, but also ambiguity. Without concrete benchmarks, interpretations may vary drastically — some organizations may underinvest in protection, while others may overspend on unnecessary controls.

To bring consistency, organizations should anchor their governance in global standards such as ISO 27001 (Information Security), ISO 27701 (Privacy Information Management), or NIST Cybersecurity Framework. When aligned with CERT-In directives, these standards turn "reasonable" into measurable, auditable, and enforceable safeguards.

Balancing Cost and Compliance

For smaller organizations, compliance can feel like an expensive proposition. Implementing encryption systems, conducting audits, or hiring data officers involves real financial and human costs.

A phased compliance model provides a practical pathway — prioritizing high-risk data and critical operations first. The government can play a vital role through shared security infrastructures, compliance toolkits, and capacity-building programs that make privacy protection inclusive and achievable for all organizations, not just the well-resourced ones.

Bridging the Skills Gap

India's data governance ecosystem faces a dual shortage — of cybersecurity experts who understand law, and of lawyers who understand technology. This skills gap hampers consistent compliance maturity across sectors.

To overcome this, NIC, MeitY, and NCIIPC should lead sustained efforts in capacity building, creating specialized training modules for CISOs, DPOs, and government officers. Public-private partnerships with universities and certification bodies can further ensure a steady pipeline of skilled professionals capable of operationalizing the DPDP Act across industries.

Managing Regulatory Overlap

Many sectors already comply with multiple data protection regimes — from the IT Act and CERT-In directives to RBI, IRDAI, and SEBI guidelines. The addition of DPDP risks creating regulatory confusion or "compliance fatigue."

The solution lies in harmonized governance frameworks that treat all these obligations as complementary rather than competing. By mapping overlaps, organizations can streamline reporting, unify audits, and establish a single accountability structure that aligns all regulatory expectations coherently.

Navigating Early Enforcement

DPDP's implementation will evolve as the Data Protection Board issues its first rulings. Until then, compliance expectations may remain fluid.

The best strategy is proactive documentation — recording governance actions, risk assessments, and breach responses — to demonstrate due diligence even amid regulatory uncertainty.

Cyber governance after DPDP is a journey, not a checklist. The challenges are real, but each one offers an opportunity — to set clearer standards, strengthen institutional capacity, and embed accountability deep within digital systems. The law defines the mandate; governance gives it life.

Way Forward

To truly translate the intent of the Digital Personal Data Protection (DPDP) Act, 2023 into public trust, organizations must weave privacy and cybersecurity into their governance DNA. Compliance should not be seen as a checklist but as a mindset guiding every decision. This transformation begins with unified governance—where CIOs, CISOs, and DPOs work together to align technology, policy, and accountability. Regular privacy and security impact assessments, supported by hybrid frameworks like ISO 27001 and 27701, can help manage risks and unify technical and privacy standards. AI-driven monitoring should ensure continuous vigilance, while privacy-by-design principles make protection an integral part of system development. Close collaboration with NIC, CERT-In, and sectoral regulators will further harmonize compliance and strengthen institutional trust.

Ultimately, the post-DPDP era is not about mere legal conformity but about building citizen confidence. Cybersecurity and privacy must evolve from regulatory burdens into a culture of digital responsibility. A truly digital nation is not defined by how many devices it connects, but by the security, dignity, and trust it offers to every connected citizen.

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Cyber Security Challenges of Modern Days

Safeguard oneself by staying informed about state-of-the-art cyber-security challenges

Edited by **MOHAN DAS VISWAM**

Cyber-security landscape is becoming increasingly complex, driven by sophisticated cyber threats, increased regulation, and rapidly evolving technology. Organizations will be challenged with protecting sensitive information of their users while continuing to provide seamless and easy user experiences. Here's a closer look at emerging challenges and threats set to shape this year.

AI-Driven Social Engineering Threats

With the advancement of AI, algorithms based on Natural Language Processing (NLP) and Machine Learning (ML) are being used to automate cyber-attacks by creating highly convincing phishing campaigns and producing DeepFakes for Social Engineering. AI can generate messages that seem more authentic, targeted, and convincing by analyzing social media profiles, online interactions, and leaked data. Threat actors can easily create convincing audio and video DeepFakes that impersonate company executives to deceive employees for transferring funds or disclosing sensitive credentials. AI can automate large-scale social engineering campaigns by generating numerous and unique targeted messages, responses, or scenarios thereby increasing the volume of attacks while reducing the need for manual effort.

Misconfigurations in Digital Infrastructure

Misconfigurations of cloud environments such as missing access controls, unsecured storage locations and inefficient implementation of security policies form the most frequent reasons for data breaches. Improper configurations enable attackers to hijack cloud resources for malicious activities such as crypto currency mining and launching cyber-attacks from compromised cloud accounts by masking their identity. Weak or overly permissive access management policies can allow users or third parties to access critical cloud resources without proper verification, thereby providing a path for attackers to exploit these privileges. Cloud services may expose APIs that are not secured or are given excessive permissions, making it easier for attackers to exploit them and gain unauthorized access to cloud resources.

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Cyber threats are evolving at breakneck speed as adversaries become more sophisticated and the number of connected devices worldwide continues to rise, with remote work and cloud adoption increasing, endpoints and data flows become attractive attack targets. In this article, we explored the latest cyber security trends affecting global organizations and being informed can decrease your risk profile.

Mobile Device Exploits

With increasing reliance on mobile devices, attacks on these platforms are expected to rise substantially in the days to come. This includes exploiting vulnerabilities in mobile operating systems, mobile apps, and mobile-centric technologies, like 5G. Mobile malware has seen significant growth, and this trend is expected to continue as mobile devices are increasingly used for banking, shopping, and accessing sensitive information. Combined with a compromised key, the attackers can downgrade a secure HTTPS connection to an unencrypted HTTP connection in a man-in-the-middle attack, enabling them to steal sensitive information (like passwords and credit card numbers) as it is transmitted over the network. Jailbroken (iOS) or rooted (Android) mobile devices enable attackers to install unauthorized apps or software and thus open-up the device to various attacks.

IoT Device Vulnerabilities

IoT devices are often found to lack robust security, making them easy targets for attackers seeking to hijack devices for botnets or other malicious purposes. IoT devices such as smart cameras and wearables collect personal data. If compromised, these devices can expose sensitive information or be used for surveillance. IoT devices frequently rely on weak encryption or unsecured communication protocols, making them vulnerable to interception and exploitation. Compromised IoT devices are frequently used in large-scale botnet attacks like DDoS attacks that overwhelm networks and servers. Attackers may hijack IoT devices to use their processing power for mining cryptocurrency without the user's knowledge. Devices like smart refrigerators, cameras, and even medical devices with computational power can be exploited to mine crypto, thereby causing system slowdowns, hardware damage, and increased power consumption.

Insider Threats

As businesses become increasingly digital and interconnected, the threat posed by insiders - individuals within the organization who has access to systems and data - remains a significant concern. Employees might inadvertently expose sensitive information by sending eMails to the wrong recipients, misconfiguring cloud settings, or failing to use secure communication methods. Disgruntled employees may deliberately sabotage company systems, steal data, or disrupt operations if they feel mistreated or dissatisfied with their employer. Contractors and vendors,

who are not subject to the same security protocols as permanent employees, can be a weak link. Employees working remotely or using personal devices (BYOD) may inadvertently expose the company network to malicious software or attackers if their devices and access are not secured properly. Remote employees may access systems from insecure networks, making it easier for unauthorized individuals to intercept data or gain access to corporate resources.

Encryption-Less Ransomware Attacks

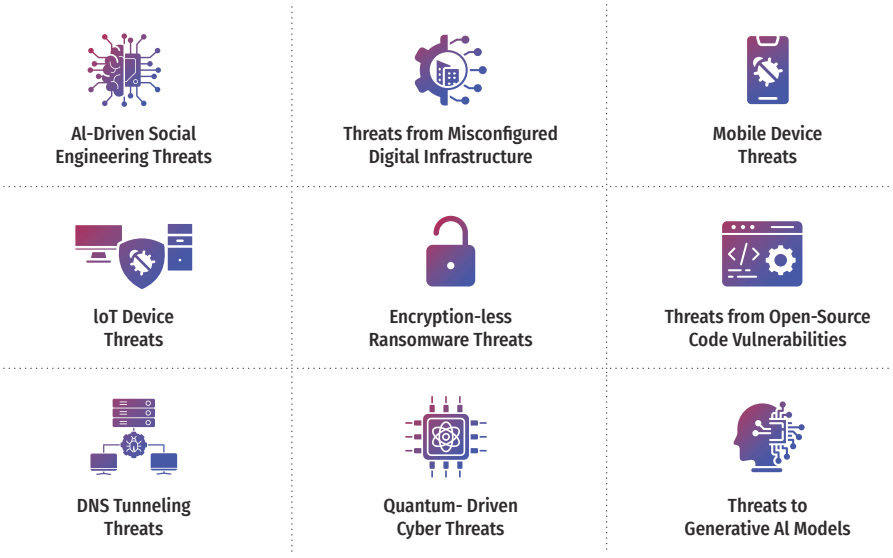
Encryption-Less ransomware attacks represent a new and evolving threat where attackers extort victims without relying on the traditional method of encrypting files. Instead of locking data and demanding a ransom for decryption keys, these attacks typically involve the theft of sensitive information or the disruption of systems in ways that cause less immediate operational disruption. The attackers thus operate undetected for longer periods gathering sensitive information and then threaten to publish it unless a ransom is paid. Even though the data is not encrypted, the consequences can still be severe, as they target critical business assets and compromise privacy. Attackers are becoming increasingly sophisticated in their methods of data exfiltration by deploying tools like Remote Access Trojans (RATs) or file less malware to steal data without triggering traditional detection systems. 'Ransomware-as-a-Service' models which enables even less skilled attackers to launch devastating ransomware campaigns is another security challenge which is on the rise in modern days.

DNS Tunneling Threats

Domain Name Service (DNS) traffic often has the privilege of traveling freely across network perimeters to ensure smooth functioning of the network communication. Threat actors explore this privilege to exploit DNS traffic to achieve their malicious goals. DNS tunneling is one such cyber attack technique where malicious actors abuse the DNS protocol to create a covert communication channel for data exfiltration or command and control. Instead of using DNS for its intended purpose, the attackers embed data or commands within DNS queries and responses. This allows them to bypass network security measures and communicate with compromised systems without raising red flags. DNS Tunneling can be detected by inspecting payloads, monitoring DNS queries for unusual patterns and conducting deep packet inspection to identify signs of data encoding. Other preventive measures include regularly monitoring DNS traffic, implementing DNS Security Extensions, enforcing firewall rules to block DNS traffic to unauthorized servers, and limiting unnecessary DNS queries.

Quantum Driven Threats

As the world advances towards the era of quantum computing, the security landscape is undergoing a significant shift. The arrival of quantum computing technology has the potential to disrupt existing cryptographic systems and render current security measures obsolete. Preparing for quantum-driven threats will become essential as quantum computers evolve and their capabilities materialize, particularly for the cybersecurity community. Quantum computers have the potential to break widely used public-key cryptography algorithms as well as to disrupt symmetric-key cryptography. Modern algorithms allow quantum computers to search unsorted databases (or brute-force encryption keys) faster than classical computers. This would reduce the security of encryption by effectively halving the key length, making systems that use 128-bit keys as vulnerable as 64-bit keys are today



▲ Fig 12.1 **Evolving Cyber Threats**

Open-Source Code Vulnerabilities

Open-source code has become a fundamental building block for modern software development, enabling developers to leverage existing tools, frameworks, and libraries to expedite their projects. It offers numerous benefits such as reducing development time, increasing collaboration, and promoting innovation. However, while open-source software provides these advantages, it also introduces potential risks that organizations and developers must be aware of. Malicious contributors or attackers could introduce backdoors into open-source projects, which could later be exploited to gain unauthorized access to systems or steal sensitive data. These backdoors can be hidden within seemingly benign parts of the code, making them difficult to detect. Open-source projects are often developed and maintained by volunteers or small teams, which may lack comprehensive security testing. Inadvertent License Violations, License Conflicts, Lack of Vendor Support, Lack of Accountability in Vulnerability Disclosure, Abandoned Projects, Poor Documentation, etc.make the issue all the more complex.

Threats to Generative AI Models

As organizations integrate GenAI into their operations, they expand their attack surface. GenAI models process and generate data that could inadvertently contain sensitive information. Inaccurate, biased, or compromised data used in training these models can lead to data leaks or privacy violations. GenAI systems are not immune to adversarial attacks, where attackers manipulate input data in a way that causes the AI model to behave unpredictably or generate malicious outputs. Attackers may attempt to reverse-engineer or steal proprietary GenAI models, gaining access to intellectual property and insights that could be exploited for malicious purposes. This could lead to intellectual property theft or the illicit use of trade secrets.

Conclusion

These predictions for the future period will demand a heightened focus on proactive defense strategies. Organizations must focus on improving baseline cybersecurity posture by increasingly adhering to related regulations. They must prioritize a zero-trust architecture, harness the power of AI-powered security controls, and foster a culture of security awareness among the stake holders to overcome these threats.

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Appscape

Mobile technology has emerged as a primary tool for governments to serve their citizens. It has bypassed the need of traditional physical networks for communications and collaborations. It is also much more affordable and accessible, thus strengthening the nation through better citizen-government interaction. To further nourish this interactivity, NIC has created a repository of more than 730 mobile apps available through both the Android and iOS platforms. This issue of Appscape covers some of the more popular mobile apps launched recently. These apps belong to different sectors such as Administration, Development, Finance, Public Distribution, Health and Education.

Banned SUP eChallanHP

Government of Himachal Pradesh, with support from NIC, has developed the Banned SUP eChallanHP mobile app to enforce the State's complete ban on Single Use Plastics under the H.P. Non-Biodegradable Garbage (Control) Act, 1995.

The app empowers designated officers to book challans against offenders digitally. It also facilitates violators to instantly pay the compounding fee by scanning a QR code shown on the spot, making the process transparent, efficient, and paperless.

Himachal Pradesh's ban covers a wide range of SUP items, including carry bags, disposable plastic, non-woven carry bags below 80 GSM, and other prohibited products.

The app not only streamlines enforcement but also serves as a monitoring tool, enabling authorities to track violations, assess trends, and strengthen policy implementation. For citizens, it provides a simple way to pay fines and access notifications on banned items via the Department's website.

By digitizing challan issuance and payments, Banned SUP eChallanHP promotes accountability and strengthens Himachal Pradesh's commitment to a plastic-free environment.

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NMMS App

Launched in 2021, the National Mobile Monitoring Service (NMMS) is a transformative mobile application aimed at enhancing transparency and accountability in the implementation of MGNREGA Act.

Designed with a focus on real-time monitoring, the NMMS App enables supervisors to record the attendance of workers directly at MGNREGA worksites. Attendance is captured through geotagged, time-stamped photographs, which ensure that worker presence is accurately documented, minimizing the scope for proxy attendance or manipulation of records. This strengthens the authenticity of worksite data and guarantees that reported participation reflects reality on the ground.

For administrators, the app significantly streamlines wage disbursal and project monitoring by providing reliable, instantly available data. For citizens, it improves confidence in the programme by ensuring their wages are based on verified attendance and transparent processes.

By digitizing attendance and linking it with geospatial and temporal data, NMMS advances citizen oversight, fosters trust, and supports accountability at the grassroots level. The app represents a major step forward in using mobile governance tools to make welfare programmes more efficient, transparent, and citizen-centric.

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AadhaarBAS

The Aadhaar Enabled Biometric Attendance System (AEBAS) was launched by the Government of India in 2014 as part of the Digital India initiative, to promote transparency and punctuality in government offices. The AadhaarBAS mobile application, developed by the National Informatics Centre (NIC), enables registered government employees to seamlessly mark their daily attendance.

The app is exclusively for government officers and employees enrolled on the central attendance portal and is not available for the general public. Initially, attendance was captured through fingerprint or iris authentication devices, matched in real time with UIDAI's Central Identities Data Repository (CIDR). To meet evolving requirements, the AEBAS team has integrated Face Authentication using UIDAI's Aadhaar Face RD service, offering employees a faster, touch-free, and highly secure mode of marking attendance.

In practice, an employee simply enters their attendance ID and verifies identity through biometric or face authentication. The system responds in 2–3 seconds, recording both check-in and check-out seamlessly. This innovation has enhanced user convenience while maintaining robust security.

The AadhaarBAS app is a secure, India-only platform that exemplifies how Aadhaar authentication can support efficient governance, transparency, and accountability in public service.

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ULLAS

The ULLAS (Understanding Lifelong Learning for All in Society) app has been developed as part of the Government of India's efforts to expand access to literacy and lifelong learning under the New India Literacy Programme. Designed as a comprehensive digital platform, the app enables smooth coordination between learners, volunteer teachers, and surveyors to promote inclusive education.

Identified surveyors are registered on the ULLAS portal and gain access to the app, which serves as their gateway to enroll learners and volunteer teachers. Each learner is tagged with a nearby volunteer teacher, ensuring personal guidance throughout the teaching-learning process. The app also maintains accurate, real-time records, enabling transparency and efficient monitoring of progress.

Learners benefit from access to a rich repository of teaching-learning resources, helping them build foundational literacy, numeracy, and life skills. The app also provides a pathway for certification: learners can register for assessment tests directly through the app and obtain certification upon successful completion.

Authorized officials can conduct periodic inspections through the app, ensuring smooth implementation and accountability. By bridging volunteers, learners, and administrators on a single platform, the ULLAS app fosters a culture of digital, inclusive, and lifelong education.

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Khanan Soft

Government of Bihar, with support from NIC, has developed Khanan Soft, a comprehensive mobile app designed to enhance efficiency, transparency, and accountability in the administration of mineral resources such as sand and stone. The app brings end-to-end automation to mineral production, transportation, and monitoring processes, curbing illegal mining activities while ensuring compliance with state regulations.

Through challan verification, officers can confirm the authenticity of mining permits by entering challan numbers or scanning QR codes. The app supports on-site inspections at Balu Ghats to detect illegal mining and allows officers to capture real-time inspection data. Vehicle inspections help verify registration, check challan validity, and monitor overloading, ensuring legal and safe mineral transport.

The app also provides a comprehensive inspection history with date-wise filters for record-keeping, and challan statistics displayed in graphical format to give insights into daily mining and transport activity. Officials can view the status of active and blocked ghats, supporting better resource planning.

By digitizing resource management, Khanan Soft strengthens Bihar's efforts to create a transparent, accountable, and regulated mining ecosystem.

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Anna Mitra

The Department of Food and Public Distribution, Govt of India, along with NIC has developed Anna Mitra, a mobile app that enables PDS officials and stakeholders to access PDS information anywhere, anytime. Designed exclusively for FPS Dealers, DFSO, and Food Inspectors, the app serves as a unified digital platform to streamline monitoring, reporting, and governance of ration distribution.

For FPS Dealers, the app provides real-time access to monthly stock receipts, sales reports, FPS ratings, and important government notifications. This ensures that shopkeepers remain updated and accountable in managing ration stocks. DFSO Officers can view FPS performance data, monitor stock availability, and track grievance redressal updates to oversee district-level operations more effectively. Meanwhile, Food Inspectors gain access to inspection histories, sale and closing stock figures, and FPS feedback, empowering them to conduct accurate field-level assessments.

By integrating these functions, Anna Mitra enhances transparency, accountability, and efficiency in India's PDS ecosystem. It ensures that critical ration-related information is available instantly to officials, enabling better oversight.

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Nextgen ORS

NextGen ORS is a citizen-centric digital platform developed to make healthcare services in government hospitals simpler, faster, and more accessible. Designed with user-friendliness at its core, the application allows patients to seamlessly register, book, and manage appointments at hospitals across India without the need for long queues or complex procedures.

Integrated with national health systems, NextGen ORS supports OPD registrations as well as teleconsultations, enabling patients to consult doctors remotely. Through the app, patients can view real-time appointment status, receive updates, and even reschedule or cancel appointments as per their convenience.

The platform reduces paperwork by linking with patient Aadhaar details, ensuring smoother verification and faster access to services. It also streamlines hospital administration by optimizing scheduling, reducing overcrowding at counters, and improving overall efficiency in patient management.

By bridging patients with hospitals digitally, NextGen ORS enhances transparency, convenience, and inclusivity in public healthcare delivery.

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India Highlights Inclusive Approach to AI Governance at UN Headquarters

At the launch of the Global Dialogue on Artificial Intelligence (AI) Governance at the United Nations Headquarters in New York on 27th September, 2025, the Secretary of India's Ministry of Electronics and Information Technology (MeitY) underscored the importance of building a collaborative and inclusive global framework for AI. Addressing the high-level multi-stakeholder meeting chaired by the President of the UN General Assembly, the Secretary called for stronger international cooperation and meaningful participation from the Global South and underrepresented communities to ensure that the benefits of AI reach all sections of society. He emphasized that AI should be developed in a manner that reflects shared human values and promotes global trust, rather than deepening existing divides.

He outlined India's comprehensive approach to AI governance, which is anchored in seven guiding principles: trust, people first, innovation over restraint, fairness and equity, accountability, understandable by design, and safety, resilience, and sustainability. Stressing that the global dialogue must also bridge disparities in AI knowledge, skills, resources, and technology capabilities, he urged nations to work together to create equitable pathways for AI adoption. He further noted that capacity building, multilingual datasets, and responsible innovation ecosystems would be essential for countries at different stages of digital maturity.

The Secretary also announced that India will host the India AI Impact Summit in February 2026, which will bring global stakeholders together to

explore AI-driven solutions for sustainable development. The recognition of India's principled and inclusive approach to AI governance at the UN highlights the country's emerging leadership in shaping the digital future, and reaffirms its commitment to ensuring that transformative technologies contribute to global peace, prosperity, and human progress.

Source- pib.gov.in

10 Indian AI Startups Selected for Global Accelerator in Paris

In a major boost to India's global AI footprint, the IndiaAI Mission under the Ministry of Electronics and Information Technology (MeitY) has selected 10 innovative Indian AI startups for the IndiaAI Startups Global (ISG) Initiative — a prestigious accelerator programme in collaboration with Station F and HEC Paris.

The four-month programme — comprising a one-month online module and a three-month residency in Paris — will help Indian startups access global markets, mentorship, and cross-border collaboration opportunities.

Union Minister Shri Ashwini Vaishnaw said, "India's AI ecosystem is on the cusp of a global breakthrough. This partnership marks a new chapter in India's innovation diplomacy."

MeitY Additional Secretary and CEO, IndiaAI Mission, Shri Abhishek Singh, added that the initiative "bridges India's AI talent with global innovation hubs."

The selected startups represent India's diverse AI innovation landscape. They include PrivaSapien Technologies, which builds privacy-first responsible AI solutions; CoRover.ai, a conversational Gen AI platform; Staqu Technologies (Jarvis), specializing in AI-based audio-video analytics; SatSure Analytics, leveraging satellite imagery for Earth observation and decision intelligence; Storyvord, an AI coproducer for automated video content; VolarAlta, using drone-based AI for industrial inspections; Smartail, creating adaptive EdTech experiences; Secure Blink, offering AI-driven cybersecurity solutions; NeuroPixel.AI, enabling ultra-fast image editing for e-commerce; and Voicing AI, powering enterprise-grade intelligent voice agents.

Launched in March 2024, the IndiaAI Mission aims to strengthen India's AI ecosystem through seven key pillars — Compute, Innovation, Dataset, Application Development, FutureSkills, Startup Financing, and Safe & Trusted AI — fostering responsible and inclusive AI growth.

Station F, the world's largest startup campus in Paris, and HEC Paris, one of Europe's most prestigious business schools, will host the accelerator programme. Together, they will provide Indian startups with access to global investors, mentorship, and Europe's thriving innovation network. This collaboration not only helps Indian innovators explore new markets but also strengthens India's position as a global hub for ethical, inclusive, and high-impact AI development.

Source- https://www.hec.edu

India and Mauritius Discuss Strengthening Digital Cooperation

Dr. Avinash Ramtohul, Hon'ble Minister of IT, Communications and Innovation of Mauritius, met with senior officials of India's Ministry of Electronics and Information Technology (MeitY) on September 13, 2025, to explore deeper collaboration in the fields of ICT and digital governance. During his visit, Dr. Ramtohul held detailed discussions with Shri Abhishek Singh, Additional Secretary, MeitY & Director General, National Informatics Centre (NIC), and Shri I.P.S. Sethi, Deputy Director General, NIC, at the NIC Headquarters in New Delhi.

The meeting underscored the growing partnership between India and Mauritius in leveraging digital technologies for public service delivery. Both sides reviewed the progress of ongoing collaborations and identified new areas where cooperation could be expanded.

The talks covered a wide spectrum of emerging digital technologies, with particular emphasis on:

- Next-generation digital platforms for public services
- e-Governance frameworks and citizen-centric service models
- Capacity-building programs for digital skilling and governance
- Strengthening cybersecurity architecture and resilience

Indian officials shared insights from the country's flagship digital public infrastructure initiatives, including Digital India, Aadhaar, DigiLocker, Unified Mobile Application for New-age Governance (UMANG), and various AI-driven governance tools. The Mauritian delegation expressed strong interest in adapting and customizing these solutions to accelerate their Digital Mauritius Vision, aimed at building an inclusive and innovation-driven digital ecosystem.

Both nations reaffirmed their commitment to enhancing bilateral cooperation through technology-driven initiatives. They emphasized the importance of co-developing solutions that address challenges such as digital identity, secure data exchange, digital payments, and AI-enabled governance.

Source- pib.gov.in

United States Eyes Synthetic Data to Unlock Insights While Protecting Privacy

As governments ook for new ways to use data without compromising citizen privacy, synthetic data is emerging as a promising solution. The digitally generated datasets imitate the structure and patterns of real information but contain no actual personal records, allowing agencies to analyze trends and test systems with reduced risk.

In an era where cyberthreats and data breaches are becoming increasingly frequent, the appeal of such privacy-preserving tools is growing rapidly among public institutions.

Utah is positioning itself as an early adopter. The state's chief privacy officials describe synthetic data as an impending "new frontier," noting growing interest across agencies seeking to balance innovation with privacy safeguards. Utah has already taken the unusual step of defining synthetic data in state law, signaling a proactive approach as artificial-data tools evolve and as the state prepares for broader digital modernization efforts.

The appeal is clear: synthetic data could help public-sector teams share information more easily, build better predictive models, and experiment with emerging technologies without exposing sensitive details. It may be particularly useful in fields like transportation planning, health services, and benefits administration, where access to real data is tightly controlled and often slowed by complex approval processes.

Still, challenges remain. Synthetic data must preserve the statistical value of real information without leaking it. If poorly designed, it can introduce bias or fail to reflect real-world behavior accurately. Managing this balance will be key to meaningful adoption, and experts caution that rigorous validation and transparency standards will be essential as the technology matures.

For now, Utah is in the early stages. Policymakers and technologists are exploring pilot programs and governance frameworks to guide future use. Their progress could shape how other states approach synthetic data—potentially determining whether it becomes a standard tool in modern government or remains an experimental trend.

Source- govtech.com

Advancing Digital Inclusivity

NIC's Workshops on Web Accessibility

Edited by **ARCHANA SHARMA**

Accessibility is not a feature—it is the doorway to dignity. It is the quiet assurance that every citizen, no matter their ability, can step into the digital corridors of governance and find themselves included. In the age of Digital India, accessibility is not just an obligation of the State but an opportunity to weave trust, empathy, and equality into the fabric of governance.

The National Informatics Centre (NIC), through its Media Informatics Division, has carried this vision forward with quiet persistence. A landmark moment came when the NIC official website became fully accessible—a milestone made possible through the tireless efforts of the Media Informatics Division, the technical mastery of the Web Technology Division, and the steadfast support of HoGs, SIOs, HoDs, and officers across the organisation. It was not just a technological upgrade, but a statement: inclusivity shall be the cornerstone of our digital journey.

Carrying this momentum ahead, the Media Informatics Division convened two Workshops on Web Accessibility—on 20th August 2025 and 25th September 2025. These gatherings were not mere training sessions; they were conversations about responsibility, about building capacity, about aligning India's digital governance with the highest standards of inclusivity—WCAG 2.1 Level AA and GIGW 3.0.

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Opening Remarks and Keynote Insights

The workshops opened with the steady voice of Shri Virander Kumar Tyagi, Head of Division, Media Informatics Division, who reminded participants that accessibility is not a matter of compliance alone—it is a responsibility shared by all who build and maintain digital platforms for citizens.

Framing the dialogue, Ms. Tuhina Kumar, Director (IT), urged participants to place accessibility at the very heart of design, not as an afterthought but as a principle guiding every choice. Her words gave shape to the conviction that true governance must begin with inclusion.

The keynote was delivered by Shri Prashant Kumar Mittal, Deputy Director General and Head of Group, Media Informatics Division. He spoke of NIC's strategic role in shaping digital spaces that are not only robust and efficient but also compassionate and citizen-friendly. He called upon officers to embrace "design-for-all" principles, embedding inclusivity into every line of code, every page, every service. Accessibility, he said, is inseparable from transparency, inclusiveness, and sustainability—values that sustain the spirit of governance itself.

Technical Presentations and Practical Insights

The heart of the workshops was a detailed presentation by a Web Accessibility Auditing Organization, empanelled with the Department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment.

The sessions unfolded like a guidebook for practitioners:

- Common barriers that exclude citizens, and practical ways to remove them
- International best practices in accessibility, rooted in empathy as much as design
- Demonstrations of tools — automated and manual - that measure inclusion in tangible ways
- Strategies to create accessible PDFs and align websites with global benchmarks
- Practical methods to integrate accessibility seamlessly, without compromising on aesthetics

The demonstrations turned knowledge into experience, allowing participants to see accessibility not as theory but as a working reality.

Interactive Discussions and Key Takeaways

True learning came alive in the questions. Participants asked about legacy content, about workflows that resist change, about ensuring accessibility across the wide, diverse canvas of NIC's platforms. Each query was met with clear,

practical answers that carried both technical depth and simplicity.

From these conversations emerged key lessons:

- Accessibility must be woven into the beginning of every digital initiative.
- Audits must be regular, not occasional, if compliance is to be sustained.
- Testing must be both automated and human-driven, for empathy cannot be outsourced to software alone.
- Most importantly, capacity must be built within—developers, designers, and administrators must carry accessibility as a self-driven practice.

Shared Commitment to a Viksit Bharat

The workshops ended not with closure but with resolve. Officers from across States and Ministries, whether present in person or connected through video, left with a shared vision: to make accessibility a core principle of digital governance in India.

The clarity of the sessions, the practical relevance of the insights, and the forward-looking energy they carried were widely appreciated. More than that, they reaffirmed NIC's role as a leader—an organisation not only building technology but shaping the ethics of digital inclusion.

Through such initiatives, the Media Informatics Division has reiterated its commitment: to continue this journey, to strengthen accessibility at every level, and to ensure that Digital India is not only advanced but also inclusive, citizen-centric, and future-ready.

In that vision lies the promise of a Viksit Bharat—a nation where digital governance is not just about efficiency, but about belonging.

USPN Mobile App Launched in Upper Subansiri

Deputy Commissioner Shri Taso Gambo on Thursday launched the USPN Android Mobile App, aimed at improving public access to official information. The event was attended by district Heads of Departments and District Informatics Officer-in-Charge Shri Dinesh Kumar Rajak.

The app enables citizens to easily view and download district notices—such as landslide alerts, festival updates, route maps, advertisements, and general announcements—directly on their smartphones. Officials can upload authenticated PDF documents, including public notices and contact lists, helping ensure transparency and timely communication.

DC Gambo said the initiative will benefit citizens by allowing them to access important information from anywhere. DIO Rajak briefed attendees on the app's technical setup.

The launch marks a step forward in strengthening digital governance in Upper Subansiri.

- Dinesh Kumar Rajak, Arunachal Pradesh

Hon'ble Chief Justice of Patna High Court Launches the CCMS Mobile Application

Hon'ble Chief Justice of Patna High Court launched the CCMS Mobile Application

In a step towards streamlining legal workflows across government departments, the Hon'ble Chief Justice of the Patna High Court launched the Court Case Management System (CCMS) Mobile Application. The initiative aims to strengthen the management of court cases, ensure timely compliance, and promote faster disposal of disputes for the benefit of litigants.

The CCMS mobile application provides a seamless digital interface that enables stakeholders to track the progress of cases in real time, monitor compliance, and coordinate more effectively across departments. By empowering officials to take timely and informed actions, the platform is expected to reduce pendency, enhance accountability, and promote stronger legal compliance in governance.

The launch of the CCMS application underscores the judiciary's and government's shared commitment to leveraging technology for efficiency, transparency, and citizen-centric justice delivery.

- Syed Mumtaz Husain, Bihar

Kerala Launches Kiosk for Online Distribution of Survey Records under Ente Bhoomi Programme

As part of the Ente Bhoomi Digital Survey Programme of the Directorate of Survey and Land Records, Government of Kerala, a state-of-the-art kiosk for the online distribution of survey records was inaugurated by the Hon'ble Revenue Minister of Kerala.

The kiosk offers a user-friendly digital interface through which citizens can conveniently purchase digitally surveyed maps and land records. Integrated with the Ente Bhoomi Portal, developed by the National Informatics Centre (NIC), the facility enables citizens to make secure online payments and directly download maps and records, ensuring faster, transparent, and hassle-free access to land-related services.

The initiative forms part of Kerala's broader "Myn Bhoomi" programme, aimed at modernising land survey and record-keeping through technology. By digitising and streamlining the process, the system reduces dependency on manual records, increases transparency, and empowers citizens with anytime, anywhere access to critical land information.

This development marks another milestone in the state's journey towards #DigitalKerala, showcasing how ICT-driven governance can transform citizen services and improve public access to essential records.

- Susy M., Kerala

Hon'ble Revenue Minister of Kerala inaugurated a state-of-the-art kiosk for the online distribution of survey records

NIC Manipur Conducts Training on New EPMS Application for COHSEM

The Examination Processing and Management System (EPMS), a newly designed web-based application developed by the National Informatics Centre (NIC) Manipur, was introduced through a one-day training programme organised for the Council of Higher Secondary Education, Manipur (COHSEM).

The EPMS has been built on a microservices architecture using open-source technologies, ensuring scalability, flexibility, and robustness. It is designed to streamline examination processes and significantly enhance management efficiency, covering the end-to-end cycle of examination-related tasks.

The training programme aimed to familiarize COHSEM officials with the features, functionalities, and operational aspects of the new system. Through hands-on sessions, participants were guided on how EPMS can be leveraged to improve examination data handling, reduce manual interventions, and deliver faster, more transparent results.

The initiative underscores NIC Manipur's commitment to developing innovative, citizen-centric digital solutions that strengthen governance and modernize core administrative functions. With EPMS, COHSEM is set to benefit from improved accuracy, efficiency, and transparency in examination management, marking a significant step towards digital transformation in the education sector of Manipur.

NIC Manipur conducted a one-day training program on the Examination Processing and Management System (EPMS)

– Nirish Wahengbam, Manipur

Regional Workshop on NGO DARPAN Portal Held in Dehradun to Strengthen Transparency and Accountability

The third Regional Workshop on the NGO DARPAN Portal was organized in Dehradun, Uttarakhand

The third Regional Workshop on the NGO DARPAN Portal was organized in Dehradun, Uttarakhand, with the objective of sensitizing state authorities and providing hands-on training on the use of the Portal's Data Analytics Dashboard for the effective release of grants to NGOs.

The workshop witnessed participation from senior officials of the Government of Uttarakhand, NITI Aayog, the Public Financial Management System (PFMS), Nodal Officers, and State Informatics Officers (SIOs) from respective states. Through interactive sessions and demonstrations, participants were trained in navigating the portal's features, analyzing data, and leveraging digital tools to improve decision-making in grant allocation.

The NGO DARPAN Portal, managed by NITI Aayog with technical support from NIC, serves as a digital bridge between the government and voluntary organizations. It ensures that NGO-related data is accurate, accessible, and verifiable, thereby promoting transparency, efficiency, and accountability in governance processes.

By empowering state authorities with digital tools and real-time analytics, the workshop reinforced the government's commitment to ensuring that grants to NGOs are released in a timely, transparent, and accountable manner, strengthening trust between civil society and governance institutions.

- Chanchal Goyal, Uttarakhand

Coal India Chairman Inaugurates COALRR Portal to Digitize Land Records and Strengthen Rehabilitation Efforts

Chairman, Coal India Limited inaugurated the COALRR Portal, developed by NIC

The Chairman of Coal India Limited inaugurated the COALRR (Consolidation of Accountable Land, Rehabilitation & Resettlement) Portal, developed by the National Informatics Centre (NIC), marking a pioneering step in digitizing land records and streamlining rehabilitation processes for coal mining operations.

The COALRR Portal, accessible at https://eclcoalrr.in, integrates GIS-based mapping to enable effective monitoring, faster approvals, and transparent management of land-related data. It serves as a unified digital platform to track land acquisition, rehabilitation, and resettlement, while ensuring that Project Affected Families (PAFs) and their nominees can easily access and claim their entitled benefits.

By bringing transparency, accessibility, and accountability into the system, the portal simplifies processes for landowners, displaced families, and coal sector stakeholders. It not only enhances operational efficiency but also ensures that welfare measures for PAFs are implemented in a timely and just manner.

The launch of COALRR reflects Coal India's and NIC's commitment to leveraging digital innovation for sustainable development, ensuring that economic growth through coal mining is balanced with social responsibility and citizen empowerment.

- Archana Sharma, Delhi

NIC Telangana Hosts DIO/DIA's Meet 2025 in Hyderabad to Strengthen Digital Governance

Shri VTV Ramana (State Coordinator), Shri Ashish Vikram Asthana (Data Centre Non-IT Infra HOG), Shri Guntuku Prasad (SIO) and Shri Radha Krishna (ASIO State) delivered the keynote addresses at the DIO Meet

NIC Telangana successfully organized the DIO/DIA's Meet – 2025, on 15th September 2025, to bring together District Informatics Officers (DIOs) and District Informatics Associates (DIAs) on a common platform to connect, collaborate, and innovate.

The meet served as a dynamic forum for interactive sessions and knowledge exchange, with discussions centered on digital infrastructure, informatics, and service delivery. Participants shared best practices, explored emerging technologies, and deliberated on strategies to strengthen district-level e-Governance initiatives.

By focusing on capacity-building and collaborative problem-solving, the event reinforced NIC's pivotal role in empowering district centres and shaping a robust digital governance framework for Telangana. The sessions highlighted how effective digital interventions at the grassroots level can enhance transparency, efficiency, and citizen service delivery across the state.

The DIO/DIA's Meet 2025 not only provided an opportunity to align district-level priorities with state and national digital transformation goals but also underlined the spirit of innovation-driven governance that continues to guide NIC's mission.

- Raynil John, Telangana

Hon'ble Governor of Andhra Pradesh Launches New Website of State Information Commission

The Hon'ble Governor of Andhra Pradesh inaugurated the new website of the Andhra Pradesh Information Commission, developed by the National Informatics Centre (NIC), accessible at https://sic.ap.gov.in on 8th September 2025.

The revamped portal introduces live streaming of hearings of the Andhra Pradesh Information Commission, a significant step to enhance transparency, accountability, and public trust in governance. In addition, the website supports proactive disclosure of information, improving accessibility and empowering citizens to exercise their Right to Information (RTI) more effectively.

With a modern, user-friendly interface, the portal integrates essential services to ensure greater public access, efficient grievance redressal, and improved citizen engagement. The launch reflects Andhra Pradesh's continued commitment to leveraging digital platforms for open governance and underscores NIC's role in strengthening e-Governance initiatives across the state.

- Vinay Sowpati, Andhra Pradesh

The new website of the Andhra Pradesh Information Commission, developed by NIC, is now live at https://sic.ap.gov.in

Tech-Boot Camp on "Empowering Governance through Artificial intelligence" Inaugurated in Bhubaneswar

A Tech-Boot Camp on "Empowering Governance through AI Inaugurated by " Smt. Anu Garg, IAS, Development Commissioner & Additional Chief Secretary, Planning & Convergence and Water Resources Departments, Government of Odisha

Smt. Anu Garg, IAS, Development Commissioner & Additional Chief Secretary, Planning & Convergence and Water Resources Departments, Government of Odisha, inaugurated a Tech-Boot Camp on "Empowering Governance through AI" in the presence of senior officials from the National Informatics Centre (NIC) on 8th September 2025.

The event marked a significant step in leveraging artificial intelligence for governance. On the occasion, a brochure highlighting AI-driven projects developed by NIC was released, showcasing innovative applications of AI in public service delivery, data-driven decision-making, and citizen engagement.

As part of the programme, the newly renovated NIC Training Centre in Bhubaneswar was also inaugurated, creating a state-of-the-art facility to support continuous learning and digital capacity-building. In addition, a special AI workshop was conducted for over 100 senior officials from Central and State Governments, aimed at sensitizing policymakers and administrators on the potential of AI to improve transparency, efficiency, and service delivery in governance.

The Tech-Boot Camp reflects NIC's commitment to driving next-generation digital transformation in Odisha and across India, ensuring that emerging technologies like AI are harnessed for inclusive and citizen-centric governance.

- Jayanta Kumar Mishra, Odisha

Ksheerasree Honoured with Kerala State e-Governance Award

The Ksheerasree application, developed by the NIC Kerala, has been awarded the Second Prize in the e-Citizen Service Delivery category at the Kerala State e-Governance Awards (2021-22 & 2022-23).

The award was conferred by the Hon'ble Chief Minister of Kerala, Shri Pinarayi Vijayan, at the valedictory ceremony held in Thiruvananthapuram. The recognition underscores the state's commitment to strengthening Digital Kerala by adopting citizen-centric digital solutions that transform traditional sectors through technology.

The Ksheerasree platform is a comprehensive digital ecosystem designed to modernise the dairy sector in Kerala. It facilitates end-to-end management of processes such as milk procurement, transparent payment disbursal, cooperative operations, supply chain management, and real-time monitoring. By digitising services for farmers and stakeholders, the platform ensures efficiency, accountability, and accessibility, directly benefiting thousands of dairy farmers across the state. The recognition of Ksheerasree as a model of digital service delivery reinforces Kerala's pioneering position in citizen-first governance through technology.

Meri Panchayat App Wins WSIS Prizes 2025 Champion Award

The Meri Panchayat mobile app, developed by the Ministry of Panchayati Raj and NIC, has won the WSIS Prizes 2025 Champion Award under the Cultural & Linguistic Diversity and Local Content category at the WSIS+20 High-Level Event in Geneva. The award was formally presented in New Delhi to Hon'ble Union Minister of Panchayati Raj, Shri Rajiv Ranjan Singh, while Smt. Sunita Jain, Sr. Technical Director (NIC), received it on India's behalf in Geneva.

Built to strengthen grassroots digital governance, the app empowers citizens across 2.65 lakh gram panchayats by offering multilingual access to budgets, development plans, project tracking, infrastructure details, grievance redressal, and weather updates. With features to propose projects, review works, and access Gram Sabha decisions, it fosters transparency. The platform also encourages community engagement and helps bridge information gaps through digital services.

This recognition highlights India's leadership in inclusive, citizen-centric digital transformation, reaffirming its commitment to ensuring that rural voices are heard in governance.

NIC's ServicePlus and UDISE+ Platforms Recognised at Aadhaar Samvaad 2025

Two flagship digital governance platforms developed by the National Informatics Centre – ServicePlus and UDISE+ (Unified District Information System for Education Plus) – received national recognition in the Technical Category at the Aadhaar Samvaad 2025, organised by the Unique Identification Authority of India (UIDAI) in Hyderabad.

The ServicePlus framework was honoured for its outstanding contribution to enhancing efficiency and accessibility of government services through a unified, citizen-centric delivery model. The platform has enabled departments across states and union territories to provide seamless, transparent, and digital-first services to citizens, thereby strengthening the foundation of e-Governance in India.

The UDISE+ platform, developed for comprehensive school education data management, was awarded the Abhigyan Certificate of Recognition for its pivotal role in enabling Aadhaar-based mandatory biometric updates of

students. By ensuring integrity and reliability of education records, UDISE+ provides real-time, accurate insights to policymakers and administrators, supporting informed decision-making in the education sector.

The dual recognition at Aadhaar Samvaad 2025 underscores NIC's leadership in building scalable, innovative, and citizen-oriented digital solutions that advance national priorities in education, governance, and identity management. Together, ServicePlus and UDISE+ reflect the transformative role of technology in strengthening public service delivery and ensuring transparent, accountable governance.