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Minimum Government - Maximum Governance

e-Governance Initiatives

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CONTENTS

Sl. No.	e-Governance Initiatives	Page Number
Central Level Initiatives		
1.	Gati Shakti Sanchar Portal Single Interface for Online Processing of Right of Way Applications, Department of Telecommunication	01
2.	Swachh Survekshan Framework – A Shot in the Arm for Urban Governance, Ministry of Housing and Urban Affairs	05
	State/ District Level Initiatives	
3.	Khedut Shakti – Leveraging Technology to Promote Sustainable Agricultural Practices, Government of Gujarat	24
4.	Online Tourist Inner Line Permit System – Easy Access for Tourist Permit, Government of Arunachal Pradesh	34
5.	Suvidha System- Boosting Export by Cutting Down Transportation Cost, Government of West Bengal	40
6.	Jhar-Jal - Transformative Impact in Service Delivery and Community Development, Government of Jharkhand	50
7.	Jan Sahayata Koshang - Bringing People Closer to Administration, Government of Jharkhand	67
8.	MOR Raipur: Harnessing Digital Technologies to Enhance Public Service Delivery, District Administration Raipur, Chhattisgarh	72
	Institution/ Start-up Level Initiatives	
9.	Evolution and Impact of the 'Lucky Bill' App in Consumer Engagement and Fiscal Accountability, Kerala University	81

10.	Sampurna Shiksha Kavach: Tech- driven Learning Acceleration Programme, Filo Edtech Pvt. Ltd.	89
11.	Transforming Governance - Establishing Hyper-Local Air Quality Monitoring Network, Aurassure Private Limited	104
12.	Shielding Cooperative Banking Industry from Cyber Threats, Sequretech IT Solutions Pvt. Ltd.	115

GatiShakti Sanchar Portal – Single Interface for Online Processing of Right of Way Applications

Background

For laying more optical Fiber Cable (OFC) and to erect more towers by Telecom Service Providers / Infrastructure Providers and Internet Service Providers (TSP/IP/ISPs) getting Right of Way (RoW) permissions from concerned authorities in the States/UTs was biggest bottleneck and there used to be inordinate delay. Many States/UTs did not have online portal and RoW applications were dealt in physical mode with cheque/DD payments, causing delays and hampering roll-out of telecom infrastructure. This mode also lacked effective monitoring system causing trouble to authorities as well as applicants. Besides this, 26 States had different portals where in an applicant needed to register individually to submit and track applications.

Objective: "GatiShakti Sanchar Portal" is an initiative of Government of India to facilitate online processing of Right of Way (RoW) applications by providing a single interface for all the applicants for submission of Right of Way applications to all 36 States/UTs and all major Central Ministries. The portal was launched on 14th May 2022.

Features

- 1. "GatiShakti Sanchar portal" has onboarded / integrated all 36 States /UTs to accept, process and approve RoW applications through single interface.
- Portal is also integrated with RoW portals of four central ministries, Ministry of Railways, Ministry of Road, Transport and Highways (MoRTH), Ministry of Environment, Forest and Climate Change (MoEFCC) and Ministry of Defence (DGDE, ARMY, AIRFORCE, Border Roads Organisation (BRO).
- 3. The portal enables applicants of TSPs/IPs/ISPs to apply for RoW approvals to various agencies of State/UT Governments, local bodies and Ministries and monitor at one common/single portal.
- 4. Periodic SMS/Email alerts are also sent to the applicants to update application status.

5. For effective monitoring, State wise and Ministry wise dashboard has been enabled on the portal. Through the intuitive dashboard state/district wise applications, pendency,



approvals, rejections, disposal time taken, Fee and Charges etc can be viewed and problem areas attention needing can be identified.

- The 8x6 customer support helpdesk (from 10 AM 6 PM, on working days Monday to Saturday), is provided to support applicants and other stakeholders through number 0755-2700802 and email 'support@gatishaktisanchar.gov.in'
- 7. Contact details of Nodal Officers of States/UTs as well as DoT field units are also displayed on the portal to facilitate applicants to connect with the concerned authorities for any clarifications/issues.
- 8. All RoW related Acts, Circulars, guidelines, presentations, circulars etc. are also made available on the portal. Applicants can also view Application Fee and Documents needed by different States/UTs at one place for each type of RoW applications.
- 9. FAQs and Help section provide vital information in structured form to the portal users.

Advantages

- 1. For Telecom Service Providers (TSPs), Infrastructure Service Providers (IPs) and Internet Service Providers (ISPs)
 - Applying for RoW permission for any state of India at one single place

- Centralized Monitoring of applications through Dashboard
- Automated alerts on application processing updates
- Centralized help desk availability
- Faster rollout of services like 5G and Fiberisation of Towers

2. For Central and State Governments

- Another step in the direction of facilitating 'Ease of Doing business'.
- Top level monitoring of RoW pendency and reasons of rejections by field officials, online payment and processing.
- Quick approval is leading to laying of more OFC resulting in acceleration in Fiberization, increasing Tower density and will enhance connectivity and improve Quality of Service, thus better Broadband speeds.
- Laying of more OFC and erection of more Towers helping for Broadband to reach all villages and Institutions like hospitals, police stations, panchayat offices, schools and colleges, anganwadis etc. Broadband availability will facilitate the delivery of e-Governance services such as e-Health, e-education, e-commerce, cashless transactions etc. in rural areas.

3. For Citizens

With better broadband connectivity Citizens can:

- Easily access Government services, search for information online, undertake cashless transactions, and can participate in Nation building in rural areas.
- Read the online latest news, become politically aware, read about farming techniques, sell their produce online, sell their handicrafts online, read about products, buy household necessities online and can access various Government services being provided online through various websites and Mobile Apps viz. BHIM, UMANG, Digi-Locker etc.

Impact:

• The GatiShakti Sanchar Portal provided a single interface for TSPs/IPs/ISPs to obtain Right of Way (RoW) permissions from any authority in any State/UT. TSP/IPs/ISPs are now able to apply for RoW permission to any local authority in any State/UT across the country at single centralized web portal instead of login in individual State RoW portal.

- It has brought transparency, accountability and responsiveness to all stakeholders in processing of the applications. It has further facilitated "Ease of Doing Business" by cutting down on delay, inconsistency and uncertainty of policy/process and in the application processing for installation of Digital Infrastructure to achieve our goal of "Broadband to All".
- It has facilitated the replication of best practices, eliminate redundant documentation, ensure uniformity in policies, enhance the easy accessibility of policies/documents, provides a central dashboard for top level monitoring at states, and offers a central help desk and grievance redressal facility.
- It has brought standard online approval process in all States/UTs, standard Business Entities, reasons for rejection, deemed approval, requirement of documents, fee, etc.
- By digitizing the RoW application approval process, the portal significantly reduces the time taken to review and process applications. Automation and efficient workflows enable faster coordination and decision-making among government authorities and other stakeholders, resulting in reduced approval timelines, enabling faster deployment.
- Dashboard monitoring of RoW pendency by Ministry and other authorities led to faster approval of RoW permissions. Status of RoW applications is monitored and steps taken for timely disposal. Since launch about 2.10 lakhs applications are processed till 2nd January 2024 in the integrated GatiShakti Sanchar Portal.

Conclusion:

Overall, the GatiShakti Sanchar Portal is a valuable tool that provides many benefits to the telecom industry. It streamlines the application process, increases transparency, and provides valuable data for comparative analysis to improve RoW policies. It has helped to improve the ease of doing business through online application processing for installing digital infrastructure by cutting down on delays due to the inconsistency and uncertainty of policies and processes and lack of monitoring. Therefore, the portal is fast-tracking application process and helps overcome the challenges of implementing the Right of Way Rules-2016 and amendments.







Swachh Survekshan

World's Largest Urban Sanitation and Cleanliness Survey

Category 2 - Emerging Technologies for Providing Citizen Centric Delivery

Application ID: NCEG00349

Ministry of Housing and Urban Affairs



Central Level Initiative Ministry of Housing and Urban Affairs

Swachh Survekshan Framework – A Shot in the Arm for Urban Governance

Objective of Swachh Survekshan

It's a competitive framework among cities to encourage effective waste management practices, enhance public awareness, and drive sustainable urban development initiatives to achieve a cleaner India. This survey creates awareness amongst all sections of society about the importance of working together towards making cities better places to reside in.



Swachh Survekshan evaluation is an extensive digital process covers three rounds of rigorous assessment. Each city uploads monthly data in National portal "Swachhatam" which forms the assessment base. It is supplemented by 4 mobile apps data MyToilet, Field Assessment, GIS Mapping & Vote For City.

The evaluation enormity is validated from the engagement of 3000+ assessors covered 4354 cities, 90000 wards, 25000 residential areas, 16500 plants, 23000 toilets & 20000 waste generators and field verification against 22 lakhs images and 400 GB documents. This exercise has brought visible difference in cleanliness in cities.

It is a managerial tool along with evaluation exercise, a competitive framework that nudges cities and citizen's actions towards desirable sanitation outcomes. Only evaluation exercise that has directly

engaged with over 9 crore citizens including 1.4 crore citizen feedback. With seamless precision in last 8 years this digital tool has created a brand with great credibility.



Beneficiaries of the Swachh Survekshan

While the primary focus of Swachh Survekshan is to assess and rank cities, there are several beneficiaries associated with the survey:

Citizens: The ultimate beneficiaries of Swachh Survekshan are the residents of the cities. The survey promotes cleanliness and sanitation, leading to a healthier and more hygienic living environment for the citizens.

Urban Local Bodies (ULBs): The local municipal bodies and urban authorities benefit from Swachh Survekshan as it helps them identify areas that need improvement in terms of cleanliness and sanitation infrastructure. The survey provides valuable insights to plan and implement initiatives to enhance the overall cleanliness of the city.

Government Agencies: The central and state government agencies responsible for urban development and sanitation benefit from Swachh Survekshan. The survey provides a comprehensive assessment of cities, helping these agencies allocate resources, monitor progress, and implement policies and programs to improve cleanliness and sanitation.

Businesses and Tourism: Swachh Survekshan indirectly benefits businesses and tourism in ranked cities. Improved cleanliness and sanitation attract more tourists, enhance the local economy, and create opportunities for businesses in the hospitality, tourism, and related sectors.

Non-Governmental Organizations (NGOs): NGOs working in the areas of cleanliness, sanitation, and environmental conservation benefit from Swachh Survekshan. The survey highlights the importance of their work and can potentially attract support and funding for their initiatives.

Media and Researchers: Swachh Survekshan generates significant data and information about the cleanliness and sanitation status of cities. Media organizations and researchers can analyze this data to generate reports, studies, and articles that contribute to public awareness, advocacy, and academic research in the field of sanitation and urban development.

Overall, Swachh Survekshan aims to benefit society at large by promoting cleanliness, sanitation, and improved quality of life in Indian cities.

Swachh Survekshan is a framework which has truly provided a shot in the arm for urban governance towards achieving socio-economic outcomes. This framework, with its roots in creating "peer pressure", has the potential to transform governance in various other spheres through people's active participation, agility and competitiveness.

Key challenges before the Swachh Survekshan

As the Swachh Bharat Mission kicked-off in 2014, there was minimal progress on making ODF cities while solid waste processing was also quite limited in urban areas. An augmented approach was necessary to achieve vision of a Swachh Bharat within the next five years.

The granularity of data captured was also the challenge, the states were providing the details after collating the data from ULBs. The process was time taking and the data collated manually after taking details from ULBs, the process sometime exceeds monthly timeline.

An effective roadmap was therefore required to bring about rigour in monitoring progress and inculcate a spirit of vigorous competition amongst cities and states to improve their performance in

crucial cleanliness parameters. This led to the conceptualization and implementation of Swachh Survekshan (SS), the annual cleanliness survey conducted by the Ministry of Housing & Urban Affairs (MoHUA) that has, over time, emerged as the largest urban sanitation survey in the world.

The Swachh Survekshan framework has evolved continuously from being just a monitoring framework measuring outcomes. It has become an implementation accelerator enabling sustainability of outcomes by institutionalizing 'Swachhata'. Swachh Survekshan has been able to significantly transform the urban governance mechanism by incorporating speed, scale and agility at its core.

Improvement in terms of Urban Sanitation and Behavioral Change led by Swachh Survekshan

Swachh Survekshan has earned global credibility and now considered as a benchmark for other national level surveys. A radical change has been witnessed in the urban sanitation scenario in India. Cities, streets, have become visibly cleaner besides being 'Open Defecation Free', and there has been a positive behavioral change in the mindset of citizens towards 'Swachhata'.

While the triangulated approach of the survey (service level progress, certifications and citizens' voice) coupled with third party certifications has lent credibility to the assessment process. Survey data resulted in better decision making by government authorities also helped them to identify and solve sanitation and waste management issues in a time-bound manner.



SS has evolved undergoing a transition from the theme 'Measuring Physical Progress' in 2016, 'Measuring Output' (2017), 'Measuring Outcomes' (2018), 'Sustaining Swachhata' (2019), 'Institutionalizing Swachhata' (2020), 'Integrated Approach' (2021) and 'People First' in 2022.

Swachh Survekshan: Propelling Cities Towards Round-the-Clock Action

- Cities update their **monthly progress** on Swachhatam SBM-U portal against all Survekshan indicators.
 - Cities upload **documents in support of progress** claimed within stringent timeframes.
- An *independent agency* verifies the data and validates the progress of each city through on-call/ on-field interaction with citizens and random assessments of areas in cities with movement of assessors being geo-tagged.

Jan Andolan: The most critical part of the Mission is **behavioural change among citizens** and transforming the Swachhata movement into a true 'Jan Andolan'. The success in this direction is attributable to Swachh Survekshan due to its thrust on citizen engagement and feedbacks. Several citizen engagement initiatives are built into the overall framework such as recognition of Swachhata Champions, NGOs, voluntary organizations, start-ups and display of creatives and other innovative forms of communication which not only ensure continued participation of citizens but inculcate in them a sense of ownership about the Swachhata of their cities.



Integration of the marginalized urban population: SBM-U has placed a strong emphasis on improving the *socio-economic conditions of sanitation workers and waste pickers* who not only come from marginalized sections of society but are also vulnerable due to the nature of their jobs and lack of social safety nets. As a result of the built-in indicators focusing on welfare of these groups, several informal waste pickers have been integrated into the formal workforce. Further, the sanitation workers have been able to receive the benefits under various social welfare schemes of Central/ State Government(s).

By encouraging cities to vie for better rankings, it motivates them to augment their efforts in ensuring improved sanitation facilities and waste management practices. A transparent, digital assessment is conducted by a third-party agency, considering objective evidence and citizen feedback to validate cities' claims about their sanitation endeavors. This data-driven approach not only fosters transparency but also empowers cities to identify areas for improvement, paving the way for targeted enhancements in their sanitation infrastructure. A comprehensive results analysis dashboard further aids cities in benchmarking their performance against sanitation parameters, fostering a culture of accountability and continuous improvement.

In essence, Swachh Survekshan emerges as the pivotal tool through which endeavors are meticulously executed to bring sanitation services within reach of even the remotest communities in Urban India by promoting healthy competition, transparency, and data-based decision-making, it lays the foundation for a cleaner, healthier, and more inclusive environment for all citizens.

The Yardstick to Assess Cities

A consolidated framework and a set of guidelines outlining the parameters for the cities to be assessed under the tenets of Swachh Survekshan:

- Service level progress: Evaluating progress of cities on ODF status, segregated waste collection, processing, disposal of solid waste and sustainable sanitation; progress claimed is validated through interaction with citizens and on-field visits
- Citizens' Voice: Assessment of cities based on direct feedback, engagement with citizens
- Certifications assessing progress of cities on their performance under MoHUA's certification protocols such as Star Rating for Garbage Free Cities and ODF/ODF+/ODF++/Water+



• An independent agency verifies the data and validates the progress of each city through oncall/on-field interaction with citizens and randomly assesses areas in cities, while movement of assessors are geo-tagged.

A consolidated evaluation framework which is completely online and a set of guidelines outlining the parameters for the cities to be assessed under the tenets of Swachh Survekshan decided. **Cities evaluated based on service level progress (40%), citizen feedback (30%) & Swachhata Certifications (30%).** An independent agency verifies the data and validates the progress of each city through on-call/on-field interaction with citizens and randomly assesses areas in cities, while movement of assessors are geo-tagged.



The Story and Performance on the Ground

The survey has been successful in enthusing cities with a spirit of healthy competition towards the concept of 'swachhata'. In its first round in 2016, the 'Swachh Survekshan' was conducted among 73 cities with population of 10 lakh and above, and state / UT capitals of India, and had 1 lakh citizen providing feedback. In 2017, the survey was conducted among 434 cities, and 18 lakh citizen feedback was collected. Swachh Survekshan 2018 covered 4,203 ULBs: Indore, Bhopal and



Chandigarh were adjudged the top 3 cleanest cities in the country, and Jharkhand, Maharashtra, and Chhattisgarh emerged as the top 3 performing states, respectively. Over 37 lakh citizens provided their feedback. This was the first ever pan-India sanitation survey that impacted around 40 crore people. Swachh Survekshan 2019 covered 4,237 cities. Indore once again emerged as the cleanest city in the

country, with Ambikapur and Mysuru adjudged 2nd and 3rd cleanest, respectively. Chhattisgarh, Jharkhand and Maharashtra emerged as the best performing states. The survey garnered 64 lakh citizens' feedback.

SS 2019 was unique in which the service level assessment was completely online and paperless. Moreover, as against the three data points used in the previous surveys, the 2019 edition had a fourth data point e. i. the third-party certifications of cities (based on garbage free protocol, and ODF, SBM

by MOHUA). Swachh Survekshan 2020 (SS 2020), which covered 4,242 cities, introduced the concept of 'continuous Survekshan' to ensure that the SBMU outcomes are sustained through a system of continuous monitoring and verification. There were three rounds of quarterly Survekshan (Swachh Survekshan Leagues). As compared to 2020, the participation increased in Swachh Survekshan

ODF+ and SBM ODF++ protocols introduced



, as a total of **4,320 cities** enrolled for the survey. More than 5 crore citizens were engaged through feedback and social media. Indore emerged as the cleanest city for the fifth time in succession, followed by Surat at No. 2 and Vijayawada at No. 3. Chhattisgarh and Jharkhand emerged as the cleanest states in the more than 100 ULBs and less than 100 ULBs categories, respectively.



Swachh Survekshan 2022, in which 4,355 ULBs participated and feedback of over 1 crore citizens was received, coincided with the Azadi Ka Amrit Mahotsav. The salient features of SS 2022 were People First approach, focus on wellbeing of sanitation workers, emphasis on feedback of senior citizens and young adults, respect to Azadi movement, higher recognition to smaller towns and several other new features.



The scale of Swachh Survekshan was evident in the consistent increase in the number of cities over the years. From surveying 73 major cities in 2016 and 434 cities in 2017, the 7th edition of Swachh Survekshan has become became the world's largest urban cleanliness survey, with 4,355 cities participated in the survey.



Survey result dashboard (<u>https://sbmurban.org/ss-2022-result-dashboard</u>) launched to display the Survekshan results to the citizens and cities based on the key evaluation parameters. For every participated city, a **citizen report card** is prepared to showcase the overall picture of city on the key evaluation parameters.

In Swachh Survekshan 2023, the surveys conducted in four phases from April-May, June-July, August-September and October-December respectively. Of these, Phases 1 and 2 assessed on the basis of Service Level Progress indicators designed for SS-2022. Marks allotted have also been increased for segregated door-to-door collection, cleaning of back lanes, plastic waste management, zero waste event while dedicated indicator have also been introduced on 'waste to wonder' park with 2% weightage. Results of Swachh Survekshan 2023 will be declared on 11th January 2024 in the presence of Hon'ble President of India, a result dashboard of SS 2023 will also be published on 11th January.



Application of Emerging Technologies in the Swachh Survekshan

It encourages participation and awareness in citizens about the importance of working together towards making cities better places.

SS assessment workflow is integrated in *Swachhatam portal, this portal collects & monitor the cities performance and use below emerging technologies for efficient service delivery. *Swachhata Application designed to promote cleanliness and hygiene by empowering citizens to report and resolve grievances related to sanitation in 18 categories. 2.2 Crores citizen registered & 2.6 crores complaints resolved till date.

Evidence Geo Tagging with Timestamp: Field assessors use assessment mobile applications to capture the city sanitation infra images which are monitored real time basis on the geo tagging and time stamp.

GPS Enabled Monitoring: Cities infrastructure such as processing plants, dumpsites, transfer stations etc. are geo tagged with the help of GIS based mobile application which facilitates the real time monitoring.

Artificial Intelligence: Artificial Intelligence and Machine Learning are used in MyToilet mobile application to verify and validate the condition toilet images captured by the caretaker.

Cloud Computing: IT infra is deployed in AWS cloud which gives the flexibility and scalability to handle the load during peak and idle time. Various key cloud services (EC2, EBS, S3, ELB, ETL etc.) are used to provide better user experience.



Swachh Survekshan, Ministry of Housing and Urban Affairs

Innovative Practices Undertaken in the Swachh Survekshan

Swachh Survekshan has implemented several innovative practices as part of the Swachh Bharat Mission. These practices are designed to improve sanitation services and waste management while fostering transparency and citizen engagement. Some of the innovative measures undertaken include:

1. 100% Digital Assessment: Swachh Survekshan leverages technology and innovation to streamline data collection and analysis. Mobile applications and management information systems are used to gather data, monitor progress on real time basis, and report issues related to sanitation and waste management. The observation of assessors including the evidence and citizen validation and feedback are collected and recorded digitally. These technologies enhance efficiency and accuracy in the assessment process. This approach ensures a transparent and evidence-based evaluation of cities' sanitation efforts, minimizing the scope for subjective biases and enhancing accuracy.

2. Citizen Feedback Mechanism: This initiative incorporates citizen feedback through various digital channels such as 'Vote For Your City' Mobile Application and Web Application, QR Code,

Swachhata App, MyGov platform of GoI. By giving citizens a voice in the assessment process, it encourages active participation and empowers them to share their views on sanitation services. This feedback loop helps MoHUA to identify specific areas that require attention and improvements.



3. Result Analysis Dashboard: Swachh Survekshan provides cities with a comprehensive results analysis dashboard. This tool allows cities to compare their performance against sanitation and waste management parameters. The dashboard facilitates self-assessment, helping cities identify strengths and weaknesses and develop targeted strategies to improve and ensure delivery of services in an effective and efficient manner to its citizen.



4. Publicly Accessible City Report Card: The findings and results of Swachh Survekshan are made publicly accessible through the 'City Report Card' published on the Swachhatam Portal. This transparent disclosure enables citizens to know the status of their city's sanitation and waste management efforts. It fosters accountability among Municipal bodies and encourages citizens to demand better services.

5. Behavioral Change and Awareness Campaigns: The initiative conducts extensive awareness campaigns to promote behavioral change regarding sanitation practices. By using innovative and creative approaches, these campaigns educate and engage citizens in adopting cleaner habits and supporting waste management initiatives. Identification of Local Swachhata Champions and Brand Ambassadors, involvement of SHGs and women from socio economic background for promotion of best practices is one of the key areas Swachh Survekshan focuses on to bring in better, effective and efficient services to the citizens.

6. Emphasis on Waste Processing and Recycling: Swachh Survekshan emphasizes on 100% scientific waste processing and recycling. This encourages cities to adopt sustainable waste management practices, leading to a reduction in the burden on landfills and contributing to environmental preservation. Case studies, capacity building workshops, exposure visits, are conducted for all stakeholders at National, state and ULB Level with the sole focus of improving the service delivery at the grassroot level.

7. Targeted Approaches for Vulnerable Communities: The initiative recognizes the specific challenges faced by marginalized and vulnerable communities in accessing sanitation services. Targeted interventions are undertaken to ensure equitable access to sanitation facilities for all sections of society. Indicators related to waste management services, maintenance of public areas, involvement of SHGs, women participation focusing on the population living in slums are some ways where Swachh Survekshan is being used as a tool to improve service delivery to every Stratton the society.

By combining these innovative practices, Swachh Survekshan strives to ensure effective and efficient service delivery by Urban Local Bodies (ULBs) in sanitation and waste management. The use of technology, citizen engagement, and data-driven decision-making are pivotal in promoting continuous improvements and achieving the goals of the Swachh Bharat Mission.

Swachhatam Portal: Online Integrated Platform for all e-Services Monitoring

Swachhatam is the SBM Urban National portal which acts as a single source of truth for SBM Urban mission related information and data available in this portal is used for various national assessments and national ratings such as Swachh Survekshan, ODF Certification and GFC rating.

Swachhatam Portal acts as a centralized hub, enabling citizens to actively participate in the Swachh Bharat Mission and Swachh Survekshan processes. It empowers citizens to play an essential role in promoting cleanliness and sanitation by providing valuable feedback and accessing crucial information. By consolidating various E-services, the portal enhances transparency, accountability, and efficiency, contributing to a cleaner and healthier India.

The Swachhatam Portal plays a critical role in addressing various challenges related to service provision under the Swachh Bharat Mission and Swachh Survekshan. By providing centralized access to information, encouraging citizen engagement, and enabling data-driven decision-making, the portal contributes to a more transparent, efficient, and citizen-centric approach towards achieving a cleaner and healthier India.

1. Granularity of the data: The Swachhatam portal captures ward level details, city level details, State level details and collate for State and National level dashboards and information system. Earlier the granularity was at State level.

2. Centralized Information Access: The portal serves as a single platform where cities and citizens can access various E-services and information related to sanitation and waste management. It eliminates the need to navigate multiple websites or channels, providing a centralized and convenient source for all relevant data.

3. Transparency and Accountability: By presenting Swachh Survekshan findings and city-specific "City Report Cards," the portal promotes transparency in the assessment process. Citizens can easily view their city's sanitation status, making municipal bodies more accountable for their performance and driving improvements.

4. Citizen Engagement and Feedback: Through the integration of the Swachhata App, the portal facilitates direct citizen engagement and grievance redressal. Citizens can report issues and provide feedback on sanitation services, encouraging active participation and ensuring their voices are heard.

5. Data-Driven Decision and Policy Making: The portal's data aggregation and analysis capabilities enable data-driven decision-making. Municipal authorities can use the data to identify problem areas, prioritize interventions, and allocate resources efficiently.

6. Real-Time Monitoring: The use of digital tools and real-time data updates on the portal enable continuous monitoring of sanitation services. This proactive approach allows authorities to respond promptly to emerging issues and take timely corrective actions

7. Enhanced Efficiency: By streamlining data collection and dissemination, the portal enhances the efficiency of E-services provided. It reduces manual efforts in data management and reporting, allowing for a more effective and faster response to citizens' needs.

8. Equitable Service Access: The portal's comprehensive approach ensures that information is available to citizens across different regions and demographics. This promotes equitable access to sanitation-related data, empowering citizens to advocate for improved services in their respective areas.

9. Promotion of Best Practices: The portal's accessibility to Swachh Survekshan findings and city rankings facilitates the sharing of best practices between cities. Municipalities can learn from each other's successes, fostering innovation and continuous improvement.

Swachhata App – Sanitation Grievance Redressal Application for Citizen Feedback and Complaints

The Swachhata application is a mobile application designed by the Ministry of Housing and Urban Affairs (MoHUA. The app is designed to **promote cleanliness and hygiene by empowering citizens to report and resolve grievances related to sanitation**, garbage disposal, and other cleanliness issues in their surroundings.

Using the Swachhata app, individuals can report grievances regarding unattended garbage dumps, overflowing drains, littered public spaces, broken public toilets, and other sanitation-

related problems they come across in their neighbourhoods. There are **18 various grievances categories** available under which citizens can raise their grievances. The app enables users to capture photographs of the issue, provide a brief description, and mark the exact location for reference.

Currently around 2.2 Crores citizens are registered in the system and around 2.8 Crores complaints have been registered in the system, out of which 2.6 Crores are resolved. 4500 cities are onboarded in this application and many cities have integrated their city grievance redressal application with Swachhata application.





Once a grievance is registered through the app, it is forwarded to the concerned municipal authorities or local government bodies responsible for resolving such issues. **The officials can then take appropriate action to address the problem and update the status of the complaint on the app.** This transparent process allows citizens to track the progress of their complaints and ensure that their grievances are being addressed.

The Swachhata application not only enables citizens to actively participate in maintaining cleanliness but also promotes accountability and transparency in the system. By reporting grievances through the app, citizens play a vital role in improving the overall cleanliness and hygiene standards in their communities and contribute to the larger goal of creating a Swachh Bharat (Clean India).

Glimpse of Swachh Survekshan 2022 Awards Ceremony

On the 1st of October 2022, Hon'ble President of India Smt. Droupadi Murmu felicitated the cleanest States and cities for the work they have done as part of Azaadi@75 Swachh Survekshan 2022. The event was organised by Ministry of Housing & Urban Affairs (MoHUA) at Talkatora Stadium, New Delhi on the first anniversary of Swachh Bharat Mission – Urban 2.0 launched by Hon'ble Prime Minister on 1st October 2021, with aspirational vision of creating Garbage Free cities. The President said that Swachh Survey is promoting healthy competition between states and cities for cleanliness. She noted that about nine crore people in more than 4000 cities have participated in this year's survey. She appreciated the Ministry of Housing and Urban Affairs for raising awareness about cleanliness among the citizens at a wider level. The President said that continuous efforts of central and state governments and all citizens in the last eight years are behind the success of 'Swachh Bharat Mission'.

State Level Initiative Government of Gujarat

Khedut Shakti – Leveraging Technology to Promote Sustainable Agricultural Practices

Abstract

Digital transformation has become a need of the hour in various sectors, and agriculture is no exception for that. The Gujarat Green Revolution Company (GGRC) has been at the forefront of implementing digital initiative. Since its inception in 2005, GGRC has been working determinedly to streamline the Micro Irrigation Scheme (MIS) in Gujarat, ensuring uniformity and efficiency. The Khedut Shakti Portal represents a significant leap forward, leveraging technology to empower farmers, enhance transparency, and promote sustainable agricultural practices. This article explores the key features, objectives, and the profound impact of this digital transformation initiative on the agricultural landscape in Gujarat.

The complex and time-consuming process of obtaining approvals and subsidies often discourages farmers from accessing Government scheme benefits. The Khedut Shakti portal is a transformative solution that empowers farmers to conveniently access benefit of MIS installation. By visiting the portal and providing their details, farmers initiate a streamlined process.

GGRC-empaneled OEMs compete to install Micro-Irrigation Systems (MIS) empowering farmer to have the freedom to choose their preferred agency, ensuring personalized service. The agencies collect necessary documents, which are seamlessly uploaded to the portal linked with Aadhaar. Digital mapping and automatic checks eliminate duplicate applications.

The integration of micro-irrigation activities into the portal enables transparency, accelerates processing, and simplifies subsidy disbursement. Online and mobile verification with geo-locations confirms installation. The Khedut Shakti portal epitomizes empowerment, transparency, and efficiency, benefiting farmers and fostering sustainability in agriculture.

Introduction

The initiation of drip irrigation in Gujarat dates to 1991 through the Jal Sanchay Abhiyan. During the period from 1991 until April 2005, the Micro Irrigation Scheme in Gujarat was implemented by different government departments. Subsidies were available under various schemes and sub-schemes, with differing subsidy assistance norms, including additional subsidies for tribal farmers from the Tribal Development Department. There was limited availability of information and low awareness among farmers. The varying procedures and norms for granting assistance across different government departments caused confusion and administrative difficulties in implementing the schemes. Moreover, there was no structured monitoring system for disbursement of subsidies.

Due to these scattered efforts and a lack of uniform implementation, awareness, and adoption of micro-irrigation among farmers remained minimal. Until 2004, the total coverage under Micro Irrigation was only 2.26 lakh hectares, benefiting 1.41 lakh farmers. Recognizing the low penetration of the scheme and technology among farmers, the government felt the need for a focused and result-oriented approach.

Under the visionary leadership of the then Chief Minister of Gujarat and the current Prime Minister of India, Shri Narendra Modi, the State Government decided to take a new approach and established a Special Purpose Vehicle (SPV) called the Gujarat Green Revolution Company Ltd. (GGRC) with the primary objectives of implementing the Micro Irrigation Scheme uniformly across Gujarat. This strategic move led to a quantum jump in the coverage of micro irrigation. Apart from boosting productivity, the exponential growth in micro irrigation has facilitated crop diversification towards horticulture and enabled cultivation in water-scarce regions.

Over the years, GGRC has evolved, and its latest venture, the Khedut Shakti Portal-a user-friendly portal that offers online services, reaching even the last mile through an innovative approach of process re-engineering, epitomizes the organization's commitment to innovation and inclusivity.

This initiative redefines the government process, placing the beneficiary farmer at the center stage and introducing an innovative idea that revolutionizes service delivery. It is a path breaking initiative that fundamentally aligns with the very basis for which organization was created.

Before Khedut Shakti portal

Farmers had to visit multiple vendors for quotations and submit physical documents to regional offices, causing delays and hurdles in availing the benefits of the scheme. This used to discourage

farmers, resulting in them avoiding the hassle of availing the benefits of the scheme. OEMs needed to visit GGRC during various stages of MIS installation.

Process for selection of the company was tedious task for the farmers as it involved the time that also affected the daily works of their farms. Physical document from the farmer to the GGRC involved much time.

Process Flow prior to Khedut shakti Portal



The Khedut Shakti portal has eliminated the entire physical submission part from the process. These documents are now uploaded on the Khedut Shakti portal. GGRC verifies and approves the

submissions, leading to faster installation and subsidy disbursement through the Khedut Shakti portal, resulting in hassle-free implementation. Inspection and quality check records are uploaded and processed through Khedut Shakti, reducing the cumbersome time of physical submission at GGRC and providing real-time information about the status.

The average installation time has been reduced from 35-65 days to 18-30 days. The streamlined eprocess and information transparency have resulted in the lowest cost per hectare of MIS installation in the country.

The Khedut Shakti portal is designed to bring the services to the doorstep of farmers, ensuring greater accessibility and convenience. Through this online platform, farmers assume a central role in the service delivery process. They become the principal decision-makers, while GGRC and the entire administrative machinery operate as facilitators or agents, assisting farmers in availing expertise, funding, and technical know-how to set up micro-irrigation systems in their fields. This shift in the traditional service delivery paradigm empowers farmers, making them active participants in the process and enabling them to tailor the services to their specific needs and circumstances.

The innovative approach of the Khedut Shakti portal represents a paradigm shift in public service delivery, aligning with modern theoretical frameworks in public administration. It embraces principles of citizen-centric service delivery, putting farmers at the forefront and considering them as customers rather than passive recipients of benefits. This approach aligns with the New Public Management (NPM) philosophy, which emphasizes customer-centricity, efficiency, and accountability in public administration.

The portal's online nature reflects the incorporation of e-governance principles, another important aspect of modern public service delivery. By leveraging technology, the Khedut Shakti portal streamlines processes, reduces bureaucratic hurdles, and enhances transparency. It enables real-time tracking and monitoring of applications, installations, and subsidy disbursements, ensuring accountability and trust in the service delivery process.

Need for the transformation

In the pre-IT enabled scenario, the process of onsite physical verification for subsidy release to farmers was plagued by various challenges and inefficiencies. The verification was conducted

manually, and subsequently, hand-written reports were submitted to third-party agencies for necessary validation. These reports were then forwarded to the GGRC office in Vadodara for the release of financial assistance. Moreover, the manual nature of the process had had the risk of human errors in data entry, such as registration numbers, farmer names, and land survey details.

Another significant challenge was the delay in retrieving field inspection and trial run data, which often took around 1-2 weeks to be collected and documented. This hindered timely decision-making and effective project management.

Furthermore, the identification of beneficiaries was carried out manually through verification of various identity documents, which left the process vulnerable to manipulation and discrepancies. The absence of real-time supervision and automated systems meant that there was limited oversight and control over the verification and reporting procedures.

In terms of financial management, prior to the implementation of the Public Financial Management System (PFMS), subsidies were received by implementing agencies from the Government of India (GOI) through separate bank accounts. The utilization certificates, which were essential for financial accountability, were managed manually by the implementing agencies. This manual approach added complexities and increased the risk of errors.

Overall, the lack of IT integration and automation in the subsidy release process resulted in significant delays, potential malpractices, human errors, and limited real-time monitoring. The system was burdened by manual verification, paper-based reporting, and less efficient utilization certificate management.

Significance of Khedut Shakti Portal

www.khedut.ggrc.co.in

The IT-enabled implementation of the Micro Irrigation System (MIS) revolutionizes the entire system, simplifying processes, enhancing data accuracy, and optimizing infrastructure utilization. With a Unique Identity Number assigned to farmers and GEO tagging of MIS assets, the system ensures accountability and traceability.

The mobile application enables efficient asset verification, while real-time digital access to information enhances decision-making. Aadhaar-linked Direct Benefit Transfer of subsidies

streamlines financial transactions. This IT-enabled approach reengineers the process, reducing manual effort and ensuring higher data accuracy. It simplifies application processing, reduces paperwork, and minimizes administrative burdens.

The system leverages IT infrastructure to facilitate seamless communication, data exchange, and realtime monitoring. It eliminates the need for physical document transportation and provides instant access to information for timely analysis. By linking Aadhaar for beneficiary authentication, the system enhances transparency and ensures subsidy disbursal to the right recipients. Overall, the ITenabled implementation of MIS maximizes efficiency, improves service quality, and optimizes the utilization of resources. It empowers farmers, simplifies processes, and strengthens the agricultural ecosystem in Gujarat.

Overview of Khedut Shakti Portal



The Khedut Shakti Portal serves as a modern, online platform designed to cater to farmers' specific needs. It offers agronomy services, transforming the traditional approach to micro-irrigation activities. By implementing the portal, GGRC has effectively shifted the paradigm, placing farmers at the center of the process. The portal is not just a technological advancement; it is a farmer-centric initiative that prioritizes accessibility and transparency.

The Khedut Shakti portal is a user-friendly platform that provides agronomy services tailored to farmers' specific farm needs. Its increased implementation of micro-irrigation systems is promoting sustainable agricultural practices, resulting in water and electricity savings, and increased crop yields. The entire state is reaping the benefits of these advancements in agriculture

Farmer-centric - The implementation of the Khedut Shakti portal has revolutionized micro-irrigation activities by providing a modern online platform that benefits farmers. The portal treats farmers like kings, It empowers farmers to avail the scheme from their choice of vendor without visiting the office of the government or the vendor.

Farmers, supplier agencies, inspection agencies, GGRC officials, and government officials now have complete access to the portal, ensuring transparency, efficiency, and faster processing of subsidy disbursement.

The portal incorporates online verification and monitoring tools that allow for the submission of reports with geo-locations, confirming the installation of micro-irrigation systems in the surveyed fields.

Reaching out to vulnerable group



One of the primary concerns associated with online platforms is the potential exclusion of vulnerable segments of society. GGRC recognized this challenge and prioritized accessibility for those without smartphones, limited connectivity, and low literacy levels. Farmers can also register by simply sending SMS on 9763322211 with their credentials like name, village, taluka, district and land survey number. The Khedut Shakti Portal was conceptualized with the intention of proactively reaching out to vulnerable groups, ensuring that the most marginalized farmers can avail government benefits hassle-free.

Key Features of Khedut Shakti Portal

- Bridging the Digital Divide: The portal is designed to bridge the digital divide by re-engineering processes to prioritize the most vulnerable segments. It aims to provide services and subsidies transparently and without any cost or compliance burden for these farmers.
- Duplication Check at Application Stage: The system ensures that there is no duplication of subsidies, minimizing the possibility of fraudulent practices. This adds an extra layer of security to the subsidy approval process.
- Self-Selection Basis: The scheme operates on a self-selection basis, allowing interested farmers to register for the MIS implementation. The online submission of required documents based on a checklist reduces the scope for manual intervention and ensures a streamlined process.
- Aadhar Linkage and DBT: The portal incorporates Aadhar linkage and Direct Benefit Transfer (DBT) to enhance security and prevent any wrongdoing. This adds an additional layer of protection to the subsidy disbursement process.
- First In, First Out Principle: Transparency is further enhanced by following the "first in, first out" principle for approval. Real-time information is provided to all stakeholders, ensuring that the entire process is efficient and accountable.
- Doorstep Services: The scheme has eliminated the need for farmers to visit government offices, as all services are now extended to their doorsteps. This not only saves time for farmers but also contributes to a more inclusive and accessible system.

Impact of the Khedut Shakti Portal

The impact of the Khedut Shakti Portal is evident in the substantial increase in processed applications and the covered area. The portal has processed 78,000 applications covering an area of 1.10 lakh hectares, surpassing the previous figures of 58,000 applications covering 0.78 lakh hectares. This surge in numbers signifies the success and widespread adoption of the digital platform.

Revolutionizing Micro Irrigation Activities

The implementation of the Khedut Shakti Portal marks a revolution in micro-irrigation activities. By providing a modern online platform, the portal empowers farmers to choose vendors without the need to visit government offices. This shift in approach places farmers at the center, treating them with the

importance they deserve. The entire process, from registration to installation, is now conducted online, streamlining the implementation of the Micro Irrigation Scheme.

Transparency and Efficiency through Online Verification and Monitoring Tools

One of the portal's standout features is its incorporation of online verification and monitoring tools. Farmers, supplier agencies, inspection agencies, GGRC officials, and government officials have complete access to the portal, ensuring transparency, efficiency, and faster processing of subsidy disbursement. The submission of reports with geo-locations confirms the installation of microirrigation systems, adding a layer of accountability to the entire process.

Eliminating Manual Intervention and Reducing Farmer Burden

The Khedut Shakti Portal operates on a self-selection basis, minimizing manual intervention in the approval process. Farmers can register online, submit necessary documents, and receive approvals without unnecessary delays. This not only speeds up the process but also reduces the burden on farmers, who no longer need to make multiple visits to offices for various stages of the MIS implementation.

Addressing Concerns of Vulnerable Segments

While the digital transformation is noteworthy, concerns about vulnerable segments were not overlooked. The core principle guiding the portal's conceptualization was prioritizing accessibility for the most vulnerable. The proactive approach of government agencies reaching out to the doorstep of these groups ensures that the benefits of the scheme are extended to those without smartphones, with limited connectivity, and low literacy levels.

Enhanced Security Measures for Subsidy Disbursement

The Khedut Shakti Portal incorporates Aadhar linkage and DBT, adding an extra layer of protection against fraudulent practices. By conducting a duplication check at the application stage, the system ensures that subsidies are disbursed transparently and efficiently. The "first in, first out" principle further contributes to the security and accountability of the subsidy disbursement process.

Conclusion: A Path breaking Initiative in Digital Transformation

The Khedut Shakti Portal by GGRC in Gujarat stands as a path breaking initiative in the realm of digital transformation in agriculture. By prioritizing accessibility, transparency, and efficiency, GGRC has successfully revolutionized the Micro Irrigation Scheme. The portal's user-friendly interface,

online verification tools, and the elimination of manual interventions have significantly improved service delivery to farmers.

The impact of the Khedut Shakti Portal is not only measured in numbers—78,000 applications covering 1.10 lakh hectares—but in the transformation of the agricultural landscape in Gujarat. The portal's success lies in its ability to place the beneficiary farmer at the center stage, fundamentally aligning with the organization's objectives since its formation in 2005.



As the Khedut Shakti Portal continues to empower farmers, eliminate inequalities, and promote sustainable agricultural practices, it serves as a model for other regions and sectors seeking to harness the power of digital transformation for the greater good of the nation.

The success and recognition of GGRC's new service delivery model-the Khedut Shakti Portal have been significant. The GGRC model has been widely acknowledged as a success story, with Uttar Pradesh and Chhattisgarh having already adopted it. The Government of India (GOI) has acknowledged the model as an exemplary approach in public service delivery and has encouraged other states to adopt it through a circular issued to all states implementing the GOI-funded Pradhan Mantri Krishi Sinchai Yojana (PMKSY). Furthermore, GOI and GGRC have signed a Memorandum of Understanding (MoU) to develop a national portal to standardize and replicate this innovative model across the country.

Online Tourist Inner Line Permit System – Easy Access for Tourist Permit

Welfare of citizens is the primary purpose of governance. Making access to public services easier and convenient is a critical part of good governance. Arunachal Pradesh Government took upon itself to leverage the power of IT to usher in an era of good governance in the state. As part of the process, the year 2022-23 was marked as the "year of e-governance", and multiple projects were initiated, completed and launched. One transformational project for the state is the Online Tourist Inner Line Permit System (eILP).



The Inner Line Permit (ILP) is an official travel document mandated by the Government of India to allow travel by an Indian citizen into a protected area for a limited period of time. Brought about in practise to act as a means to safeguard the rights, the unique culture and the safety of the tribal culture in the states of the North East of India though the BEFR Act of 1873, the ILP has been critical in ensuring that the pristine beauty, tribal ethos and cultural values of these regions continue to be preserved till date. The act mandates any Indian citizen who is not a resident of Arunachal Pradesh to obtain such a permit for entering into the state.

The process of applying for an ILP was always seen as cumbersome. The filled in application form was to be submitted to the concerned Deputy Commissioners office through the entry check gate at the state's borders, it was then processed and the approved ILP came back in 7-8 working days. The physical ILP was then verified with an intimation of the same at the designated entry check gate, which had an unruly habit of getting lost in post. It did not matter if the aim was pure short term tourism, business or long term work, the ILP system remained the same.

In an era of drastic transformation in connectivity, enhanced human interaction and scope of business especially tourism potential. The ILP process became a thorn in the beautiful basket of roses that the state had to offer. The government saw process reengineering as a pre-requirement to make the process transparent, simpler, faster and efficient. The solution was found in the e-ILP, an automated tourist ILP generation system.









The Tourist e-ILP encompasses a complete digital transformation, right from application to generation to verification. Any applicant can now log on to the concerned portal, fill the application form online, upload their ID document, pay the required fees, and get the QR coded ILP in a matter of minutes. The ILP is auto approved, and self-verified, and because of its QR code can be verified thorough a

digital app in a matter of seconds at any check gate. This has brought the complete process from a matter of 7 days to a matter of 7 minutes. Additionally, *the applicant can track the status of his application online, can upload documents directly from* DigiLocker, and can even download it into DigiLocker for use.

The system has amalgamated the multiple levels of verification into self-verification and auto approval, reiterating the enhanced trust in the citizenry. The result has been phenomenal, in terms of ease of access, grant and most of all in growth in business and tourism for the state. The e-ILP is granted for a period of 14 days in one block, and the applicant can reapply if required. The portal also maintains all history of applications and permits groups to apply together for ease. All these functionalities have only added to the functionality and ease of the process bringing about multi fold dividends. The Hon'ble Chief Minister of the state inaugurated the Tourist eILP on 17th Nov 2022, as part of the "Year of eGovernance" for the state of Arunachal Pradesh.

So far more than 23,848 tourists have applied online for the Tourist eILP and the state has generated revenue of more than Rs. 23 Lakhs from the portal alone, since the launch.

Under the system, 25 gates bordering Arunachal Pradesh, 20 district headquarters, 6 offices of the Deputy Resident Commissioners, an Office of the Resident Commissioner and 5 offices of Liaison Officers are covered and connected to the system.

Key Features

Some benefits for the citizens

- Paperless ILPs are issued and the whole process of application and receipt of permit can be completed on web portal or mobile device.
- It is fully mobile responsive.
- It has the facility for applying Single, Group ILP or instant ILP.
- With the integration of Digi locker, it has further facilitated the citizens to upload documents directly from Digi locker.
- Notification is sent to user's email as well as registered mobile numbers for easy status tracking of the application.
- Secure payment gateway is integrated into the system viz. Net Banking, Credit Card, UPI and Debit Card for easy payment for the permit.

- Google map integration for the check gates is available for easy identification of location.
- Instant issuance of Tourist eILP with the introduction of auto approval for tourists visiting the state.
- Further, it has enabled the Government to: -
 - Verify the ILP applicant, documents and process application online and issue valid authenticated permits.
 - With the help of a Mobile App, the Security personnel at the check gate entry points can check the validity of the Permit by reading the QR Code printed on the issued ILP.
 - All the ILP issuing offices within Arunachal Pradesh and outside the state are available in one server to automate the process and also all the check gates of the state would be able to access information from the server through Internet.
 - Made available at all the check gates and the RC, DRC and CC at different locations outside the state; Delhi, Kolkata, Guwahati, Shillong, Dibrugarh, Tezpur and Jorhat have been e-enabled to issue e-ILP.
 - Administrator can generate reports on list of ILP issued, based on his/her customized queries



Improvements in the Governance

Online ILP system has brought in sea change in the Government functioning and Service Delivery.

- Time taken to process an eILP application has drastically reduced from 7 days to 7 minutes.
- Online application for Single eILP, Group eILP and instant eILP, DigiLocker integration and online payments has made the government service delivery speedy, more accessible, convenient, and efficient.
- Emails and SMS notifications to applicants and online tracking of the eILP application over web portal have made the process more transparent and accountable.
 - There has been a change in the Government processing as well; multiple levels of verification and approval have been eliminated for Tourist eILP with auto approval making the functioning simpler and efficient.
 - The accounting system has also been streamlined and made online and it has been successful in checking revenue leakage, prevent corruption and more accountable.
 - The latest technology has been integrated for authenticating the issued permits by use of QR code and a mobile app at the check gates for validating the permits.
 - The Government process has been reformed, the multiple levels of application processing have been eliminated, avoiding unnecessary file movement.
 - After state wide rollout to use the Online ILP system, district headquarters have discontinued the issue of paper ILPs.

Therefore, to summarize through this project the complete process of issuance of Inner Line Permit has been made online, from information, application, and online payment of fees and tracking of status to approving and receiving the permit online. The applicant need no more visit the Office and only has to track the status online from the convenience of his desk/mobile at home. eILP is a digitally signed document fully integrated with DigiLocker, secure payment gateway and it facilitates ILPs at one's own doorstep.

Suvidha System- Boosting Export by Cutting Down Transportation Cost

Government of West Bengal in coordination with Land Ports Authority of India, Indian Customs (CBIC), and Border Security Force (BSF) has started Suvidha Vehicles Facilitation System for quick clearance and smooth movement of export bound vehicles to Bangladesh at various Integrated Check Posts (ICPs)/ Land Custom Stations (LCSs) of West Bengal. Once registered with this portal, all sorts of facilitations for smooth movement and clearances with concerned agencies are ensured in a time bound manner. In case of any issue faced by the User, a round the clock Control Room with a dedicated Helpline has been opened to provide quick redressal of those issues.



Background

The unstructured and manual queue management for the export of goods by road through various Integrated Check Posts (ICPs)/Land Custom Stations (LCSs) on Indo-Bangladesh border was making way for corruption and malpractices. There is a backlog of huge number of permit requests which was resulting long waiting period (40 to 45 days) for trucks at the border. A web portal namely Suvidha

Vehicles Facilitation System was proposed to resolve the problem and to reduce the enhancement of cost due to inordinate delay in delivery of export material.

The Manual Process

Before the implementation of Suvidha facility, trade growth was impeded due to lack of facilities and infrastructure deficit at all the ICP/LCS within the state of West Bengal. Poor facilities have made border crossing time-consuming and costly.

All cargo trucks headed for any ICP/LCS need to first obtain a parking pass / serial number and on the basis of first-arrived, first-served, they were allowed to enter into the custom notified zone. Average time delay for a single shipment was approximately 45 (forty-five) days. The trucks were parked by the either side of the road until they were permitted to enter the desired ICP/LCS. In the areas close to ICP/LCS, queue of thousands of trucks could be seen waiting. This in turn was resulting in massive traffic congestion on the narrow approach road in the vicinity of custom notified area. The date and time of export was uncertain and exporters had to bear huge expenditure on transport, parking, detention and transshipment. The vicinity of custom notified area was in a total chaos and various malpractices had crept in among the people involved in the process of export. The export, despite the best efforts, could not be scaled up by the stakeholders.

The process flow includes:

- The entire process was manual and time consuming.
- All cargo trucks used to come to ICP/LCS and manually collected Parking Pass/ Serial number on a first come, first serve basis.
- Vehicles were allowed to enter customs notified area according to parking pass/serial number.
- All procedure inside ICP/LCS undertaken by different agencies were manual.
- Unstructured queue on both sides of the road near ICP/LCS.
- Long and uncertain detention period at various parking zones outside ICP/LCS due to various malpractices being done by various interested groups.
- Massive traffic congestion on the narrow approach road in the vicinity of custom notified area.
- Date and time of export was uncertain.

- Huge financial burden on exporters due to long waiting, detentions and other such practices.
- Complete chaos at all ICP/LCS.
- Various malpractices by the people involved in the process of export.

Issues Identified

- Detentions Up to 40/45 days
- No certainty of date of export
- Queue Controlled by Local Groups/Cartels
- No Inter communication between agencies
- A complete chaos at land Ports



<image>

Stakeholders:

Government Agencies

- Land Ports Authority of India (LPAI)
- Indian Customs (CBIC)
- Border Security Force (BSF)
- Central Warehousing Corporation (CWC)
- Police
- Transport Department

Private Agencies

- Custom House Agents (CHAs) Association
- Exporter Association.
- Transporters Association
- Truck owners Association

- Loading and Unloading Labor Association
- Drivers Union and Local Residents

Problems in the manual process

- Unstructured Queues
- Long waiting Periods, Detentions Up to 40/45 days
- No certainty of date of export
- Huge financial burden on exporters due to waiting, Detentions and other such practices
- Quality degradation of Goods and Damaged Goods
- Queue Controlled by Local Groups/Mafias
- Repeat of Process by different agencies
- Complete chaos at land Ports due to above mentioned points

Planning of the New Project/System

Many meetings were arranged with the stakeholders for understanding the process of different agencies and identification of problems. Online software was planned for slot allocation. It has been decided that digitization of all entries will be done and paperless procedure would be adopted. All stakeholders will be connected through dashboard for ease of working. All relevant information will be pushed to all stakeholders in their dashboard prior to their actual handling and dealing with the case in order to ensure minimum time is taken.

Objectives and Scope of the Project

Main objective of the project is to facilitate the trade and maximize the overall export. The date of export was uncertain. Average delay was approximately 45 days. Objective of Suvidha is to facilitate for quick clearance and smooth movement of vehicles at various ICPs and to make the Cross-border movement easier and less time-consuming.

There is a scope to develop a platform where exporters can book slots on preferred date through web portal. Digitization of all entries will be done and paperless procedure would be adopted. All stakeholders will be connected through dashboard for ease of working. All relevant information will be pushed to all stakeholders in their dashboard prior to their actual handling and dealing with the case in order to ensure minimum time is taken. Following are the details of APIs for Integration:

• Integration with GRIPS.

- Integration with SMS and Email services.
- Integration with Vahan and Sarathi database.
- Integration with API Setu.
- Integration with ICE GATE software.
- Integration with Boom Barriers.
- Integration with ANPR cameras.
- Integration with FASTag.
- Integration with online Car Pass system.

The redesigned Process and the Role of ICT

Manual procedure has been replaced by **Online Slot Booking Facility** the chaos and malpractices has come to an end. The overhead cost on transportation of trucks has reduced. The uncertainty of the date and time of export has gone and detention period become zero. Uses of Hard copies of documents removed, in its place Suvidha links all stakeholders with dashboards, by using dashboards stakeholders are now able to access the required data instantly which reduce the time of operation. Using its Notification Process Suvidha also shares real time status of the vehicles to the exporters/CHAs/Drivers. Digitisation of all entries done and paperless procedure adopted. Round the clock Control Room with a Dedicated Helpline has also been introduced to address and provide quick redressal of problems

Following are the processes that were re-engineered:

Slot Booking Process: Earlier, to receive a serial for the movement of vehicle, the vehicle was first required to be present physically in the parking area near customs notified zone on a first come, first served basis. After the implementation of Suvidha, this process is re-engineered by using online slot booking.

Document Verification Process: Previously, Serial slip,

Driving License and other relevant documents were physically required for the entry of vehicles into the Customs Notified Area for export. At present, this process is re-engineered by using Suvidha dashboards for LPAI, BSF, etc. Now details of validity of Vehicle Registration and Driving License of drivers are directly fetching from centralized *Vahan* and *Sarathi* database.

Notification Process: The manual system lacks a notification system. A new feature is added into the Suvidha vehicle facilitation system where, SMSs notification are being sent to the Exporters, Customs House Agents (CHA) and Drivers after completion of each and every stage of operation inside ICP/LCS till returning of the empty truck from Bangladesh.

Role of ICT

ANPR cameras, CCTV cameras, Boom Barriers and other state-of-art equipments have been introduced for greater surveillance, access control of trucks, better traffic management, quick and seamless clearance of vehicles, reducing time of operation and synchronization amongst different stakeholders.



Process Flow after GPR

- Exporters register themselves by using a valid Importer -Exporter Code only through this portal.
- Exporters book their slots online on preferred dates.
- Generates Suvidha Pass online.
- Vehicle report to entry point of ICP/LCS as per the date of booked slots.
- All documents viz RC of the vehicle, license of driver and Aadhaar of khalasi already available at dashboard of BSF. This software is also linked to Vahan portal and all motor

vehicle documents are automatically verified by the Vahan in Suvidha software to avoid any manual intervention by any agency.

- Vehicles having any issues with respect to any papers of truck, driver and khalasi are made to stand at segregation area close to in gate for greater scrutiny thus allowing constant/unhindered move of line of trucks.
- On scrutiny a click by BSF data operator, the vehicle enters and report for weighment.
- SMSs are sent to the Customs House Agent (CHA) and Exporter after each and every stage of operation inside ICP/LCS till returning of the empty truck from Bangladesh.

What is the change/Transformation?

SUVIDHA facility has transformed the cross-border movement of goods between India and Bangladesh by bringing in all the concerned agencies under one roof and thus substantially organising the processes. Cross-border movement has become easier and less timeconsuming.

Online, systematic and automated support facilities comparable to international standards have been introduced. All stakeholders are connected through dashboards. ANPR cameras, viewing cameras, boom barriers and other state-of-art equipments have been introduced for greater surveillance, access control of trucks, better traffic management, quick and seamless clearance of vehicles, reducing time of operation and synchronization amongst different stakeholders. Round the clock **Control Room** with a Dedicated Helpline has also been introduced to address and provide quick redressal of problems.

The manual process is now replaced by automation process and Online Booking of Slots on Preferred Dates in a Web Based Solution enhanced the transparency of the system. Exporters now be able to view the details of the available empty slots of upcoming days. Contact Free and seamless Movement of Vehicles at all checking Points has enhanced the quality-of-service delivery. This facility has also created significant time and cost-saving impacts to the beneficiaries involved in international trade. Exporters can now ship the goods in a single day, which used to be about 40-45 days causing enormous losses in terms of both time and money. Exporters can now save a significant amount of time and cost related to storage, parking, detention, and transshipment. It facilitates the growth of export volume for the exporters. Awareness is generated among all stakeholders through offline and online training.

Average cost for making a complete transaction before GPR was Rs. 70000 and now it has become Rs.3000 – 10000 depending upon the category of the cargo.

Implementation Processes

- Gap analysis in existing process
- Gathering data for requirement analysis
- System Feasibility analysis
- Process flow creation for development of new application
- Introduction of new policies and Publishing of Government Orders
- Starting Pilot using Chassis for ICP Petrapole
- Taking feedback from all stakeholders for final development

Initially it was developed for ICP Petrapole. Subsequently, this facility was extended to five other ports. Each ICP has its own features due to its nature of trade. Currently Suvidha is running at ICP Petrapole, ICP Ghojadanga, ICP Mahadipur, ICP Hili, ICP Changrabandha and ICP Fulbari.

Constraints and Challenges Faced and Overcome

All activities of different agencies were running as stand-alone components. It's very difficult to bring all the agencies under the same umbrella, though the same was done after series of meeting and discussions with them. Their process was discussed in detail and the same was incorporated while preparing the solution. Another challenge is sharing of data among agencies; the lower functioning has a huge rigidness for the same. However after intervention of the appropriate level it was made possible. Some data from the Indian Customs are yet to be received to make the process completely automatic. Another constraint was the local interested groups, they were dealt with discussions and firmness.

Impact of the Project-Tangible/ Intangible (with data), Social Impact

Exporters are now able to maintain their commitments to the importers, capital blockage due to waiting of vehicles with loaded goods minimized which improved cash flow of business. Exporters are now able to operate their business in pre-planned way. Transporters, vehicle owners and drivers are now getting multiple trips in a month as total time to complete the export process is reduced. Custom House Agents (CHAs) are now getting more consignments

as overall export volume has increased. Traffic Management around the custom notified areas has improved considerably. Buyers are also happy now, as cost of goods reduced significantly. A positive response is received from all stakeholders as the aspirations are met and the trust and confidence in the new system is appreciated.

Till now approximately Rs 340 Cr has been deposited in Government Treasury as Suvidha facilitation fee. Government of West Bengal has spent Rs 40 Cr from this fund for both welfare as well as infrastructural development of the local area and people in and around custom notified areas. More welfare projects are under process.

	Post-SUV	/IDHA	Pre-SUVIDHA		
ІСР	Per Day	Waiting	Per Day	Waiting	
	Export	Period	Export	Period	
Petrapole	400-450	0-1	300-350	40-50	
Ghojadanga	350-400	0-1	250-300	60-70	
Mahadipur	400-450	0-1	300-350	40-50	
Hili	150-200	0-1	120-150	30-40	
Changrabandha	350-400	0-1	300-350	40-50	
Fulbari	150-250	0-1	075-125	30-40	

Comparison of Per Day Export and Waiting Period

Comparison of Average cost for making a complete transaction

	Post-SUVIDHA	Pre-SUVIDHA		
ICP	Average cost for making a complete transaction	Average cost for making a complete transaction		
All ICPs	Rs. 3000 – Rs. 10000	Rs. 70000		

Before implementation of Suvidha facility vehicles of other states were facing enormous difficulties due to long waiting periods. Now as waiting period reduced, vehicles of other states are also export their vehicles directly in place of transhipments.

Dashboard Statistics	Ge	General Goods (Gate One) Search By Vehicle Number Enter Vehicle Number					٩
	#	Vehicle	ID.	Exporter	Consignment	Driver	Action
Gate One General Goods	1	WB512914	54702	<pre>>> M/S. MANJEET COTTON PVT. LTD. >> 9434633737</pre>	Type : Non Perishable Goods : Goods Vehicles (up to 04 Wheelers)	>> GOPAL PAUL >> 9332627638	Move to Parking
Chassis				Ref. : OTH2303041944432904422856	>> 2023-03-07		Enter remarks, if any
Gate One LIVE	2	NL01K4342	54701	>> ISPAT UDYOG >> 9831920537	Type : Non Perishable Goods : OTHERS - Non Perishable (14 Wheeler	>> UMESH YADAB >> 8274026295	Move to Parking
			Ref.: OTH23030421192018444231775	to 18 Wheeler)		Remarks : Enter remarks, if any	
				>> 2023-03-07			
	3	WB76A2093	54700	>> EMAMI PAPER MILLS LTD. >> 8768891888	Type : Non Perishable Goods : OTHERS - Non Perishable (06 Wheeler to 12 Wheeler)	>> AJIZUL MALITA >> 8514920028	Move to Parking
				Ref. :			Remarks : Enter remarks, if any
			OTH23030417582215444219873	>> 2023-03-07		· · · · ·	

Long Term Significance

Average cost at all ICPs for one transaction reduced from Rs 70k-100k (approx.) to 3k-10k. The export release time is reduced significantly, at ICP Petrapole, it shows most significant improvement of 72 percent from 50:59 hours in 2022 to 14:06 hours in 2023 as per the Multi-stakeholder Committee Report on Export Release Time after Customs Formalities, prepared by Central Board of Indirect Taxes and Customs, Department of Revenue, Ministry of Finance, Government of India. The Suvidha Vehicle Facilitation System is in line with the national priorities of the Government of India, such as:

- Improving ease of doing business in India.
- Promoting and improving cross-border trade.
- Development of the country's infrastructure.
- Encouraging digitalization and automation.

Future Roadmap

- Stakeholders of other side of the ICPs (Bangladesh Land Port Authority (BLPA), Border Guard Bangladesh (BGB), Bangladesh Customs, etc.) are to be included
- Exchange of information with Customs EDI portal is required to facilitate more singlewindow activities which will help reduce the time taken for submission of EGM.
- Integration of online car pass facility
- Parking and Goods unloading Capacity of other side of the ICPs are required to be increased

Jhar-Jal - Transformative Impact in Service Delivery and Community Development

Introduction

Ankita Mahato, a resident of Saranda Forest, faced a non-functional hand pump and decided to take action. She dialed 1800-3456-502 and registered her complaint about the hand pump. Within a remarkable 30 minutes of registering her grievance, a technical team equipped with a hand pump repairing van arrived promptly and fixed the issue. Her drinking water problem was resolved within the stipulated time, without any delays or complications. This miraculous outcome was made possible by the web-based Jhar-Jal portal, an initiative undertaken by the Drinking Water & Sanitation Department (DWSD), Government of Jharkhand, aimed at providing a citizen-centric grievance redressal mechanism for assured service delivery.

The Jal Jeevan Mission, inaugurated by the Hon'ble Prime Minister on August 15, 2019, has the noble objective of providing every rural household with a Functional Household Tap Connection (FHTC) by 2024, aligning with the commitment to achieve Sustainable Development Goal (SDG)-6. The mission's primary focus is on ensuring assured service delivery of water supply with specified quality standards (Bureau of Indian Standard - BIS-10500) and adequate quantity (55 Litres Per Capita Per Day - LPCD).

The Drinking Water and Sanitation Department, Government of Jharkhand, is actively implementing the Jal Jeevan Mission in partnership with the Ministry of Jal Shakti, Government of India, with the goal of providing FHTCs to 61.20 lakh rural families in a mission mode.

To monitor the progress of the Jal Jeevan Mission and ensure equitable and efficient water supply to all rural families in the state, a robust web-based grievance redressal mechanism equipped with emerging technologies was essential. This initiative reflects the government's commitment to fulfilling the mission's objectives and delivering essential services effectively and efficiently to the citizens of Jharkhand.

Challenges Before the Jhar-Jal Initiative

The absence of a comprehensive, robust, and transparent system for addressing grievances was a significant challenge in the past. Citizens had to navigate through multiple levels, including Panchayat, Block, District, and State, to register their complaints, causing considerable inconvenience. Unfortunately, sustainable and citizen-friendly solutions to these grievances seemed like a distant dream, particularly in remote areas and hard-to-reach Left-Wing Extremism (LWE) affected regions.

Furthermore, there was no efficient tracking system in place, and most records were maintained in random registers, leading to inconsistent follow-up procedures. Consequently, the resolution of these grievances often remained pending for months, leaving citizens disappointed and eroding their trust in the government system. This lack of an effective grievance redressal mechanism added to the challenges faced by citizens, especially in accessing essential services related to drinking water and sanitation.

Assessment of Challenges

According to the National Jal Jeevan Mission report for the period 2021-2022, it is disheartening to note that a mere 1% of grievances related to drinking water were effectively addressed. The 2013 report by IPE GLOBAL highlights a critical challenge faced in Jharkhand, where the presence of Left-Wing Extremism (LWE) significantly hinders the government's ability to deliver services, leading to widespread discontent among the LWE-affected communities. In 2020, the World Bank's findings emphasized the lack of awareness among women regarding poor water quality and its associated health risks, pushing many families into a distressing cycle of poverty. Furthermore, as per the National Family Health Survey for 2020-2021, Jharkhand ranks a concerning 33rd out of the 36 States/Union Territories in terms of accessibility to safe drinking water sources. These observations shed light on the pressing challenges faced by the people of Jharkhand in accessing adequate drinking water services, demanding our immediate attention and the pursuit of effective solutions.



Tap water supply in Khunti



Multi Village Water Supply

In response, the Department engaged in a comprehensive analysis, utilizing the Fishbone diagram methodology pioneered by Kaoru Ishikawa, a renowned Japanese quality control expert, to identify the root causes underlying the problem. This systematic approach enabled DWSD, Jharkhand, to discern the root causes from the mere symptoms of the problem at hand. The potential underlying factors that were unearthed include:

- 1. Geographical Inaccessibility.
- 2. Absence of an efficient grievance redressal system.
- 3. Adhoc monitoring practices.
- 4. Inadequate planning.
- 5. An unreliable water supply system, including concerns over water quality.
- 6. Actions not aligned with Sustainable Development Goals (SDGs) or lacking resilience to climate challenges.

Based on the problem analysis, the Drinking Water Sanitation Department (DWSD) in Jharkhand took a significant step by launching the Jhar-Jal Portal on December 23, 2021. One of the key components of this portal is a web-based grievance redressal mechanism. This initiative represents a

dedicated effort to address the identified challenges and enhance the accessibility and quality of drinking water services in the region.

Stakeholders Analysis

Inspired by the African proverb that wisely states, "If you want to go fast, go alone. If you want to go far, go together," the Department undertook a comprehensive exercise to identify and engage stakeholders in the effective implementation of the Jhar-Jal portal. This systematic approach involved mapping out key individuals, groups, and organizations with vested interests in the initiative. The Department assessed their needs, expectations, and potential contributions to address identified root causes and implement effective solutions.

The stakeholders identified include:

- 1. 29,595 JalSahiyas, covering 1.24 lakh habitations.
- 2. 4,387 Mukhiyas and PRI Members.
- 3. 62 lakh families and 3.15 crore citizens.
- 4. 24 districts and 263 blocks.

Based on this stakeholder analysis, the Department considered several probable alternatives:

- I. Maintaining the Status Quo.
- II. Establishing Flying Squads.
- III. Deploying Static Teams at Strategic and Remote Locations.
- IV. Implementing Manual Tracking with Dedicated Teams.
- V. Adopting an IT-Enabled, Integrated, and Comprehensive System.

The Department evaluated these alternatives using the following criteria:

- I. Equity Ensuring fairness and impartiality in service delivery.
- II. Effectiveness The ability to achieve the desired outcomes.
- III. Citizen-Centric Solution Prioritizing the needs and expectations of citizens.
- IV. Emerging Technology Leveraging cutting-edge technology for efficient solutions.
- V. Sustainability Ensuring the long-term viability and impact of the chosen approach.

By considering these criteria, the Department made informed decisions to establish an inclusive,

efficient, and technology-driven system that aligns with its

commitment to serving citizens effectively and equitably.

Implementation of Jhar-Jal Portal

Operated by the Programme Management Unit (PMU) of the Department, the Jhar-Jal grievance redressal mechanism offers multiple modes (toll-free number - 1800-3456-502, Mobile App, Jhar-Jal Portal - jharjal.jharkhand.gov, WhatsApp - 947017690, and Email callcentredwsd.jharkhand@gmail.com) through which citizens can register their grievances concerning water and

sanitation issues. These grievances are then addressed within a stipulated time frame.

The system includes an automatic SMS alert mechanism, notifying the relevant authorities about the grievances registered by complainants. Simultaneously, complainants themselves receive SMS notifications, informing them about the authorities responsible for handling their registered grievances.

State and district-level officials have access to the GIS locations of complainants, enabling a precise understanding of the geographical context of each grievance. Complainants can also track the status of their grievances' redressal.

Senior officials at both the state and district levels actively monitor the grievances to ensure timely resolution in a sustainable manner. They take appropriate actions based on the data generated by the Jhar-Jar Portal, contributing to efficient and effective service delivery and governance in the field of water and sanitation.

Jhar-Jal Portal has the following Key Features:

The Jhar Jal portal is a Real-Time Web-Based GIS-Enabled Multi-Modal Citizen-Centric Grievance Redressal and Service Delivery System, offering a range of key features and benefits:

- I. **Real-Time Complaint Monitoring:** Complaints are monitored in real-time, triggering immediate alerts to officers for prompt attention. The complainant is kept informed throughout the process.
- II. GIS Mapping of Water Sources: All water sources, including handpumps, are mapped on GIS, enabling efficient asset management, reducing response time, and eliminating duplicity in the planning process.



III. **Paperless Approach:** The entire process operates in a paperless manner, eliminating bureaucratic obstacles.

IV. **Centralized Database:** The portal maintains a centralized database with comprehensive dashboards at all levels, from the state to panchayats.

V. **Data Analytics Tools:** Data analytics tools generate periodic graphical reports to support decision-making.

VI. **Hassle-Free Public Services:** The system is designed to provide hassle-free public services to citizens.

Solar powered water supply scheme with Remote Monitoring System

VII. **Capacity Building:** Capacity building of all stakeholders, including over 29 thousand Jaldoots, plumbers, engineers, and officials, is conducted through Jhar-Jal.

VIII. **Information Education and Communication:** Strategic planning and implementation of Information Education and Communication initiatives are carried out through Jhar-Jal.

- IX. **Resource Allocation:** Allocation of resources for Operation and Maintenance, as well as convergence with other departments like rural development and Panchayati Raj, is facilitated through Jhar-Jal.
- X. Incentive Management: Even incentives for Jal Sahiyas based on their performance are managed through Jhar-Jal.
- XI. **Predictive Analysis:** Predictive analysis, particularly in terms of water table predictions in drought-prone areas, is a feature of the app.
- XII. **Robust Planning:** Various types of data analytics and mapping tools enable robust planning, contributing to effective decision-making processes.

Overall, the Jhar Jal portal serves as a comprehensive and efficient platform for managing water resources, addressing grievances, promoting transparency, and facilitating data-driven decision-making in water supply and management.

Use of Emerging Technology:

- I. Leveraging the Internet of Things (IoT) for real-time monitoring of water supply scheme performance, ensuring efficient and responsive management of water resources.
- II. Integrating Artificial Intelligence (AI) and Machine Learning (ML) for enhanced administration and informed decision-making, leading to more effective planning and resource allocation.
- **III. Utilizing Geographical Analysis and Presentation** with geo-tagging of all assets to provide a clear and visual representation of water infrastructure, aiding in better asset management and resource optimization.
- **IV. Harnessing Drone Technology** for mapping water sources and levels, especially in remote and inaccessible areas, enabling a comprehensive understanding of water resources.

- **V. Implementing robust Cybersecurity** measures to safeguard data, ensuring the confidentiality, integrity, and availability of critical information.
- **VI. Employing Datafication** techniques for seamless data transfer and presentation, facilitating the efficient exchange and interpretation of data.
- **VII. Leveraging High-End Computing**, including Cloud Computing, to achieve comprehensive computerization of all assets, enhancing scalability and accessibility while optimizing resource utilization.

Software and Privacy Issues:

- I. The Jhar-Jal Portal leverages cutting-edge technology, including **Geo Referencing**, **Geo Stamping**, and **Advanced Technology**, to enhance its functionality and efficiency.
- II. The system is constructed with **Visual Studio and .Net Framework** at the Front End, while the Back End utilizes MS SQL Server 2012. The entire application is securely hosted on the State Data Center.
- III. Robust Data Privacy and Security: The Jhar-Jal Portal employs advanced protection measures against Ransomware and utilizes Deep Learning Malware Detection to proactively mitigate potential risks, ensuring robust data privacy and security.
- IV. **Device Data Safeguarding**: Data stored on devices accessing the application is protected by a centrally managed disk encryption solution, ensuring its safety and security.
- V. **Multifactor Authentication:** To bolster security measures, the Jhar-Jal Portal utilizes Multifactor Authentication Methods, including Passwords, One-Time Passwords (OTPs), and CAPTCHA.
- VI. **Restricted Access:** Access to the Jhar-Jal Portal is strictly limited to Registered Users with Verified Contact Information, adhering rigorously to the privacy policies established by the State Data Center.

VII. **Data Masking Techniques:** To enhance data security, the portal employs Data Masking techniques, which involve replacing, encrypting, and scrambling Original Data. This ensures that sensitive information remains protected and inaccessible to unauthorized individuals.

These comprehensive security measures demonstrate the commitment of the Jhar-Jal Portal to safeguarding data and ensuring the privacy and security of its users and stakeholders.

Impact of Jhar-Jal

Through the Jhar-Jal web portal, a series of effective and measurable results have been achieved, demonstrating a profound commitment to Sustainable Development Goals (SDGs) and enhancing various aspects of service delivery:

- I. Enhanced Grievance Redressal: An impressive 93% of grievances have been successfully addressed, significantly improving the ease of living for citizens. This remarkable achievement reflects a deep commitment to achieving the SDGs. District-wise data on grievance redressal is provided below for reference.
- II. Data-Driven Resource Management: Empowered by predictive analysis, data-driven hydromorphological planning has ushered in a new era of resource management. This approach optimizes water distribution, leading to more efficient utilization of resources.
- III. Accountability and Transparency: Over 52,000 department personnel are now held accountable for their actions and decisions, shining a light on transparency and good governance practices.
- IV. Inclusivity in Service Delivery: The digital platform has extended the invaluable gift of safe drinking water to 32 Particularly Vulnerable Tribal Groups (PVTGs), promoting inclusivity in service delivery.
- V. Impact in LWE Affected Areas: The far-reaching impact of Jhar-Jal has reached 19 Left-Wing Extremism (LWE) affected Aspirational districts, as classified by NITI Aayog, contributing to development in these challenging regions.

- VI. Empowering Women: With a genuine commitment to gender equity, 147,975 women in 29,595 villages have been empowered through skillful training initiatives, furthering the cause of gender equality.
- VII. **Inspired Leadership:** Pioneering a transformative role, 63 JalSahiyas and Rani Mistri have risen to become elected Panchayati Raj Institution (PRI) members, illuminating the potential of inspired leadership within the community.
- VIII. Exemplary O&M Practices: The exemplary Operation and Maintenance (O&M) practices implemented through Jhar-Jal have earned PRI members the prestigious President's award, showcasing their dedication to excellence.
 - IX. Efficiency and Timeliness: A testament to the efficient utilization of time and resources, the response time to address grievances has been significantly reduced, from months to less than 48 hours. This achievement underscores the transformative potential of emerging technology combined with strategic wisdom.

These outcomes not only reflect a commitment to improving the quality of life and governance but also demonstrate the transformative impact of the Jhar-Jal initiative in multiple dimensions of service delivery and community development.

Lessons Learnt

The adoption of various innovative practices to ensure effective and efficient service delivery represents a remarkable transformation. These lessons learned can be summarized as follows:

I. Enhancing Quality of Life: Prior to the digital intervention, residents in villages and other areas had to physically visit state authorities to report complaints related to water and sanitation issues. This manual process posed challenges in tracking complaints and often left many issues unresolved. However, with the digital intervention, citizens can now directly report complaints to the department or administration through this digital platform. This has led to the establishment of a comprehensive database of all complaints, facilitating easy tracking and reference. It has also streamlined the follow-up process, allowing the administration to efficiently address complaints, saving time and effort for both citizens and officials.

- II. Proactive Measures: By analyzing data collected from various villages and regions, the administration can proactively identify patterns and address potential issues. For example, based on data depicting complaints related to "Water Level Decrease," the administration can take preventive measures to ensure water levels are adequately maintained in the future. This strategic approach helps reduce the burden of future complaints and enhances overall service delivery.
- III. Fostering Transparency for Good Governance: The digital platform promotes transparency in the complaint resolution process. In the case of schemes under operation and maintenance (O&M), the department or administration issues orders to the responsible agency or contractor to address reported complaints. This transparent approach holds the responsible parties accountable for resolving complaints in a timely manner, thereby promoting good governance practices.
- IV. Inclusive Service Delivery for Safe Drinking Water: The digital platform has enabled inclusive delivery of safe drinking water to diverse populations, including predominantly tribal-populated areas, Left-Wing Extremism (LWE) affected regions, marginalized communities, and others. The goal is to ensure that all citizens in rural areas have access to quality drinking water, regardless of their location or socio-economic background.



District wise progress of grievance redressal



Categories of grievances

Furthermore, the adoption of e-Governance, particularly through the prompt resolution of grievances, has instilled a sense of urgency in providing effective services in the Water and Sanitation sectors. This responsive approach has significantly boosted community faith in the government system, fostering a sense of trust and confidence in public governance.

Benefits of Jhar-Jal

The Department has undertaken significant measures to enhance the accessibility of the Jhar-Jal portal, particularly by improving the grievance redressal mechanism to reach previously underserved populations. These measures include:

I. Awareness Improvement: Extensive Information Education and Communication (IEC) efforts, such as pictorial wall paintings in villages and video messages shared through social media platforms like WhatsApp, Facebook, and Twitter, have been employed to create widespread awareness, with a special focus on marginalized communities and areas affected by Left-Wing Extremism (LWE).



- II. Enhanced Technology Accessibility: The improved technology introduced by the Jhar-Jal initiative is now accessible to the rural population of Jharkhand. Complaints can be registered effortlessly Water testing facility through the toll-free number, Jhar-Jal portal, mobile app, or by visiting local field offices.
- III. Seamless Complaint Registration: The Jhar-Jal platform facilitates seamless registration of complaints from anywhere and at any time through its portal and mobile app, making it easier for underserved populations to access and utilize the service.
- IV. Cost Reduction and Improved Service Delivery: The Department of Drinking Water and

Sanitation, Government of Jharkhand, has taken a significant step in empowering rural communities by introducing the "Jhar-Jal App" for complaint registration. Residents in rural areas can now easily lodge their grievances through this user-friendly mobile application. Additionally, complaints can also be registered through the Grievance Redressal Cell's toll-free number - 1800-3456-502 and the WhatsApp number - 9470176901. The implementation of Jhar-Jal initiatives has brought about substantial benefits to rural areas by streamlining various processes and significantly reducing associated costs. By replacing manual procedures, paperwork, transportation, and



Water quality testing by Jalsahiya using Field Test Kit (FTK)

postage, these initiatives have achieved remarkable efficiency gains, leading to enhanced service delivery for the communities and improved livelihoods for villagers in rural regions.

- V. **Sensitization Workshops:** Sensitization workshops have been conducted for field functionaries, including members of Panchayati Raj Institutions, Jal Sahiyas, community leaders, and others. These workshops equip them with the knowledge and tools to effectively address water-related concerns raised by underserved populations.
- VI. **Paperless and Digital Record-Keeping:** Jhar-Jal promotes paperless and digital record-keeping, documentation, reporting, and quick exchange of information among functionaries. This streamlines processes and facilitates the timely resolution of complaints.

- VII. **Real-Time Monitoring and Resolution:** The platform enables real-time monitoring of complaints and their prompt resolution, ensuring that issues such as water leakages, water quality concerns, and sanitation problems are addressed promptly, leading to improved service quality for underserved populations.
- VIII. **Communication and Community Mobilization Activities:** A range of IEC activities, including Nukkad Nataks (street plays), wall paintings, hoardings, posters, school competitions, and more, have been conducted to raise awareness and disseminate information about the service to underserved populations.
 - IX. Geo-Tagging for Quick Asset Identification: Utilizing GIS technology, Jhar-Jal facilitates the quick identification of water assets and schemes like Single Village Scheme (SVS) and Tube-wells, helping address issues more efficiently in previously underserved areas.
 - X. **Transparency and Evidence-Based Planning:** The data generated by the Jhar-Jal initiatives enable evidence-based planning and intervention in the water sector, leading to more transparent and effective service delivery to underserved populations.

Upon examining these initiatives, it is evident that the Jhar-Jal initiative has empowered communities to receive services and address water and sanitation grievances promptly through the use of technology, awareness campaigns, and community engagement. This web-based grievance redressal mechanism has revolutionized water management practices, resulting in significant cost reductions, improved service quality, and increased accountability within the sector.



Spot study of Jhar-Jal by National level team

Collateral Benefits

Jhar-Jal has facilitated effective water supply management for both the Department and communities, with several crucial aspects being highlighted:

- I. **Remote Monitoring System (RMS):** Solar-based schemes have been equipped with Remote Monitoring Systems (RMS), enabling the continuous monitoring of scheme performance, as well as the quantity and quality of supplied water through the Jhar-Jal portal. The data obtained from RMS plays a pivotal role in managing greywater and ensuring water quality.
- II. Wastewater Management: Jhar-Jal empowers citizens to manage wastewater effectively. Water leakages are promptly addressed within the stipulated time frame through the Jhar-Jal system.
- III. GIS-Based Asset Mapping: The Jhar-Jal portal has significantly improved efficiency and accuracy by allowing the Department to map water supply assets using Geographic Information Systems (GIS). This mapping capability proves invaluable in the decision-making process.
- IV. Transparency and Accountability: Through the implementation of Jhar-Jal, a transparent system has been established, fostering trust within communities. Issues related to water quality, water supply, sanitation, and tap water connections are promptly and transparently addressed, ensuring timely resolution.

Third Party Evaluation:

The Jhar-Jal Portal has undergone third-party assessments by esteemed institutions and organizations, each offering valuable insights into its merits and impact.

- I. The World Bank has commended the Jhar-Jal portal as a "Citizen-friendly and Transparent" initiative.
- II. IIT Kharagpur has acknowledged the Jhar-Jal portal as a "Transparent and Data-driven" endeavor.

- III. The National Informatics Centre has lauded Jhar-Jal as a "Paperless, Effective, Transparent, and Efficient" initiative undertaken by the Department.
- IV. UNICEF has recognized Jhar-Jal as an integral web-based approach that brings about "Improved Water Supply and Impactful" outcomes.
- V. The Nudge Institute, in its assessment, has described Jhar-Jal as a "Participatory and Empowering" tool for fostering good governance and enhancing the lives of a broader populace.
- VI. Birla Institute of Technology, Mesra, Ranchi, has characterized the Jhar-Jal App as a "Technologically Robust, Efficient, and Noble" initiative geared towards delivering citizencentric assured services.
- VII. The Transforming Rural India Foundation (TRIF) has affirmed that the Jhar-Jal initiative demonstrates a commitment to harnessing emerging technologies for the betterment of society and enhancing the well-being of citizens.

Replicability and Way Forward

The Department of Drinking Water & Sanitation, Ministry of Jal Shakti, Government of India, has placed significant emphasis on the establishment of a technology-driven grievance redressal mechanism to ensure reliable service delivery under the Jal Jeevan Mission (JJM). The initiative known as "Jhar-Jal" has been identified as a national priority within this context, with the primary objective of guaranteeing timely resolution of grievances to enhance the efficiency of service delivery. It is worth noting that the Jhar-Jal approach exhibits the potential for replication in various sectors within developing countries.

- I. The Jhar-Jal approach to Grievance Redressal Management, characterized by real-time monitoring and citizen-centric services, has the potential for widespread adoption across all departments of both Central and State Governments.
- II. The successful implementation of Jhar-Jal can serve as an inspiring model for similar initiatives in the healthcare sector, including endeavors such as Anaemia Tracking, Maternal and Child Health Care, and Health Care Assets Management.

- III. The utilization of GPS-enabled technology, as exemplified by Jhar-Jal, can play a pivotal role in Geographic Information System (GIS)-based Public Distribution System (PDS) delivery, thereby facilitating more effective prevention of pilferage and enhancing food security measures.
- IV. The valuable experience gained from Jhar-Jal's implementation can be leveraged in the education sector to monitor aspects such as teacher and student attendance, infrastructure assessment, resource management, and the efficient administration of Mid-Day Meal schemes.
- V. In the realm of social welfare, Jhar-Jal's impactful initiatives can serve as a catalyst for the adoption of similar approaches aimed at ensuring access to proper nutrition, tracking malnourished children, and promoting the overall well-being of adolescent girls and pregnant women.

Jan Sahayata Koshang - Bringing People Closer to Administration

Introduction:

Jan Sahayata Koshang or Public Help Cell is a grievance redressal mechanism introduced in the West Singhbhum district in September 2022 to address and resolve the problems faced by the common people in a timely manner. It is a simple but an effective method to improve the accessibility of district administration to the people as they are just a phone call or a *WhatsApp* text away. More than 4500 grievances have been resolved since the inception of the initiative. The initiative is implemented by Digital e-Governance Society with fund of Rs. 1,50,000/- only. It can be easily replicated in other districts as well. The district administration has been receiving inquiries in this regard from other districts.



Need of the initiative

West Singhbhum is one of the largest districts in Jharkhand where some of the blocks like Manoharpur is as far as 130 km from the district headquarter Chaibasa. In addition to that difficult terrain with a lot of forested and hilly areas and effect of LWE influence has made some blocks like Gudri, Tonto difficult to access by the district administration. People have to come from far away to the district headquarter to register their complaints to the Deputy Commissioner on the day of Janta Darbar. This leads to wastage of time and money for the citizens. And on top of that, if they are not able to meet the concerned officer, they have to go back empty handed and disappointed. Thus to tackle this problem Jan Sahayata Koshang was conceptualised.

Implementation Strategy

Extensive departmental meetings were conducted to deliberate on the idea to implement this project. District E-Governance Society was made nodal to develop the plan of action for the implementation of the project. An agency was selected to digitise the project and develop a web portal and mobile application. This agency was also responsible to train the district level officials on this initiative. Many awareness campaigns were also organised at block and panchayat level to educate the people about the initiative. Initially the project was being run by the district administration but looking at the increasing workload a memorandum of understanding was signed between Piramal Foundation and District Administration on 12th April 2023, where a dedicated kiosk has been set up and a team of Karuna fellows were appointed as an interface between the district and district administration to resolve public grievances as well as provide information about government schemes.



Functioning of the initiative

This initiative provides dual interface, one deals with the public and other deals with the district

administration. On the citizen side, it was kept very simple. A mobile helpline as well as a whatapp number are provided to the people to register their grievances. They can also register their complaints by visiting the Jan Sahayata Koshang kiosk and submitting the application to the Karuna fellows. These complaints after being registered are assigned to the concerned department by the Karuna fellows through a web portal. A unique feature of this portal is that it gives option for multiple allotment, if the issue registered was concerned with more than one department. Karuna fellows also play the role of information dissemination about various government schemes and initiatives. After the departmental resolution, the grievances are returned back to the Karuna fellows and the resolutions are conveyed to the public. A feedback and rating is also taken from the beneficiaries and complaints are closed only after their full satisfaction, otherwise it is reassigned to the concerned department.

At the end of district administration, once the grievance is assigned to the concerned department, they have two choices either to provide resolution or to reassign it to the other department, if the grievance is not concerned with their department.

A mobile application is also provided at the perusal of the district official which shows the number of allocated and resolved complaints, average time taken in the resolution, pendency time to monitor the progress on the complaints 24*7. A weekly meeting on every Monday is also conducted under the chairmanship of Deputy Commissioner to monitor the status of the pending complaints and discuss the action taken on them.

Impact of the initiative

• The inception of Jan Sahayata Koshang has led to quantifiable improvement in public



69
grievance redressal, since 25th September 2022, 5369 complaints have been registered on the portal, out of which 5212 complaints are resolved with the full satisfaction of the complainants.

- Digitisation of grievance redressal mechanism has significantly reduced the cost and time for the citizens as they now don't have to travel long distances to district headquarter to register their complaints.
- Improved accessibility and availability of services. For instance, the village of Nawada is situated amidst the dense forests of Porahat, villagers had to travel around 25 kilometers through dense jungle on foot to access the nearest PDS shops. On receiving the complaints from these villagers, an alternative arrangement was made by way of a food distribution camp twice a month in Bhalupani Panchayat Sachivalaya. This initiative benefitted 25 villages of Bhalupani panchayat, where villagers are deprived of monthly food grains.
- Quick turnaround time(<21 days) of resolution has helped the district administration to gain public trust. For example, a complaint regarding the death certificate was registered through the Public Help Cell, which was promptly allocated to the BDO, Goilkera block and resolved within 24 hours.
- This has made the administration empathetic towards the citizen, for example a grievance was registered by a specially abled beneficiary from Khutpani block for the requirement of a wheelchair, which has been resolved within 13 days .
- With 24X7 monitoring and follow up mechanism, transparency and accountability of the departments has been improved.
- Effective rating and feedback mechanism has improved the quality of the resolution provided because citizen satisfaction is the primary objective of this initiative. In fact, many complainants have given written appreciation letters for the resolution provided to them, which is a source of motivation for the district administration to make further improvement in the public service delivery.
- While registering complaints, Karuna fellows also inform citizens about other government schemes and policies beneficial for them, thus increasing the inclusivity of many schemes.



The grievance redressal mechanism of the District Administration is the gauge to measure its efficiency and effectiveness as it provides important feedback on the working of the administration. Information processing is a major activity in Government Departments. Handling Public Grievances is one of those major activities being carried by the District Administration as well as in all Government Departments. Monitoring each and every Grievance with the help of manual systems is time consuming as well as not effective when the Administration needs to obtain certain statistical information related to the Redressal of Grievances. Use of digital technology can help the administration to monitor and resolve the Public Grievances effectively, as is the case with the Public Help Cell (Jan Sahayata Koshang) of West Singhbhum district, Jharkhand, thus upholding the spirit of 'Minimum Government, Maximum Governance.'

The Honorable Prime Minister of India has said "Effective Redressal of Public Grievances" is one of the most important aspects of Indian democracy, accorded highest priority to the subject with focus on citizen engagement. He has focused on improved categorization of grievances – grievances arising out of abuse of office and corruption, grievances arising from systemic deficiencies and grievances arising from poor service delivery; technology adoption in grievance redressal, monitoring and reviews and increased citizen engagement.

Mor Raipur: Harnessing Digital Technologies to Enhance Public Service Delivery

Abstract

The Mor Raipur App is a comprehensive platform that empowers both citizens and municipal officials by enhancing service delivery, revenue generation, and fostering closer engagement with citizens through its multiple modules and features.

The Raipur Municipal Corporation has undertaken a remarkable initiative with an award-winning application that serves the entire municipal community at an exceptional level. This app provides numerous facilities and services for the citizens of Raipur.

Changes have been made to this app according to the needs of citizens from time to time, and new features have been added so that citizens can avail maximum benefits. This also benefits the officials of the Raipur Municipal Corporation, enabling them to directly connect with the public for their convenience

Introduction

The MOR Raipur Smart City Initiative, championed by the Raipur Municipal Corporation (RMC), is a pioneering endeavour to transform Raipur into a technologically advanced and inclusive urban environment through e-governance. This district-level initiative focuses on harnessing digital technologies to enhance public service delivery, promote citizen engagement, and streamline administrative processes.

At its core is the MOR Raipur App, a comprehensive platform that serves as a one-stop solution for residents to access a myriad of city services and real-time information. It facilitates online payment of bills, permits and licenses applications, service request tracking, and offers real-time data on traffic, weather, and public transportation.

A critical facet of the initiative is the digitization of administrative processes, replacing cumbersome paperwork with online applications and digital workflows. Birth and death certificates, property tax assessments, and building plan approvals are now conveniently accessible through the app.

Emphasizing citizen participation, the app incorporates feedback mechanisms and integrates with social media platforms for community-driven initiatives. The initiative enhances decision-making and resource allocation through data-driven insights, employing advanced analytics and predictive modeling for sustainable urban planning.

Accessibility is a priority, with the app designed for diverse demographics, including the elderly and people with disabilities. By revolutionizing public service delivery, fostering citizen engagement, and enhancing governance processes, the MOR Raipur Smart City Initiative envisions creating a smarter and more connected urban experience for Raipur residents.

Through a holistic approach that combines e-governance, citizen-centricity, and data-driven governance, this initiative has reshaped Raipur, making it more efficient, connected, and citizen-centric.

Rapur MOR Raipur Smart City initiative involved a phased approach - typically SMART CATY starting with Property Tax and Grievance redressal system. This is largely because of the vast coverage of the implementation. Comprehensive planning and stakeholder engagement to identify priorities and define project goals The implementation included the development and deployment of the App Integration of various city services, real-time information, and citizen engagement features and User Friendly approach Collaboration between government departments, technology partners, and citizens, and Training and Capacity Building taken-up in a war-footing Continuous monitoring, evaluation, and feedback mechanisms were established to assess progress and make necessary improvements and Creating a cadre of IT staff in municipalities to implement e-Governance

Implementation

Beneficiary of the project:

The beneficiaries of this initiative are categorized as:

- Public : Citizens of RMC
- RMC : Departments, Administration, Officers
- RSCL : Departments, Administration, Officers

Before MOR Raipur

Situation before the initiative:

Inefficient Administrative Processes: The district experienced bureaucratic inefficiencies and lengthy administrative processes. Manual paperwork, long queues, and multiple visits to government offices were common, leading to delays, errors, and inconvenience for residents.

Lack of Information Accessibility: There was a lack of real-time information available to residents regarding traffic updates, weather conditions, public transportation schedules, and other essential city services. This resulted in inefficient travel planning and limited access to vital information.

Limited Citizen Engagement: There was a gap in citizen participation and engagement in the governance processes. Residents had limited channels to provide feedback, suggestions, or voice their concerns, hindering their ability to actively contribute to the development of the city.

Fragmented Service Delivery: Various city services such as permits, licenses, and bill payments were fragmented across different departments and required multiple visits or interactions. This led to confusion, duplication of efforts, and increased costs for both residents and the government.

Need for the transformation

The MOR Raipur App, although a commendable district-level initiative, calls for transformation to continually meet the evolving needs of the city. In the dynamic landscape of technological advancements and changing citizen expectations, this transformation becomes imperative. Enhancing the app's functionality, scalability, and adaptability is crucial to ensure it remains at the forefront of facilitating seamless and inclusive urban governance. The transformation aims to bolster the app's capabilities by incorporating cutting-edge technologies, refining user experiences, and expanding service offerings. Moreover, this evolution will address emerging challenges, foster deeper citizen

engagement, and fortify the platform's capacity to drive innovation and efficiency in urban governance processes.

Significance of MOR Raipur App

The MOR Raipur Smart City App stands as a beacon of innovative urban development, uniquely intertwining technology with governance, citizen involvement, and data-driven strategies. Its exceptional integration of various city services, real-time updates, digital payment options, and personalized alerts within a unified platform defines its distinction. Moreover, the app's commitment to inclusivity, catering to diverse demographics through accessibility features and multilingual support, ensures widespread benefits for all residents. This distinct blend of components marks the MOR Raipur Smart City App's significance in pioneering district-level implementations of smart city initiatives, revolutionizing urban living for the community.



Overview of MOR Raipur App

The MOR Raipur Smart City initiative embodies a meticulous roll-out and implementation model, meticulously designed for transformative urban development. This structured approach commenced with extensive planning and engagement with stakeholders, aligning priorities and delineating project objectives. The pivotal stage involved the creation and launch of the MOR Raipur Smart City App, a central hub integrating city services, real-time updates, and citizen engagement tools. A core principle was fostering collaboration among governmental bodies, technology partners, and citizens, ensuring seamless integration and widespread adoption. Monitoring, evaluation, and feedback mechanisms

formed the backbone, enabling continuous assessment and refinement. The overarching aim of this model was to facilitate a seamless transition towards a smarter city, emphasizing user-centricity, scalability, and sustainability at its core.

Major Features:



Other Features:



Key Features of MOR Raipur App

The MOR Raipur Smart City initiative in e-governance relies on a range of Information and Communication Technology (ICT) solutions to support its digital transformation and service delivery. The following are some key ICT components used by the district for this initiative:

MOR Raipur Smart City App: The district has developed a dedicated mobile application that serves as the primary interface for citizens to access various city services, make payments, receive notifications, and engage with the government. The app is designed for both Android and iOS platforms, ensuring wider accessibility. Few of the innovative apps features include:

Impact of the Mor Raipur App

Some impacts in terms of time and cost savings for the beneficiaries:

a. Reduced Administrative Processing Time: Digitizing administrative processes through the smart city app eliminates the need for manual paperwork and reduces processing time. Residents can apply for permits, licenses, and certificates online, saving time spent on visiting government offices and standing in queues. The app also provides real-time updates on the status of applications, reducing the need for follow-up visits.

b. Convenient Online Payments: The smart city app enables residents to make online payments for various city services such as utility bills, taxes, and fines. This eliminates the need for physical visits to payment centers or writing checks, saving both time and effort.

c. Improved Access to Information: The app provide nearby me services (Parking Lot, Toilets, Sports Complex, Parks, Govt. Office, Hospitals, Play Ground, Museum, Tourist places etc)

The app provides real-time information on traffic updates, weather conditions, public transportation schedules, and other relevant city data. This saves residents time by helping them plan their travel routes efficiently, stay informed about any disruptions, and make informed decisions.

d. Enhanced Service Delivery: By streamlining administrative processes and digitizing service requests, the smart city app enables faster and more efficient service delivery. Residents can submit service requests such as repair or maintenance work through the app, eliminating the need for multiple phone calls or physical visits. This reduces the time taken to address issues and enhances overall customer satisfaction.

e. Cost Savings on Transportation: With the app providing real-time information on traffic conditions and public transportation schedules, residents can plan their travel routes accordingly, avoiding congested areas and saving time spent in traffic. Additionally, the convenience of online payments eliminates the need for transportation costs associated with visiting payment centers or government offices.

Outcomes/Impact



Revolutionizing of MOR Raipur App

The district-level initiative of the MOR Raipur Smart City App revolutionizes urban development by uniquely harnessing technology. It unites e-governance, citizen engagement, and data-driven decision-making, crafting a comprehensive and inclusive smart city experience. The app's fusion of diverse city services, real-time updates, digital payments, and tailored notifications in a single platform is a transformative feature. Furthermore, its dedication to accessibility, multi-language support, and inclusivity ensures universal access, empowering every segment of the populace. This distinct amalgamation of components distinguishes the MOR Raipur Smart City App, marking a revolutionary leap in the district-level implementation of smart city initiatives.

Some of the points are provided below which causes due to the Mor Raipur App the citizens service improvised.

✓ Reduced Cost – Availability of online App and Web based solution of Mor Raipur App has given drastically improvement to citizens lives, by saving more time instead of visiting government departments now a days with the help of the Mor Raipur App the citizen can do their municipal related works such as water Tax, property tax, mutation of property, new water connection etc. at their home or at office in leisure time by suing smart mobile or by laptop / desktop.

- ✓ Time Saving The citizens time is in compare to earlier era has totally improved, and saving much and more time by using smart mobile app and web solutions, all the services are taking genuine to move the documents from one place to another or from department to department in very less time. Quick services are to reach citizens directly without visiting municipal offices.
- ✓ Easy Reach –With easy functionalities have been implemented by smart city Raipur's App Mor Raipur for people, we can see that now a days almost people are having smart phones and they can frequency using the municipal services via mobile. Due to an online solution "May I help you" desk is not in functional in some of the offices by using chat option citizens can raise their queries and they can get their relevant answers.
- ✓ Improved Services The peoples are getting improved services from the municipal offices/departments, services are more improved now due to good initiatives of Raipur smart city Mor Raipur smart App. No table to table visits and no need to spend time for moving the files from one department to other department.
- ✓ Online Payment With the help of Mor Raipur app, citizens can pay their services cost payment online via various modes of transactions such as debit card, credit card, wallets, online banking etc. This facility is available in an easy way without affecting people's daily life and their precious time. This module is also a time saving function that saves peoples time to visit ATM cash withdrawal for giving payment to department for taking government citizen centric services.
- ✓ Data Security it is essential to prioritize the protection of personal information and ensure the privacy and security of citizens' data. Here are some measures that are commonly implemented to address citizens' data security concerns:
 - Secure Authentication
 - Enforcing a password policy
 - Monitoring suspicious activities
 - OTP based authentication etc.

In our application has the following features making the app as secure as possible. Some of the features are listed below:

Conclusion: A Path breaking Initiative in Digital Transformation

The MOR Raipur App is a district-level initiative that aims to transform Raipur into a technologically advanced and inclusive urban environment through e-governance. It focuses on leveraging digital technologies to enhance the delivery of public services, promote citizen engagement, and streamline administrative processes. At the core of the App is the MOR Raipur App, a comprehensive platform that serves as a one-stop solution for residents to access various city services and information. The app provides functionalities such as online payment of bills, applying for permits and licenses, tracking service requests, and accessing real-time data on traffic, weather, and public transportation.

One of the key aspects of the App is the digitization of administrative processes. Traditional manual paperwork is being replaced with online applications and digital workflows and enhancing efficiency. This includes services like issuing and door step delivery of birth and death certificates, property tax assessments, and building plan approvals, which can now be conveniently accessed and processed through the app.

The App also emphasizes citizen participation and engagement.

The app incorporates features for feedback, suggestions, and complaint redressal, enabling residents to actively contribute to the improvement of urban services. It also integrates with social media platforms to disseminate important announcements, updates, and community-driven initiatives, fostering a sense of ownership and collaboration among the citizens.

In terms of governance, the e-governance initiative enhances decision-making and resource allocation through data-driven insights. The app incorporates advanced analytics and predictive modeling to analyze data on various aspects of urban life, including energy consumption, traffic patterns, waste management, and water usage. This enables the government to make informed decisions, optimize urban planning, and ensure sustainable development. The App's district-level focus ensures that the benefits of e-governance reach all sections of the population. The district-level initiative in e-governance through the MOR Raipur Smart City app revolutionizes public service delivery, promotes citizen engagement, and enhances governance processes, ultimately creating a smarter and more connected city experience for the residents of Raipur.

Institution Level Initiative Kerala University

Evolution and Impact of the 'Lucky Bill' App in Consumer Engagement and Fiscal Accountability

The implementation of the Goods and Service Tax (GST) System has brought in opportunities for exploring new areas of focus in Tax administration and Tax compliance. However, since its implementation, the government has grappled with significant challenges like tax evasion. To track and monitor the high-profile tax evasion techniques of the new-generation business community, the State GST Department needs to be equipped to detect and tackle modern evasion tracking and detection systems.

The taxpayers' monitoring and tracking are highly dependent upon the quality and reliability of their business transaction data we have. The government has identified that a big source of



the leakage is business-to-consumer transactions where the last mile invoice is not issued. To develop an effective taxpayer tracking system, we need an alternative data source other than the data provided by the taxpayer. The best alternative data source that the department can rely on is the end customer itself. If we can capture the transaction details from the sale endpoint, we can ensure the quality of the data, and this data will be helpful to the department in detecting and curbing the tax evasion techniques of taxpayers effectively. The Digital University Kerala (DUK) has conducted extensive research on developing a streamlined process for collecting bills from public users or consumers. The primary focus of the research was to ensure a hassle-free experience for the users, where they can easily submit their valid bills without encountering any difficulties. To achieve this, the university has prioritized creating a user-friendly application with artificial intelligence (Lucky Bill App with Machine learning-based Analytical System) that minimizes the need for manual efforts. By implementing intuitive features and user-centric design principles, the application aims to simplify the bill submission process, allowing users to upload their bills with minimal manual intervention effortlessly. This research emphasizes the importance of user convenience and seeks to eliminate any unnecessary complexities or cumbersome steps, ultimately enhancing the overall user experience and reducing the burden of manual efforts.



Tax compliance is a cornerstone of fiscal responsibility in the intricate web of modern economics. To streamline the labyrinthine process of monitoring Business-to-Consumer (B2C) transactions, the emergence of the "Lucky Bill App" marks a pivotal juncture in leveraging technology for enhanced consumer engagement and bolstered tax compliance. In response to challenges within the Business-to-Consumer (B2C) segment of the Goods and Services Tax (GST) framework, the Kerala State GST Department partnered with the Digital University Kerala to develop the "Lucky Bill" App.

This innovative mobile application leverages gamification elements and citizen engagement to tackle tax evasion and promote compliance. The app automatically extracts data from uploaded bill images through Optical Character Recognition (OCR) and machine learning, enabling real-time monitoring and analysis for the department. Consumers are incentivized to participate through a reward system based on lucky draws, fostering transparency and accountability within the tax ecosystem. The initiative has resulted in significant cost savings for officials, increased tax revenue collection, and empowered citizens as active participants in tax compliance. The Lucky Bill App's success demonstrates the potential of citizen-driven solutions in improving B2C tax compliance and paves the way for wider adoption and further development within the GST framework.



The Genesis of an Innovation

In the murky waters of B2C transactions, tax compliance often slipped through the cracks. Sellers dodged proper invoicing, leaving a trail of opaque records and uncollected revenue. Recognizing this critical challenge, the Lucky Bill App emerged as a beacon of innovation. Its genesis sprung from the need to shed light on B2C transactions, leveraging citizen engagement and technology to bridge the compliance gap. More than just an app, it's a testament to human ingenuity, paving the way for a fairer and more transparent tax ecosystem where every bill tells a story of responsibility and progress.

Understanding the Problem Landscape

The Lucky Bill App was born not from a single challenge but from a tangled web of interconnected issues plaguing the B2C tax landscape.

Tax Evasion and Non-Compliance

At its core lay the twin serpents of tax evasion and non-compliance; crafty taxpayers avoided issuing invoices or slithered through loopholes by manipulating tax rates and neglecting to pay or file taxes on their transactions. This resulted in a gaping hole in the treasury, with uncollected taxes bleeding the system dry.

Consumer Reluctance

On the other end, consumers often refrain from requesting bills during B2C transactions due to a lack of incentives or awareness about the implications of non-compliance. Consumer reluctance acted as a stubborn accomplice. With little to gain and much to potentially lose (think time and hassle), many citizens didn't bother asking for bills during B2C transactions. This lack of engagement created a fertile breeding ground for tax evasion, shrouded in a thick fog of unawareness.

Administrative Hurdles

The existing methods employed by tax departments, such as the test purchase process or market intelligence, were resource-intensive and often faced resistance from traders. Additionally, the data available through GSTR Returns/E-way data provided by taxpayers had limitations in ensuring accurate verifications.

In essence, the B2C tax landscape was a labyrinth of interconnected challenges, each one reinforcing the others. To truly tackle these multifaceted problems, a different approach was needed. Enter the Lucky Bill App, a bold innovation designed to shine a light into the darkest corners of this economic maze.

Enter the 'Lucky Bill' App: Transforming the Landscape

The Lucky Bill App, conceptualized as part of the Big Data Analytics Project for the Kerala GST Department, aimed to revolutionize this landscape by leveraging AI, data analytics, and consumer engagement strategies.



Engaging Consumers: A Gamified Approach

At the forefront of its features, the app introduced an engaging incentive for consumers by uploading images of invoices or bills; users could participate with the valid bills in lucky draws, winning

exclusive prizes such as cash rewards. This gamified approach effectively encouraged consumers to request bills during their transactions, fostering a culture of compliance through incentives.

The Lucky Bill App's genius lies in its technology and ingenious understanding of human behavior. At the heart of the app's success is a powerful gamification feature that transforms the mundane act of asking for a bill into an exciting game of chance.

Imagine this: Every uploaded invoice isn't just a piece of paper; it's a golden ticket to a treasure trove of exclusive prizes. Cash rewards, discount coupons, and even bumper prizes become the irresistible bait that hooks consumers into the B2C tax compliance game.

This isn't just a simple points system. The app employs lucky draws, adding a layer of suspense and thrill. Each bill submission becomes a shot at striking it rich, turning bill collecting into a fun and rewarding hobby. This carefully crafted incentive structure subtly shifts consumer behavior, nudging them towards requesting bills without coercion.

The impact of this gamified approach is undeniable. Consumers no longer see bill requests as an inconvenience but as opportunities to win. This cultural shift from obligation to excitement fosters a groundswell of voluntary compliance, making tax collection smoother and more efficient than ever before.

The Lucky Bill App's gamification feature reminds us that engaging with human psychology can be the most powerful tool in promoting positive change. It's a shining example of how innovation and behavioral science can come together to build a fairer and more accountable tax ecosystem.

Seamless Bill Management: The 'Bill Locker' Facility

Recognizing the inconveniences posed by traditional paper-based invoices, especially those prone to fading, the app introduced a "Bill Locker" akin to 'Digi Locker.' This secure digital vault allowed consumers to store their bills securely, ensuring easy access for future warranty claims, service complaints, or other necessary purposes.

AI-Powered Compliance Monitoring: The Role of OCR and Machine Learning

However, the app's significance transcended consumer engagement. Leveraging Optical Character Recognition (OCR) technology powered by machine learning, the Lucky Bill App extracted data from the uploaded bills. This extracted data became a pivotal source for comprehensive analysis to identify tax anomalies or potential evasions.

Implementation Strategy and Stakeholder Collaboration

The Lucky Bill App's successful implementation resulted from meticulous planning and collaboration between Digital University Kerala and the Kerala GST Department. The Memorandum of Understanding (MoU) between these entities laid the groundwork for a comprehensive solution. Moreover, stringent security audits and certifications ensured the app's reliability and trustworthiness, culminating in its placement in the Google Play Store.

Empowering Stakeholders: Addressing Concerns

The app sought to address the concerns of critical stakeholders in the tax compliance ecosystem:

- **Tax Officials:** The app automates data collection and analysis using AI-powered analytics, eliminating the need for traditional, resource-intensive methods like test purchases. This streamlines administrative workflows, improves data accuracy, and empowers officers by relieving them of time-consuming manual tasks.
- **Consumers:** Through gamification and the Bill Locker feature, consumers were empowered to engage in tax compliance effortlessly while securing their transaction records for future use.
- **Taxpayers and Traders:** The app fostered an environment of transparency, ensuring that tax money collected by traders reached the government correctly, mitigating concerns about improper tax remittances.

Alternative Source of Data for Tax Analytics

The captured bill data from the app will serve as an alternative source of information for the GST department, complementing the return data filed by taxpayers and traders. This data will be utilized for tax data analytics, leveraging AI technologies developed by the Digital University Kerala. It will aid in identifying tax evasion and fraudulent activities.

Cultivate a Culture of Requesting Bills

The project endeavors to instill a new shopping culture among the public, emphasizing the importance of requesting purchase bills. Promoting the "Ask for Bills" approach aims to create awareness and encourage individuals to actively participate in the formal economy.

The Impact and Potential Future Developments

Kerala's Lucky Bill App isn't just a local success story; it's a national tax revolution in the making. With over 1.5 lakh users and a staggering 20 lakh bills uploaded in just eight months, its impact has blossomed into the "Mera Bill Mera Adhikar Yojana" project of the central GST Department, now taking root in five states and two Union Territories; it's a beacon of hope for a brighter tax future across India.

But the Lucky Bill App is much more than just a compliance booster; it's about building a tax ecosystem where everyone wins. Its initial success in encouraging invoice issuance and streamlining administrative processes is just the beginning.

- Empowered citizens, strengthened revenue: Imagine a future where every bill tells a story of active citizenship and responsible tax collection. The app's potential lies in expanding its reach, empowering more consumers to participate, and fostering a sense of shared responsibility.
- **Beyond rewards**, **deeper insights:** The app's data trove is key to unlocking new possibilities. Advanced analytics can identify trends, predict patterns, fraud activities on trade, trade anomalies, unauthorized tax collections and inform targeted interventions, making tax administration more proactive and preventative.
- **Innovation breeds innovation:** The Lucky Bill App is a springboard for further advancements. Integrating emerging technologies like deep learning and block-chain can lead to even more robust and transparent tax systems.

Towards a Transparent Tax Ecosystem

The 'Lucky Bill App' stands as a testament to innovation converging with administrative needs and consumer engagement. Its role in reshaping tax compliance, empowering consumers, and streamlining administrative processes underscores its significance in fostering a transparent and accountable tax ecosystem. As technology continues to evolve, future iterations of the app might incorporate enhanced AI capabilities for more sophisticated data analysis or expand its gamification elements to incentivize compliance among consumers further. The 'Lucky Bill App' serves as a beacon, signaling a transformative shift in tax administration, and its impact resonates not just in India but potentially across the broader spectrum of tax ecosystems globally.

Sampurna Shiksha Kavach

Tech-driven Learning Acceleration Programme

Abstract

The pursuit of 'Education for All' has been a fundamental goal for Indian education policy. Solving the problem on a large scale for students with different socio-economic backgrounds and unique style of learning is complex and demands deep innovation.

The biggest challenge in the current education ecosystem is to solve for persistent learning gaps faced by students in rural regions of India. Indicators like National Achievement Survey (NAS) 2021, showed a significant decline in the learning levels of students with a reported average learning level of 59% in grade 3, 49% in grade 5, 42% in grade 8, and only 36% in grade 10. Various learning enhancement Programmes or remediation Programmes have been introduced at the district, state and national level as an approach for bridging learning gaps among students aggregated over the years. With some states relying on old approaches such as holding students back a grade or remediation learning to reteach concepts, research has shown that these methods are ineffective and can actually exacerbate learning loss.

In this context, this case study presents the tech-driven innovation 'Sampurna Shiksha Kavach by Filo' based on the emerging concept of 'Learning Acceleration' to provide just-in time learning support to students and help students improve their learning levels. The results of the Programme in Dumka district showed an overall improvement in the passing percentage of students in state board examinations. Average pass percentage of the district in Academic Session 2022-23 for Grade 12 Science students is 67.1%, whereas pass percentage for FILO Schools in the district is 78%. The outcome of the Sampurna Shiksha Kavach Programme can act as a case study for policy makers to use learning acceleration as an effective tool to bridge learning gaps aggregated over years among students.

Project Background

Conventionally, in India, Programmes for learning recovery focused on remediation as an approach which includes re-teaching a group of students who have consistently struggled in a core academic area, rather than student centred learning and focussing on the needs of each and every student. Various studies have shown that this approach is not very effective to cater to varied learning levels and can actually exacerbate learning loss. An emerging practice to effectively and equitable close learning gaps is learning acceleration.

Sampurna Shiksha Kavach is India's only tech-driven learning acceleration Programme which focuses on getting students ready for their new grade-level learning without holding them back for their pre-existing learning gaps. Learning acceleration emphasizes



building on students' existing knowledge, and using a range of evidence-based instructional strategies to promote student learning.

In Dumka District (Jharkhand State), an innovative learning intervention is introduced by providing tech-driven learning acceleration to students in an effort to bridge the learning gaps in schools and support learning recovery. The project provides unlimited instant access to live teachers who are available 24x7 to all the students, in an effort to make education more inclusive and resilient. The features of the Programme include:

- Provide personalized learning focusing on "just-in-time" interventions the right type oramount of support at the right time
- Identify student's learning ability for a particular topic and provide required learningsupport just at the right time
- Introduce student-centred learning approaches to further improve existing learning outcomes
- Provide one-on-one student-teacher interactions through online live tutoring sessions
- Provide virtual 24x7 learning support to help students get a strong grasp on foundational concepts
- Enables customization of live sessions in regional language making it more accessible tostudents

The Programme was introduced for students from 26 government schools in the district with Science Stream in Grade 11 and 12. Presently, more than 3.4 lakh students from Grade 6-12 students of Bihar and Rajasthan State are benefiting with this learning acceleration Programme.

The Current (AS IS Process) and the Critical Stakeholders

The present educational landscape faces a critical question- How do you enable grade 10 students to learn grade 10 subjects? According to NAS 2021 for Dumka District, 32% students were at the below basic level of performance and 47% were at the basic level. Only18% students were at the proficient level in Mathematics.

The learning gap for students has compounded over the years due to several reasons. In traditional linear learning, it is often assumed that students acquire knowledge in a sequential and steady manner, building on what they learned previously. However, in reality, individuals may have gaps or inconsistencies in their knowledge. Students in a classroom come from a diverse socio-economic background and each student begins at a different levelof learning with their own learning pace. Irregular attendance throughout the academic year, coupled with a nearly non-existent academic support system outside of school, further exacerbates these educational disparities. Addressing these nonlinear learning gaps requires innovative methods that are tailored to the needs of each student.

Critical Stakeholders:

- District Administration, education departmental officials, and school teachers provided crucial inputs and constant feedback which helped effective implementation of the project
- Filo Team The project was designed and implemented by Team Filo in Dumka District. Filo Teachers worked tirelessly to provide 24x7 on-demand learning support to students, even at 4 am on a Sunday morning.

Pain points/ Grievances/ Complaints/ Feedback/ Problem area and the need for intervention; Baseline Survey analysis, Problems Faced by Various Stakeholders in theCurrent Process

The district faces multifaceted challenges to provide equitable access to learning opportunities. The problems identified from the baseline survey analysis includes:

- Non-Linear Learning Gaps among students: In a classroom not all the students are atequal level of understanding of a subject/topic. For instance, more than 30% students from grade 12 struggles to obtain passing scores and a majority lies between 35-55% and a very few students are high performing students with more than 75% scores.
- 2. Bridging Foundational Learning Gaps and providing grade appropriate learning to students: The district consistently reports poor educational outcomes where more than 63% of students of Secondary Grades are not able to solve simple division problems (ASER 2022). More than 25% students from Grade 12 exhibited foundational learning gaps in Mathematics. These foundational learning gaps among students keep accumulating over the years and results in overall decline of academicperformance in higher grades.
- 3. Shortage of Subject-Specific Teachers in Schools: Huge shortage of subject teachers in the district, especially for Science Stream Students. Only 3 physics teachers for 26 higher secondary government schools for around 2100 science students in the district. The dismal situation adversely affects the learning outcomes of students.
- 4. Socio-Economic Challenges in the District: District has majority higher secondary government schools students from rural regions (~60%), less than INR 10,000 per month family income (~65%), majority students from OBC, SC, ST category and many students are first generation learner with limited learning support at home.

- 5. **Overall Academic Performance**: Control and treatment group students from Grade 11 and 12 scored nearly 55% in mathematics on the recent topics studied in the baseline assessment.
- 6. Absence of after school help: More than 21% of students lack parental support for their educational achievement (NAS 2021). Also, many students are first generation learners with limited learning support at home.



Planning of the New Project/System

- The Sampurna Shiksha Kavach Programme **aims to expand its reach to the last mile**. The objective is to ensure that the proposed solution reaches even the most remote and underserved areas, effectively bridging the educational divide. In this regard, Sampurna Shiksha Kavach by Filo plans to seek strategic partnerships with both state and national governments, as well as engaging with various stakeholders, including private organizations. The Programme will also seek support from third party funding partners. Our focus throughout the Programme will be on achieving last-mile reach and enhancing learning outcomes for all students under its purview.
- To have a holistic approach to improve learning outcomes, the Programme plans to integrate emerging technologies to implement continuous professional development.

- **Programmes for teachers**. This will include a 24x7 access to the training material, direct connections with Training Experts to help resolve teachers' doubts and live demo sessions with the support of Training Experts to help teachers practice what they learn in the training Programmes.
- The Programme will also include a tech-driven **competency based assessment framework for students** so that the learning levels of each and every student can be assessed on keycompetencies.

Objectives and Scope of the Project

Objectives:

- Improving academic performance of students at grade level
- Building equity by improving performance of underserved and underprivileged students
- Helping students overcome non-linear learning gaps aggregated over the years
- Supporting high-risk students and at the same time creating impact beyond highintentand high performing students in the class
- Providing personalised support to every student accounting for their unique learningneeds

Scope of the project:

The Programme has been designed to enhance learning levels of students from Grade 6 to Grade 12 encompassing both urban and rural areas. The Programme employs regional-bilingual teachers to ensure students can learn in the language they understand. Presently, Filo has more than 60,000 teachers from across all states in India and can speak more than 10 languages.

The Redesigned Process and the Role of ICT

To effectively and equitably close learning gaps, Sampurna Shiksha Kavach Programme adopted the emerging global practice of **Learning acceleration**. Learning Acceleration focuses on getting students ready for their new grade-level learning without holding them back for their pre-existing learning gaps. Studies have shown that students who participated in accelerated learning Programmes completed <u>27% more lessons</u> than students who took part in remediation. Learning acceleration was particularly effective for students from <u>low-income families</u>.

Role of ICT

Through Sampurna Shiksha Kavach, for the first time in the world, Learning acceleration has been implemented on a big scale in an affordable manner. 24x7 instant access to live teachers to every student covered under the project. AI technology identifies learning gaps that have accumulated over the years and provides the right amount of learning support at the right time. This tech-driven learning acceleration intervention to students aims to bridge the learning gaps in schools and support learning recovery.

- Filo invented the world's first instant-teaching platform, with tech-driven scalability built-in, which has successfully operated at the scale of 35 lakh students across 15 countries. This required us to invent multiple concepts in different fields.
- Algorithmic innovation: Proprietary AI algorithms (4 patents awarded in US and India) invented at Filo are based on the emerging concept of Learning Acceleration. Filo team pioneered the concept of matching thousands of students on scale to thousands of teachers in real time w.r.t
- o Student's academic and socio-economic profile
- o Metadata generated from the question or the query shared by the student
- o Teacher's academic, pedagogical and socio-economic background aggregated at a topic level.
- Academic innovation: In order to achieve this on scale we had to evaluate teachers pedagogical proficiency through algorithms. Filo team created the first of its kind data driven model for evaluating pedagogy of a class based on analysis of a live video.
- Deep contextualisation for students of every background. Majority of the teachers have been bilingual, expert in formative assessment of the student and open to any question that student brings in.
- Conversation learning at scale. For the students who do not even know how to frame a question in writing, simply being able to voice out their concerns has become one of the major factors for the effectiveness of the Programme.

What is the Change/Transformation?

Under the Sampurna Shiksha Kavach project, every student, regardless of their initial performance level or background, is provided with personalized learning support. The hallmark of this transformation is the concept of self-paced learning, where students are encouraged to progress at their own speed, unhindered by rigid timetables or uniform learning expectations.

One of the cornerstones of this transformation is the **24x7 availability of dedicated teachers**, making learning a continuous and interactive process. Students can access real-time assistance whenever they encounter challenges or seek clarification, fostering an environment where no question goes unanswered and no student is left behind.

In essence, the change brought about by Sampurna Shiksha Kavach project is a shift towards **inclusive and personalized education**, where the focus is not solely on high-performing students but on **empowering each student to reach their full potential**, irrespective of their starting point. It redefines education as a dynamic, adaptable, and equitable process that caters to the unique learning needs of every individual, thereby revolutionizing the landscape of education in India and beyond.

Implementation Processes

The implementation of the project can be divided in the following stages:

Live Learning Sessions: FILO has a pool of more than 60,000 teachers trained on various important parameters including pedagogical, communication, subject knowledge and learning gap identification and demo sessions. These qualified teachers conduct 24x7 live learning sessions for students based on the student's learning needs. Students are matched to the right teacher, speaking more than **10 languages**, based on immediate requirement of the student, student's educational profile, student's local-social context, past preferences, teacher's expertise in different academic & pedagogical fields and their own local-social context. These live learning sessions are conducted at home on FILO mobile platform and also, in schools where there is a shortage of subject specific teachers.

24x7 Instant-Teaching (At home):

Objective: Enhance learning levels of all students irrespective of their educational and socioeconomic backgrounds

Intervention: The students are connected to live subject experts through 1:1 video instant learning sessions on the FILO platform to help them get one-to-one personalized learning support in their local language. This provision facilitates students to ask as many questions and get his learning difficulties resolved instantly with the help of a teacher.

Classroom Sessions (In School):

Objective: Provide equitable access to learning for schools with shortage of subject teachers. The students with limited access to digital devices at home are also benefited from the intervention

Intervention: The students are connected to subject experts through a LIVE CLASSROOM in a oneto-many model to help students learn in a classroom environment and facilitate cohort discussions.

Super 30 Programme for JEE & NEET:

The Programme also provides SUPER 30 students (the high intent and performing students of the district) to support and prepare them for competitive exams such as JEE, NEET and CUET through a rigorous selection process, which included input from teachers and their past academic performance.

Continuous Assessment and Evaluation: Regular assessment is crucial in identifying the progress of the student and taking corrective measures, as and when required. Continuous assessments are conducted after each learning session using a short quiz and students are encouraged to solve these questions. This process enables the student to apply the learning gained from the learning session to solve a question/problem. Immediate application of the learning enhances the retention level of students.

AI driven Learning Acceleration: The platform identifies student's learning gaps based on the students' interaction with the platform. The teachers are trained to support students and build their foundational knowledge, and then provide grade appropriate conceptual understanding of the topic. The entire topic-wise learning journey of a student is mapped using a personalized learning curve reflecting the student's topic wise level of understanding. This is a highly personalised approach which facilitates accelerated learning.

Constraints and Challenges Faced and Overcome

Infrastructure Gaps and Enhancement

Problem: Infrastructure deficiencies, ranging from minor to major.

Solution: District administration, working in collaboration with the Filo team on the ground conducted comprehensive infrastructure surveys across all schools. This meticulous process ensured that all necessary infrastructure like computer, projector, microphone, internet connectivity, speakers, power backup was in place before commencing classes. Regular visits to the schools are done by the district team led by SDEO, Education and the Filo team to ensure that classroom delivery is seamless.

Bridging the Connectivity Gap in Remote Areas

Problem: Some schools are situated in remote areas with limited internet connectivity. **Solution:** Determined to leave no student behind, the Programme explored diversesolutions, including partnerships with multiple internet service providers and ensuredthat all internet related issues are resolved.

Navigating the Transition to Digital Learning

Problem: Transitioning to digital learning posed a learning curve for both students and teachers. **Solution:** To ensure a seamless shift, the Programme conducted regular feedback sessions inschools and actively sought input from students. These insights guided us in refining the teaching methodology and overall Programme experience.

Resistance in Schools with Available Teachers

Problem: Initial apprehension prevailed among schoolteachers, fearing digital classes might replace their roles.

Solution: The district administration engaged in open dialogues with teachers, emphasizing that digital classes were designed as supplements, not replacements. With the unwavering support of the education department, teachers embraced the Programme, becoming instrumental in its success.

Each challenge presented an opportunity for growth and improvement. By addressing these obstacles head-on, the Programme tried to pave the way for a more inclusive and effective digital education environment in Dumka.

Impact of the Project-Tangible/Intangible (with data) & Social Impact

The intervention has brought about significant improvement in learning outcomes of students, especially from disadvantaged backgrounds in the district by providing them equitable access to quality education. The key achievement of the Programme in just one academic year includes:

- Improvement in Passing Percentage in State Board Examination (Academic Session 2022-23):
 - Average Pass Percentage of the district for Class 12 Science students is 67.1%, whereas pass percentage for Schools under the Programme in the district is 78%.
 - o 99% of filo instant students passed the state board examination
 - All the District toppers including Rank 1, Rank 2 and Rank 4 are students under this Programme.
- Under the Super 30 Programme, the district had four selections in JEE Main examination. The impact assessment study for Sampurna Shiksha Programme in Dumka district shows: -
 - An overall improvement in Academic Performance by 14% in Mathematics
 - Building equity in learning for students from socio-economically and educationally disadvantaged backgrounds



- Students from rural regions have shown 12% improvement in performance, whereas Control Group students showed decline by 15%
- Low-income families: students from low-income families (<10k per month) improve their overall performance by 12% whereas control group students saw a decline of 12%.
- SC/ST categories: ST Category students showed 24% improvement in scores, whereas Control Group ST students showed a decline of 25%



- Female Students have shown18% improvement in performance
- First generation learners have shown remarkable improvement of 21% in their performance
- Helping students overcome non-linear learning gaps by bridging their foundational learning gaps while also enhancing their overall understanding of the topic.
- Reduction of high-risk students who struggled to obtain passing scores and has seen transformational rise in the number of high-performing students

Lessons Learnt

- Equitable access to quality education is essential, particularly for disadvantagedstudents.
- Personalized and self-paced learning enhances student engagement and learningoutcomes.
- Collaboration and open communication with teachers are critical for the success of digital learning Programmes.
- Regular assessment and feedback loops are vital for monitoring student progress and improving teaching methods.

- Effective use of technology can bridge learning gaps and transform education delivery.
- Engaging with communities and stakeholders builds trust and support for educational initiatives.
- Data-driven decision-making is crucial for shaping Programme strategies and interventions.
- Empowering disadvantaged students with educational opportunities can lead tosignificant academic improvements.
- Education has the transformative potential to change the lives of students and communities for the better.

Long Term Significance

- National and Global Replication: The success of the project positions it as a potential model for replication in other regions of India and even globally, potentially transforming the way education is delivered.
- Closing Learning Gaps: By effectively bridging learning gaps and equipping students with foundational knowledge, the project sets the stage for their continued educational journey, empowering them to excel in higher studies and future careers.
- The solution is **aligned with National Education Policy 2020** including quality teachers who can teach in local languages can make a huge difference; One-on-one teaching is extremely effective for learning.
- Empowerment of Disadvantaged Communities: The Programme's commitment to inclusivity and equity has the potential to uplift entire communities by providing access to quality education, breaking the cycle of educational disadvantage.
- Community and Stakeholder Engagement: The long-term significance is also evident in the trust and support garnered from communities and stakeholders, setting a precedent for collaborative efforts in the education sector.
- **Digital Learning as a Catalyst**: The success of the Programme underscores the transformative potential of digital learning, which can continue to reshape educational delivery methods and foster innovation in the education sector.

Future Roadmap

As we embark on the new academic year, the Programme, now sanctioned by Niti Aayog, stands poised for continued evolution and success. The Programme's future roadmap is marked by a commitment to expanding its reach, leveraging technology, improving teacher capabilities, and actively engaging with stakeholders.

Scalability

A defining feature of the Sampurna Shiksha Kavach Programme is its **tech-driven approach**, **making the Programme highly scalable**. The processes involved in the implementation of the project are automated which makes it scalable and also, **adaptive to the local requirements** including language, social and environmental aspects. The scale at which the project is currently operating across 75 districts in Bihar, Rajasthan and Dumka District in a short span of around 1.5 years reflects the scalability and adaptability of the Programme.

The key enabling tech tools which makes the Programme easily adaptable includes:

- AI driven matching algorithms to connect students with the right teacher in less than 60 seconds based on immediate requirement of the student, student's educational profile, student's local-social context, past preferences, teacher's expertise in different academic & pedagogical fields and their own local-social context.
- Tech-driven Professional Trainings of onboarded subject experts on FILO Platform with automated shortlisting process including KYCs of subjects experts, their educational qualifications.

In order to solve for the massive requirements for teachers on scale, the teachers are screened, trained, tested and continuously evaluated on the platform through complete automation and then meaningfully incentivized for better pedagogical practices. Through careful consideration, students are matched to teachers on a topic level rather than a subject level. That allows to bring down the initial requirement of skilling for someone to start earning on the platform. A person with a strong knowledge of just Trigonometry can start earning on Filo and grow from there. Which creates a potential pool of teachers that can cater to not just India but the entire world.

Present Reach: Within a short span of two and a half years, Filo's innovative technology and scalable approach have successfully served 35 lakh students across 15 countries with 60 thousand teachers on the platform. With more than 90 thousand live classes taking place on the platform every day, Filo is the largest platform in the world that caters to students on one-to-one basis. The project in Bihar reached to almost 2 lakh students, in 38 districts, in a direct to student model. The same mode was then extended to Rajasthan with almost 1.5 lakh students across 33 districts. The project has also been adopted in the Jefferson County district schools in the US.



Future Roadmap: Moving forward, the Sampurna Shiksha Kavach Programme aims to enhance its scalability by forging strategic partnerships with both state and national governments, as well as engaging with various stakeholders, including private organizations. The Programme will also seek support from third party funding partners. Our focus throughout the Programme will be on achieving last-mile reach and enhancing learning outcomes for all students under its purview.

To ensure a holistic approach to education, the Programme will extend its efforts into other domains, including the development of technology-driven professional development Programmes for teachers and the implementation of a tech-driven student assessment system.

The programme's commitment to quality education, innovation, and inclusive growth remains unwavering as it moves forward. Collaborating closely with partners, it aspire to shape a brighter educational future in our district, one where every student has the opportunity to thrive and succeed.

Transforming Governance - Establishing Hyper-Local Air Quality Monitoring Network

The "AirView Project" was successfully implemented in the cities Bhubaneswar, Mumbai, Aurangabad, Chennai with a primary focus on establishing a hyper-local air quality monitoring network. A network of 187 sensor-based air monitoring devices was strategically positioned across the cities. Of these, 65 devices were installed on mobile vehicles, specifically CRUT (Capital Region Urban Transport) buses, while the remaining 122 were stationed in fixed private locations. This sensor-based monitoring system facilitated the collection of high-resolution, real-time pollution data from various areas of the city.

Throughout its implementation, the project successfully amassed over 200 million data points, offering valuable insights into the historical air quality situation in all city.

The Vision

The objective of the project was to establish a low-cost, scalable, and robust technology-driven sensor network for monitoring and reporting air quality in the Cities. By providing hyperlocal air quality data, the project aimed to raise public awareness, empower key stakeholders, and support data-driven decision-making to improve the quality of life in urban areas.

The project successfully implemented the envisioned sensor network, achieving its goal of creating a comprehensive system for monitoring and reporting air quality. Throughout its duration, the initiative played a vital role in providing valuable data to the public and decision-makers, contributing to efforts aimed at enhancing the overall quality of life in the cities.

Implementation Process

Baseline Study

Prior to launching the AirView project in all these cities, a comprehensive baseline study was conducted to evaluate the city's existing air quality monitoring systems and identify gaps. Key

activities included assessing current air quality, identifying gaps in monitoring infrastructure, evaluating existing methods, conducting surveys with stakeholders, analyzing health impacts, and studying city infrastructure for potential air quality contributors.

Issues Identified

- a. Insufficient air quality monitoring systems.
- b. Limited spatial and temporal resolution, hindering hotspot identification.
- c. Low public awareness impeding collective action.
- d. Inadequate real-time data for evidence-based policymaking.
- e. The need for aligning air quality efforts with national climate goals, including forest cover increase, promotion of renewable energy, and adoption of electric vehicles.

Implementation

Initially, a comprehensive survey was conducted in entire cities individually, dividing it into critical zones based on pollution exposure and health impacts. The implementation involved both stationary and mobile approaches, with 122 strategically placed stationary sensor devices and 65 mobile devices on Buses, capturing fine-grained air quality data. These sensors, equipped to monitor pollutants and environmental conditions, utilized 4G LTE technology to transmit data to cloud servers for analysis using Google tools.




Approach

The project implemented a robust communication strategy, utilizing:

- a. Mobile and web applications for real-time air quality updates and personalized recommendations.
- b. A collaboration platform for stakeholder engagement.
- c. Interactive dashboards and maps for effective data visualization.
- d. Publication of whitepapers and research materials for wider dissemination of analysis results.
- e. Training programs, both in-person and online, to enhance stakeholder capacity.
- f. Integration with government platforms through REST API.
- **g.** Collaboration with academic institutions to validate and improve the solution, leveraging research resources and technical expertise. This approach successfully shared air quality information, engaged stakeholders, and contributed to knowledge in air quality management

Technology Platform Used

The technology platform employed in the AirView project was a comprehensive and integrated system, incorporating IoT-based sensors, cloud-based data management, and advanced data analytics. The solution comprised three key components:

- a. Sensor Network: Designed to collect greenhouse gas and air quality data, the low-cost and efficient sensors provided high spatiotemporal pollution measurements, forming the foundation for preventive and corrective measures.
- b. Gateway Devices: Transmitting data wirelessly from sensors to the central server, these devices acted as intermediaries, ensuring secure and efficient data transmission.
- c. Information Delivery Network: The central server integrated data with analytics platforms, such as Google Cloud Platform, utilizing AI-based software to analyze and extract insights. The information was then made accessible through mobile and web applications, empowering decision-makers, and the public. Advanced machine learning algorithms predicted city hotspots, providing an early warning system.

The Seamless Integration Among Components

The AirView project prioritized interoperability, ensuring seamless integration and communication among its components through

- a. Wireless communication protocols
- b. Integration with data analytics platforms like google cloud platform (GCP)
- c. Data standardization
- d. Compatibility with existing systems
- e. Well-defined APIs for external interaction
- f. Scalability & expansion capabilities
- g. Secure data sharing with stakeholders

Securing the system

Emphasizing security, the project focuses on compliance to safeguard the integrity and confidentiality of air quality data and the overall system:

- a. Data Protection: Ensuring the secure handling and confidentiality of air quality data.
- b. Unauthorized Access: Implementing robust access controls to prevent unauthorized system entry.
- c. Data Integrity: Safeguarding the unaltered state of air quality data against tampering or modifications.
- d. Network Security: Employing firewalls and encryption to protect the network infrastructure.
- e. Privacy Protection: Implementing controls to safeguard personal information.
- **f.** Cyber Threats: Proactively addressing potential cyber threats through regular security assessments and updates.

Self-Sustainability of the AirView Project

Sustainable Business Model: Aurassure employs a sustainable business model, generating revenue from device sales and data services to fund operations, maintenance, research, and network expansion. The aim is to establish a self-sustaining ecosystem for ongoing monitoring and effective air quality management.

Revenue Generation: Revenue is derived from one-time device sales of IoT-based sensors and a subscription-based service offering access to air quality data collected by the sensors.

Partnerships and Collaborations: Collaborations with municipal corporations, research institutions, and academic organizations contribute to project sustainability by leveraging resources and expertise. Partnerships facilitate knowledge exchange, solution validation, and shared responsibilities.

Community Engagement and Public Support: Community engagement and public support foster awareness, involvement, and ownership in air quality monitoring and management. Engaging citizens and raising public awareness create a supportive environment for sustainability.

Continuous Improvement and Adaptation: The project prioritizes continuous improvement, adapting to technological advancements, and incorporating stakeholder feedback. Regular monitoring, evaluation, and refinement ensure ongoing project relevance and effectiveness.

Adaptability & Scalability

Leveraged Shared Government Infrastructure

The project collaborated with government stakeholders to deploy air quality monitoring devices, utilizing existing infrastructure such as streetlights and public buildings. This collaborative approach reduced deployment costs and enabled wider coverage across the city.

Standardized Technology

The project focused on standardizing technology in hardware, software, and applications to ensure interoperability and ease of adoption. Adhering to industry standards and protocols allowed for seamless integration between different components of the monitoring system.

Hardware

The project emphasized a modular design, enabling the incorporation of different sensor sets based on the city's specific requirements. This modularity provided flexibility and adaptability in sensor selection, catering to the monitoring of critical pollutants in the local environment.

Pollutant	Description
PM2.5	Inhalable particles, with diameters that are generally 10 micrometers and smaller
PM10	Fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller
CO ₂	Carbon dioxide also indirectly impacts the more visible form of air pollution – SMOG.
VOCs	VOCs are an important pollutant because of their contribution to the formation of ground-level ozone.
SO ₂	Sulphur dioxide is emitted by the burning of fossil fuels - coal, oil, diesel, or other materials that contain Sulphur.
NO ₂	Nitrogen dioxide forms when fossil fuels such as coal, oil, gas, or diesel are burned at high temperatures.
Temperature	A measure of the warmth or coldness of the air.
Humidity	The amount of water vapor in the air.

Software and Applications

The project integrated data analytics platforms like Google Cloud Platform for analysis and insights extraction. Utilizing widely adopted software tools ensured compatibility and facilitated collaboration with existing data analysis frameworks. The environmental sensor platform offers a range of insights, including:

- 1. **Street-Level Environmental Data:** The platform provides detailed information on environmental conditions at the street level across the entire location.
- 2. Geo-Mapped Air Quality Data and Air Quality Index (AQI): It generates geo-mapped data on air quality and calculates the Air Quality Index, offering a spatial representation of pollution levels throughout the area.
- 3. **Remote Access and Analysis:** Users can remotely access and analyze air quality data from any location. The platform also includes weather parameters such as wind speed, temperature, and humidity for a comprehensive understanding.
- 4. **Holistic Environmental Analysis:** The platform allows for a comprehensive analysis of the entire environmental scenario, offering a broader perspective on various factors influencing air quality.
- 5. **Root Cause Identification:** It facilitates the identification of the root causes of pollution, enabling a targeted approach to mitigate and address specific sources of environmental degradation.

- 6. **Mitigation Recommendations:** Based on the data analysis, the platform suggests possible actions to mitigate pollution sources, aiding decision-makers in formulating effective strategies.
- 7. **Public Awareness Initiatives:** The platform contributes to creating public awareness by presenting environmental data through various forms, making information accessible and understandable to a wider audience.

Data Standardization

Adhering to standardized data formats and protocols, the project enabled easy aggregation and analysis of data from multiple sources. This standardization facilitated data sharing and collaboration with other monitoring initiatives, researchers, and policymakers.

Widespread Impact

Pre-implementation Challenges

- a. Inadequate localized air quality data impeded effective action.
- b. Lack of hyper-local real-time data hindered the development of city-level policy frameworks.

Post-implementation Benefit

- a. Decision-makers were equipped with accurate data for informed policies and interventions.
- b. Citizens gained access to real-time air quality information for informed decision-making.
- c. Targeted interventions led to reduced economic damages.
- d. The project generated valuable data for research and advocacy.
- e. The model proved to be scalable with global adoption potential.
- f. Active community participation contributed to reducing the carbon footprint.

Impact Assessment:

- a. Achieved significant reductions in greenhouse gas emissions and improved public health outcomes.
- b. Progress made towards achieving sustainable development goals.
- c. Positive change observed through data-driven decision-making and increased public awareness.

d. Social impact: The focus on community engagement and empowerment aimed to create a sense of ownership and responsibility among citizens, schools, hospitals, and organizations.

Results Achieved

To Organization

- a. Enhanced data-driven decision-making through comprehensive air quality data.
- b. Improved policy formulation and implementation based on accurate insights.
- c. Cost-effective solutions and a scalable model for wider adoption.
- d. Strengthened collaboration with government entities and stakeholders.
- e. Increased reputation as a leader in air quality monitoring.
- f. Collected over 200 million data points, providing insights into air quality.
- g. Established an extensive sensor network covering 1600 sq Km for localized monitoring.

To Citizen

- a. Access to real-time air quality information for informed choices and health protection.
- b. Increased awareness of air pollution and its impact on well-being.
- c. Empowerment to actively participate in efforts to improve air quality.
- d. Potential health benefits from reduced exposure to pollutants.
- e. Improved quality of life with cleaner and healthier environments.
- f. Indirectly impacted approximately 1.2 million individuals, benefiting from improved air quality and health outcomes.

Other Stakeholders

- a. Researchers and academia benefited from comprehensive data for studies.
- b. Environmental organizations and advocacy groups used project data to support initiatives.
- c. Technology providers found collaboration opportunities and potential solutions.
- d. Government agencies gained valuable insights for evidence-based policies.
- e. Positive feedback and statements from stakeholders highlighted the project's impact.

Accomplishments

- a. Data Points Collected: Over 200 million data points collected, providing comprehensive insights into air quality.
- b. Sensor Network Area Coverage: Extensive coverage across 1600 sq Km, enabling localized monitoring.
- c. People Indirectly Impacted: Approximately 1.2 million individuals benefited from improved air quality and health outcomes.
- d. Collaboration with SPTI, CRUT, OSPCB, and Anna University for the publication of two white papers.

Chennai



Bhubaneswar



Prospects for Future

Expansion and Replication

Aurassure is going to expand its successful model to other cities and regions as well, addressing air quality concerns on a broader scale.

Replicating the project in different geographical contexts allows for the customization of solutions based on local needs.

Technological Advancements

Embracing emerging technologies, such as advancements in sensor technology and data analytics, could enhance the accuracy and capabilities of the air quality monitoring system.

Integration of artificial intelligence and machine learning may provide more sophisticated insights and predictive capabilities.

Collaboration and Partnerships

Further collaborations with governmental bodies, environmental organizations, and academic institutions can contribute to sustained success.

Partnerships with technology providers and innovators may result in the development of new solutions and features.

Policy Influence

As Aurassure continues to provide valuable data, it is carrying the motive of playing an influential role in shaping air quality-related policies at local, regional, and even national levels.

The project may become a reference point for evidence-based policymaking in the field of air quality management.

Global Recognition and Adoption

Building on its scalable model, Aurassure has the potential for global recognition and adoption.

Participation in international forums and collaborations can contribute to the global conversation on effective air quality monitoring and management.

Innovation and Research

Investing in ongoing research and innovation can keep Aurassure at the forefront of air quality monitoring technologies.

Aurassure has been exploring new methods and technologies for pollution control and mitigation.

Economic Sustainability

Exploring diverse revenue streams, such as public-private partnerships, sponsorships, or additional data services, can contribute to the long-term economic sustainability of the project.

Climate Change Mitigation

As Aurassure addresses air quality concerns, it may contribute to broader efforts in climate change mitigation, aligning with global sustainability goals.

Conclusion

The Air View project has significantly influenced the residents of these cities. With the deployment of 187 devices and the collection of 200 million data points, the project has heightened awareness of air quality among both the administration and the local public. The use of data by local reporting channels and research institutes underscores the project's importance. The city administration's proactive engagement in pollution mitigation efforts showcases the practical application of the data for targeted actions.

Shielding Cooperative Banking Industry from Cyber Threats

Abstract:

India is currently the fifth largest economy in the world. As per an article by Times of India, India will be amongst the **Top 4 nations to spend heavily on Digital Transformation** and Digital Initiatives, by end of 2023. Digital Transformation has been adopted by most of the organizations, either by choice or force (COVID-19 led Digital Transformation and Acceleration) and India is no exception to that!



With the advent of above, there has been a phenomenal growth in the number of cyber-attacks on India. First, the increase post COVID-19 was of over 400%, and reports show that the situation is

even more aggravated. According to an article by Mint, Maharashtra is one of the most targeted states constituting over 40% of cyber-attacks and needs to get themselves ready to combat against them.

Though Digital Technologies allow organizations to scale at a faster speed, they bring along vulnerabilities which could be easily exploited. A cyber-attack can directly impact the brand (pride) of State / Central Governments, result in data breach (sensitive information about the individuals, organizations and technology), and could hamper the operations of the organization (due to denial of services). This data can further be utilized to dig down personal information of the individuals, risk the life of individuals, and expose monetary records. In addition to the above risks, organizations also need to comply with the incident reporting guidelines by CERT-In, Reserve Bank of India (RBI), and the recent Digital Personal Data Protection Act 2023 (DPDPA).

Taking an example of Sequretek's project in the banking industry:

Banking industry experienced a huge surge in the number of cyber-attacks during 2018-19.

Some large attacks include 'Attack on India's 2nd largest co-operative bank – where 94 Crores were siphoned-off, an urban co-operative bank where 68 lakhs were stolen, a scheduled co-operative bank lost 29 Crores due to insider leak, and a very recent attack on Hyderabad based cooperative bank which lost 12 Crores & had an additional penalty exercised by the regulatory body.



As the banks directly had an impact (monetary), they became cautious and started procuring and implementing cyber-security products in their enterprise. This was limited to only the large organizations due to the hefty cybersecurity costs. The small-sized banks had no option but to struggle, resulting in a cyber-attack and non-compliance by RBI.

Our project 'SauraQshan' with The Maharashtra State Co-operative Banks' Association, Mumbai (MSCBA), focused on preventing cyber-attacks and non-compliance in the co-operative banking sector of Maharashtra. This sector was previously underserved due to its rural presence and lack of relevant skill set. 'SauraQshan' was an initiative to skill-up this sector, protect them against increasing cyber-attacks and giving them out-of-the-box compliance reports.

Project Background:

Cooperative banks in Maharashtra have a rich history of serving rural and urban communities, providing financial services to millions and keeping their investments protected. However, the increased digitization of banking operations has exposed them to cybersecurity threats, including data breaches, fraud, and cyberattacks. To address these challenges, a project was initiated to establish a state-of-the-art Percept XDR to monitor, detect, and respond to cyber threats effectively.

Project 'SauraQshan' consisted of various cyber awareness campaigns (by physically visiting regions like Aurangabad, Nashik, Karad, Kolhapur, Amravati, Pune and Mumbai), sharing posters, wallpapers, events for cyber awareness, offering 24/7 Cyber-security Monitoring and Management Service (SOC / Percept XDR) with compliance, at an affordable cost.

Sequretek today, supports over 30+ small and big co-operative banks in different parts of Maharashtra. Through this project, we protected these co-operative banks from over 378 probable cyber-attack attempts, out of which 140 were for the last 3 months.



This case study explores the transformation of cybersecurity operations center (SOC) / Extended Detection and Services (XDR) services for cooperative banks in the state of Maharashtra, India.

Cooperative banks play a vital role in the region's financial landscape, making them attractive targets for cyber threats. The study sheds light on how a comprehensive SOC upgrade initiative helped mitigate cybersecurity risks, enhance operational efficiency, and safeguard the sensitive financial data of these banks while making them compliant with RBI regulations.

Current Process & Stakeholders:

The existing cybersecurity framework in cooperative banks faced several challenges. The typical cooperative bank in Maharashtra had a rudimentary approach to cybersecurity, often relying on outdated security measures and basic AV / firewall / intrusion detection systems.

Pain Points:

- Inadequate Security Posture: Cooperative banks had limited visibility into their network and digital assets, making it challenging to identify and respond to threats in real-time.
- **Resource Constraints:** Many banks lacked the necessary resources, both in terms of skilled personnel and advanced security tools, to effectively combat cyber threats.
- **Regulatory Compliance:** Compliance with cybersecurity regulations, such as the Reserve Bank of India (RBI) guidelines, was becoming increasingly complex for these banks.
- Limited Incident Response: A lack of formalized incident response plans and a low detection or response mechanism / delay in detecting and responding to incidents put customer data and financial stability at risk.

Planning of SOC / Percept XDR services:

The first phase of the project involved detailed planning for the establishment of a Security Operations Center / Percept XDR. The planning included:

• Understanding of the Set-up and the Processes: We tied up with The Maharashtra State Cooperative Banks Association (MSCBA) to understand the current set-up and the processes followed by the organizations. We also tried understanding their specific cybersecurity needs and their current capabilities.

- Technical and Financial Feasibility: We went through various forms of engagements with the association as well as the organizations to understand the technical & financial feasibility so as to ensure that maximum organizations can benefit from the project.
- **Compliance Alignment:** Ensuring that the SOC's operations align with RBI's guidelines and other relevant regulations. The project plan also included multiple training & awareness sessions which explained the regulatory guidelines through use cases / relevant examples.

Objectives:

The objectives of the SOC project included:

- Enhanced Threat Detection: Detect and respond to cybersecurity threats proactively to minimize damage and protect customer data.
- **Regulatory Compliance:** Ensure compliance with RBI guidelines and other relevant cybersecurity regulations.
- **Operational Efficiency:** Improve the efficiency and effectiveness of cybersecurity operations within cooperative banks.



A cyber-attack directly impacts the brand, financial assets and business continuity. Most of us are aware about how, a certain number of banks got impacted after facing cyber-attacks or penalties from regulatory non-compliance. Percept XDR enables organizations to stay protected from evolving cyber threats.

Redesigned Process:



Percept XDR – Comprehensive Enterprise Security

The redesigned process included cutting-edge technologies enabling following capabilities, at an affordable cost and with a local language support:

- Deep Learning AI based Detection: Deep learning is used for correlation and attack identification, powering Percept XDR to detect APTs, Zero-day and other targeted attacks. The deep learning detection engine self learns to identify new use cases and anomalies which enhances detection capabilities.
- **24/7 Monitoring:** Percept XDR enables continuous monitoring of enterprise-wide network traffic, log data, and endpoints to detect suspicious activities.
- User & Entity Behavior Anomaly (UEBA): AI trained with hundreds of use cases including insider threats, user login failures, compromised user accounts, unauthorized configuration changes in critical devices to name a few.
- **Big Data Security Analytics:** Percept XDR leverages Big Data to process data features and detect various associations including Attack Kill Chain Association, Insider Threat Enrichment as well as Time Series Analysis for Threat Hunting and APT.

- Threat Intelligence Integration: Percept XDR incorporates threat intelligence feeds from over 85+ sources to identify emerging threats and vulnerabilities.
- **SOAR ML Based Automated Response:** Percept XDR features SOAR-based automated response in line with the MITRE ATT&CK framework. The reduced number of incidents that require manual intervention allows enterprise IT teams to focus on the core objectives.
- Incident Response Plan: Sequretek helps in developing and implementing a comprehensive AI-based incident response plan for swift action during security incidents.
- User Training: Subscribing to Percept XDR, the organizations also receive cybersecurity training for their employees to enhance overall security awareness in their local language.

Implementation Process:

Sequretek has an easy implementation process for organizations who wish to enable security monitoring and incident response processes (through Percept XDR).

- 1. List of devices that need to be monitored: Organization / bank to share the list of devices that need to be monitored.
- 2. Sizing of the basic hardware required (1 Server): Sequretek to provide basic sizing of the hardware for installing a server at the organization's premises and IPSEC-based connectivity.
- 3. Server Set-up and Device Onboarding: Sequretek works along with the organization/ bank's IT team to complete the server set-up and onboard the devices to Percept XDR.
- 4. **Testing and Validation:** Comprehensive testing to ensure that the Percept XDR was functioning as intended.
- 5. Training: Trainings & Awareness session in local language for the organization employees.
- 6. **Incident Response Drills:** Conducting incident response drills to prepare for potential security incidents.

Challenges Faced:

Resistance to Change: Resistance from some bank employees who were accustomed to the traditional ways of doing things.

- Lack of Skillsets: The employees in the sector had very limited skillsets, from the IT point of view. Making them understand the cybersecurity concepts and create awareness of security technologies was a challenge.
- **Resource Constraints:** Managing the costs (TCO) and resources, keeping in mind the quality of the output delivered is world-class.
- **Regulatory Complexity:** Navigating the complex landscape of cybersecurity regulations and ensuring compliance.
- **Politically Driven Decision Making:** Apart from the traditional evaluation process, the sector also had a lot of political influence behind approving procurement decisions.

Impact of the Project:

The SOC / Percept XDR project implementation resulted in significant improvements:

- Improved Cybersecurity: Enhanced threat detection and response capabilities reduced the risk of data breaches and financial losses.
- **Regulatory Compliance:** Cooperative banks were better aligned with RBI's guidelines and other regulations like CERT-In's Incident Reporting guidelines.
- Efficiency: Cybersecurity operations became more efficient, cost-effective and improved security posture significantly.

Sequretek protects over 30 co-operative banks in Maharashtra whilst ensuring their regulatory compliance. It is pleasure to share that one of our customers – Hasti Co-operative Bank was awarded as the WINNER of the Best SOC Initiative (two years in a row, 2022 & 2023) at the National Cooperative Banking Summit 2023 & Frontier Cooperative Banking Awards 2023.

Long Term Significance:

The Percept XDR services have enduring significance for cooperative banks in Maharashtra:

- **Safeguarding Reputation:** Continuously protecting the banks' reputation and customer trust by minimizing data breaches.
- **Competitive Advantage:** Demonstrating a commitment to cybersecurity can be a competitive advantage in the financial industry.

Future Roadmap:

The future roadmap includes:

- Continuous Improvement: Regularly updating technology and processes to adapt to evolving threats. Organizations get the latest functionalities & threat intelligence through the SaaS subscriptions. Furthermore, the XDR SaaS helps reduce the number of FTE's per shift, the cyber insurance costs and the blind spots in the system.
- Enhanced Training: Expanding cybersecurity awareness and training programs in regional language.
- **Collaboration:** Collaborating with industry peers and regulatory bodies to share threat intelligence and best practices.

In conclusion, the transformation of SOC services in cooperative banks in Maharashtra has significantly enhanced their cybersecurity posture, compliance with regulations, and operational efficiency, ensuring their continued success in an increasingly digitized financial landscape. This case study serves as an example of how proactive cybersecurity measures can secure sensitive data and strengthen the respective sector.

Like the above project (SauraQshan), we wish to work with the Central as well as State Governments to protect their Departments, Municipal Bodies (split between large and small), State Public Sector units, and State Departments. We look to create awareness, protect them against new-age cyber-attacks, and ensure that there is a timely response to a cyber-attack attempt.

We (through Percept XDR) could help in monitoring the security logs on a 24x7 basis, detect lateral movement of the virus/bad file in the environment, remediation to stop the on-going cyber-attack, and lastly threat advisories to create awareness-readiness for organizations against latest cyber-attacks.

Through this project, we wish to secure India against the ever-evolving cyber threats, while accelerating digitization.

Awards & Recognition:

Sequretek is recognized by leading global analyst and research firms and is a proud winner of prestigious awards including:

• National Award for e-Governance 2023 by DARPG, Government of India

- National Startup Award 2021, Startup India, Government of India
- One of the winners of the NASSCOM Emerge 50 2021
- Winners of the State as well as National Conclave by ESC India & STPI India for MISSION TO USA program
- DSCI's Security Product Company of the Year 2019
- Winner of RAISE 2020 AI Challenge by Ministry of Electronics and IT and many more awards and recognition.



Department of Administrative Reforms & Public Grievances Government of India New Delhi