



**C V Ramamohan
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N V Subrahmanyam**

Towards Digital Transformation

Selected eGovernance Initiatives 2019



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Sridevi Ayaluri

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Special Interest Group

SIG  **Gov**
eGovernance

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About Computer Society of India (CSI)

Formed in 1965, the Computer Society of India (CSI) has been instrumental in guiding the Indian IT industry down the right path since its formative years. The organisation has grown to an enviable size of 100,000 strong members consisting of professionals with varied backgrounds including Software developers, Scientists, Academicians, Project Managers, CIO's , CTO's & IT vendors to just name a few. It has spread its branches all over the country. Currently having 488 student branches and rooted firmly at 73 different locations, CSI has plans of opening many more chapters & activity centers in smaller towns and cities of the country.

The mission of the CSI is to facilitate research, knowledge sharing, learning and career enhancement for all categories of IT professionals, while simultaneously inspiring and nurturing new entrants into the industry and helping them to integrate into the IT community. The CSI is also working closely with other industry associations, government bodies and academia to ensure that the benefits of IT advancement ultimately percolate down to every single citizen of India.

CSI regularly organizes Regional and National level Seminars, Conferences, Competitions, Workshops and Annual Conventions on topics related to current and futuristic ICT for its members and general public. Through its permanent membership of international forums such as IFIP, CSI successfully collaborates with other ICT institutions across the world to formulate international trends and standards.

CSI has a number of Special Interest groups and CSI SIG eGov is one such group with focus on sharing eGovernance best practices & knowledge. CSI eGovernance Awards activity is one of such efforts in that direction, recognizing some of the successful eGovernance initiatives in the country.

About Editors

Sridevi Ayaluri has more than 23 years of experience in the areas of e-Governance, ICT. She has worked in both the Government and the Private sector. Her focus has been on developing appropriate strategies of high-value, high-impact, end-to-end Capacity Building programs and ICT solutions. She has done “Executive Programme in Business Management (EPBM)” from IIM Calcutta, M Sc – (Computer Science) from Kurukshetra University and M.A in Sociology from Osmania University.

She has worked with GoAP and developed strategy papers on “Capacity Building road map for the state” and setting up “ePragati Academy”.

She worked at National Institute for Smart Government (NISG) for 12 years and was involved in CB and CM plan for National level Projects like UIDAI, and Transportal of MoUD. She worked closely with NeGD on strategy to roll out CB across India under NeGP CB Scheme.

She was instrumental in initiating, designing and implementing one year diploma programme on e-Governance along with private partner institutions like TAPMI & IIM Indore.

Presently she is working in the capacity of Director (IT & e-Learning) and Head-Center for IT(CIT) at Dr. MCRHRD Institute, Hyderabad.

She has been associated with CSI’s Special Interest group on eGovernance and the eGovernance Awards for over a decade as s senior member.

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He is a Post Graduate in Sciences from NIT, Warangal and has a diploma in Operations Management, from IGNOU.

He is actively associated with SIG-eGovernance group for nearly a year.

Dr C V Ramamohan has extensive experience in the IT, Education and Banking industries for over forty years with a major portion of the time devoted to the conceptualisation and implementation of projects in the banking and finance sectors. He worked on large projects both in India and abroad that included considerable interactions with government institutions, gaining extensive experience in project formulation and implementation. He worked as Head, Consultancy Services, State Bank of India; Head, BFS, CMC Ltd.; Head, IT Strategy Implementation Project, Central Bank of Oman, Muscat.

Post superannuation, he continued to be professionally active and undertook assignments such as Consultant, Central Bank of Oman, Muscat; Director and Dean of AMS School of Informatics, Hyderabad. He is now an Adjunct Professor at the ICFAI University, Hyderabad. He is also associated with an NGO that runs an Eye Hospital and a School.

For over six years, he has been associated with the CSI's SIG in eGovernance and actively participated in the evaluation process of the projects. Dr C V Ramamohan holds M Sc and Ph D degrees from IIT Madras, an MBA from Osmania University, and is a Certified Associate of the Indian Institute of Bankers. Currently Dr Rama Mohan is Convener, CSI SIG eGovernance.

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Acknowledgements

This compendium, *“Towards Digital Transformation - Selected eGovernance Initiatives 2019”*, contains a few of the selected nominations submitted representing a wide range of contributions made by eGovernance practioners from across the country. It has been our endeavour to share the best practices adopted, the processes that have been reengineered and the key learnings with a hope that those who are engaged in eGovernance in the country benefit from such dissemination of information.

On behalf of CSI SIG eGovernance Awards (CSeGA) team, the editors acknowledge the efforts of all the individuals who continue to make contributions towards nation’s growth by sharing knowledge that is so pertinent in the eGovernance journey. We acknowledge the path being laid by the various government entities towards a digital transformation in the country.

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We would like to express our special thanks of gratitude to Dr Ashok Agarwal and Shri Surendra Kapoor (Fellow, CSI & Past Convener, CSI SIG eGov) for their support and encouragement to this year’s CSI SIG eGovernance Awards right through the year. We would like to express our heartfelt thanks to them.

It was a special privilege to have the support of the entire team of Computer Society of India HQ and executive Committee for their unstinted support, without which we could not have progressed with this year's awards. Special thanks to Prof A K Nayak (President, CSI) and Sri R K Vyas (Vice-President cum President, CSI), Shri Sanjay Mohapatra (IPP, CSI), Sri Satish Babu, and Prof P Thrimurthy for their active participation in various stages of our awards process journey in the current cycle.

A special thanks to local CSI Chapter, Chairs and other invited members who participated in various field visits across the country despite their busy schedules.

We are also grateful to University of Hyderabad and to its Vice Chancellor, Prof P Appa Rao and Pro-Vice-Chancellor-1, Prof Arun Agarwal for having provided their facilities for the Finalists' Presentations at a short notice. We wish to express our thanks to the entire team of academicians, student volunteers and support staff of University of Hyderabad for their support during the Finalists' Presentations. Special thanks to Dr Sanjay Kumar Sharma and his team at UoH. The support provided by the volunteers from Dr. MCR HRD Institute of Telangana is appreciated.

We are thankful to the Sri B P Acharya, IAS, DG, MCR HRD Institute of Telangana for having given us access to the facilities at the Institute for our meetings and discussions. We thank the entire team of MCR HRD for their support.

Shri GSN Prabhu, past Convener, SIG eGov, has been a source of strength and support in the end to end process of selecting the articles and bringing out this compendium and we convey our thanks in providing us an opportunity to mantle the role of 'Editors' for this year's compendium.

We are grateful to BS Publications for their desktop publishing support in bringing this compendium out under tight deadlines. We appreciate the timely assistance provided by our Publisher.

We wish to acknowledge the secretarial and technical support provided by Ms Pooja Tiwari and Ms V Rama Lakshmi.

Finally, we want to thank all the IT Secretaries, Project In-charge Officers, nominees who enabled CSI SIG eGov team to complete nominations assessment at all stages successfully within the timelines. Without their support, we would not have achieved this rigorous multi-stage evaluation process and bring out this Compendium, in time.

Dr. C V Ramamohan, Sridevi Ayaluri & N V Subrahmanyam
Editors

Message

Delighted to know that CSI SIG eGovernance Awards will soon be reaching the Awards stage for the seventeenth year in succession.

Having been a part of these awards from the inception in the year 2002, I have always been fascinated to see the response from the various government entities across the country engaged in a whole spectrum of activities of governance for societal benefit. With the base in place, there has been a pronounced drive by the government to move towards digital transformation using the emerging developments in Information and Communication Technologies.

The association and the support provided by M/S Nihilent Technologies for sixteen long years (2002-2018) is indeed commendable. I would like to thank the management team and the various personnel of Nihilent for their support. CSI SIG eGov expresses its gratitude, specially to Shri L C Singh, Executive Vice Chairman for the confidence and trust reposed in the shortlisting and evaluation framework developed by the core group and continuous improvement of the same over years.

I congratulate the CSI SIG eGov team for taking on the mantle and move forward in the year 2019, with the eGov awards. It called for dedicated efforts, long hours and focussed attention to matters micro and macro for successful conclusion of the various processes set. The team of volunteers who supported this activity pan India is a matter pride. They deserve congratulations for their support.

I am delighted that CSI SIG eGov is bringing out another edition in the series of eGovernance success stories as compendium with the title *“Towards Digital Transformation - Selected eGovernance Initiatives 2019”*, containing presentation of the learnings and best practices in deploying eGovernance solutions addressing Governance issues affecting all stake holders cutting across various sectors/domains. Such compendia have become a good reference source of knowledge for practioners and researchers in the eGovernance domain over the years.

With the various initiatives of the government entities taking a firm shape, leading the country towards good governance, we surely have to look at eGovernance from a digital transformative approach of a higher order that is in tune with the Sustainable Development Goals (SDG) set in place by the United Nations General Assembly. I am sure that the CSI SIG eGov team works towards setting the trend in the coming years in tune with the changing perspectives of eGovernance.

I congratulate the editorial team and all the Award winners for an excellent work done and convey my personal best wishes.

Dr Ashok K Agarwal
Founder CSI SIG eGov and CSI Fellow

Message

Computer Society of India has created Special Interest Groups (SIG) to engage in learning and knowledge creation in certain technology/domain areas of relevance by associating with practitioners. SIG eGovernance is one such group in existence for many years carrying out CSI's flagship event of recognizing eGovernance initiatives in the country by way of awards. It is indeed heartening to know the 17th in the series of such recognition has reached its concluding process for the year 2019 and some of the best practitioners from Central and State Government organizations/entities will be receiving the coveted awards renamed from this year as "CSI SIG eGovernance Awards 2019".

It is very gratifying to share that for sixteen long years, Nihilent Technologies of Pune had supported the Special Interest Group of Computer Society of India in its eGovernance journey. We are thankful to them for their whole hearted support.

ICT initiatives in the Government sector have the ability to create value for the entire milieu of stakeholders. The eServices that are provided by the government entities have greatly benefited the citizens in a major way in addition to increasing the efficiency and effectiveness of eGovernance across sectors. In tune with the Sustainable Development Goals set up by the United Nations, government entities have been working with renewed focus to adopt viable and relevant Information and Communication Technologies with a view to offer best possible solutions for digital transformation.

To continue the activities under CSI SIG eGov for so many years requires dedication and innovation driven by passion and commitment of individual volunteers responsible for driving the activities. Sustained participation by eGovernance practitioners of various Government organizations/departments is a matter of pride for CSI as it signifies value creation for each of them through CSI SIG's Award platform. I congratulate the Government officials for their unstinted support year after year. I also convey my sincere thanks to all the members of the SIG eGov team for their commitment and efforts.

I am delighted that CSI SIG eGov is bringing out another edition in the series of eGovernance select initiatives in the form of a compendium titled "Towards Digital Transformation - Selected eGovernance Initiatives 2019". These Compendia, over the years, have become a source for reference and generation of fresh initiatives. For the serious eGovernance researchers and practitioners, these books have been of great value.

I congratulate the editorial team, SIG eGovernance team and all the Award winners for their excellent contribution and convey my personal best wishes.

Prof Akshaya Nayak
President, Computer Society of India

Message

I am extremely happy to note that a Compendium is being published by the CSI SIG eGov Group titled “Towards Digital Transformation - Selected eGovernance Initiatives 2019”. The articles in the book cover a wide range of sectors across the country, and I congratulate the various government entities for their participation and the eGovernance team for their dedication and efforts.

Having been associated with the CSI and the Special Interest Group in eGovernance for a long time and in my capacity as a member of the evaluation team that looked into the initiatives of the governmental units, I can say for sure that ICT brought about a sea change in the governance activities of the various entities in the government and we are all set to take eGovernance to a higher level sooner than later. Credit goes to the SIG-eGov team and the volunteers who supported this activity year on year for the seventeenth year running. Their dedicated and untiring efforts deserve to be commended. I wish the team all the best for a successful conclusion to the CSI SIG eGovernance Awards 2019.

With Best Wishes

Sri Manas Ranjan Pattnaik

Chairman, Division I, Computer Society of India

Preface

Towards Digital Transformation - Selected eGovernance Initiatives 2019

Over the years, the usage of ICT for transformational changes in governance has been the cornerstone of our journey. The invited article on eGovernance in the agriculture sector sets the tone for our readiness to be in a position to use technology and quickly build solutions for the overall benefit of the citizens across the country.

The states are moving forward with innovative ideas and methods for the adaptation of relevant technologies and have been vying with each other for being in the forefront of being tagged amongst the most acclaimed of the eGoverned states. The story of the government of Haryana and the strides made by them gives us an indication of the possibilities that exist in using technologies for increasing efficiency and governing effectively. The story of Odisha with a plethora of forces of nature working on them, adds another perspective to ICT in eGovernance.

Well started is perhaps half the work done. Sustenance is the real key for long term development and accomplishment of plans and programs set with deep thinking processes. In this context, it is pertinent to share that two of the projects that were recognised with Awards of Excellence in the year 2013-14, the Open Government Data Platform and the Online Pre-Harvest Test System (PHT) using Farm Enrolment Database, both of the Government of India, continue to make progress to make additions so as to make the solutions work better year after year.

The projects that feature in this compendium cover a wide range of sectors. Be it Agriculture, Citizen Services, Education, Energy, Revenue, Security, Transport or any other governmental service/initiative, the central theme has been one of embarking on a digital transformation journey. There are projects that have used Liveness Check and principles of AI and some have used data analytics extensively. One successful initiative presented by one nominee pertains to building state wide enterprise architecture on the principles set in IndEA framework with lessons learned during the implementation journey.

All in all, the Compendium contains wealth of information that may be of immense value to decision makers, policy enunciators, practitioners and researchers in the field of eGovernance. We acknowledge all the efforts put in by the departments in sending their initiatives. We at CSI SIG made an effort to validate the submissions made by respective nominations and assess them. It is advised that prospective readers make their own assessment while deriving any inferences.

Dr. C V Ramamohan, Sridevi Ayaluri, and N V Subrahmanyam

Section - I
Invited Article

Agricultural Sector – eGovernance is the way

Ranjna Nagpal

Agriculture in India is a very complex subject. It is undergoing major changes and there is sharp decline of share of agriculture in rural employment and economy in last decade. In spite of this, it is still major source of employment and the whole economy of the country depends on agricultural sector. Agricultural sector has its own inherent problems like dependency on monsoon, timely availability of agricultural inputs, volatility of market prices, non-awareness about new technologies and techniques among farmers, availability and affordability of farm machinery are some of these. Farming is not always economical and many times farmers are unable to recover the input cost due to many factors. Distress is being noted in this sector. Government is implementing various schemes and programs to help this sector coming out of distress. Emphasis of government is to take the services directly to the end user, which is farmer in this case. Information and Communication Technologies (ICT) can be used in implementing the schemes and programs efficiently, effectively and in a transparent manner so as to meet the objective of direct benefit transfer to the beneficiaries. E-governance is the application of ICT for delivering the government services, carry out transactions and processes.

This article discusses the measures taken by Government **of India** for agricultural sector and how e-governance is helping in implementing these measures and delivering services directly to the end users.

The most recent measure taken by the Government of India is to augment the income of the Farmers is through the launch of the Scheme, “Pradhan Mantri Kisan SAMman Nidhi (PM-KISAN)”. Under this scheme, financial support is being provided to Farmers through Direct Benefit Transfer. Rs. 6000 per year is being transferred in three equal instalments of Rs. 2000 each every four months into the bank accounts of eligible landholding / farming families. The objective is to provide timely assistance to the farmers for farm operation by Direct Transfer of Benefits to their Bank Accounts.

PM-KISAN portal provides the mechanism for transferring the funds directly to the accounts of the farmers identified by the States and UTs. It (<http://pmkisan.gov.in>) helped in providing timely assistance to the farmers as well as in providing the effective tool for monitoring the progress of the scheme and transaction details at all levels. ICT intervention thorough PM-KISAN portal has made the large scale disbursal of funds possible in very short duration of time in a large scale.

Soil health plays an important role in crop production. Soil health card scheme is launched to issue Soil Health Cards (SHC) to farmers every 2 years. Soil Health Cards can be generated in 22 languages and 5 dialects for the benefit of farmers in uniform

and standardized format across country with automatic calculations of fertilizers based on soil test values using General Fertilizers Recommendations and Soil Test based Crop Response. A SHC provides the farmer with the nutrient status of his land and gives recommendations on the dosage of fertilizers, bio-fertilizers, organic fertilizers as well as soil amendments to maintain soil health in the long run.

There is a growing awareness and demand for organic products among consumers. Certification of organic products helps in giving assurance to the consumer about the product. Government provides certificate for organic products under PGS-India programme. PGS-India portal provides online platform for applying for certification of various organic products.

Cost of Cultivation Scheme is implemented to evaluate the expenditure incurred by the cultivators on various inputs for the crops under study. The cost of cultivation and production of agriculture crops are the most important components in the fixation of the Minimum Support Prices of various agricultural commodities which form the basis of Agriculture Price Policy in India. The ICT based system FARMAP facilitates capturing of data through 22 schedules for selected set of 10 farmers for calculating estimates for 27 principal crops.

Fertilizer subsidy is second-largest government transfer, with an estimated outlay of over Rs. 70,000 Crore per annum. Department of Fertilizers has introduced Direct Benefit Transfer (DBT) of Fertilizer Subsidy to Farmers scheme to capture the fertilizer sales by retailers through PoS devices on Aadhaar based biometric authentication and subsidy payment to companies on weekly basis. Benefits are Real time fertilizer stock availability at all stock points in the country, Effective monitoring of fertilizer movement, Performance Report and analytical Dashboard, Integration with Soil Health Card, Integration with PFMS application for subsidy payment, Paperless and faster processing of subsidy claims.

ICT based system AGMARKNET facilitates collection of daily market information from the agricultural markets and its dissemination through the portal for the use of various stakeholders. Besides daily market information, the portal contents include price behaviour, weekly/monthly price and arrivals, market profiles & commodity profile.

For industry, online systems are available for

- Registration of pesticides for manufacturers of the pesticides,
- Issuance of Phytosanitary Certificates and Import Release Orders for plant and plant products
- Sanitary Import Permit for animal and animal products to exporters and importers.

Government is giving high priority to water conservation and its management. Department of Water Resources, River Development and Ganga Rejuvenation has

implemented various e-Governance systems such as 'Issue of NOC to Abstract Ground Water (CGWA-NOCAP)' and Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to monitor the Physical and Financial progress of various irrigation schemes.

In Animal Husbandry, Dairying & Fisheries (DAHD&F) sector, various e-Governance systems have been implemented such as Live Stock Census, National Animal Diseases Reporting System, Veterinary Hospital Directory services, Registration Details for fisheries, Scheme details.

Despite implementing various welfare schemes and even after increase in production, agricultural sector is facing major challenges, as real farmer is not being benefitted and Government is trying hard to reach farmers through innovative ways. ICT and new technology trends like Big Data, Artificial Intelligence, Internet of Things and Block chain technology can help in these efforts.

ICT in Agriculture can be used for

Dissemination of relevant, timely and reliable Information to Farmers

- Improved multilingual Farmer's portal with content management framework and real time information sharing.
- Centralized Mobile App for capturing details of farmer at field level and providing various farmer centric services.

Standardization and Integration of Databases

- Creation of Farmer database and Farmer's Profile
- Village Profiling for better planning
- Open Platform for Agriculture – All related data in Agricultural Sector, Water Resources, Fertilizers on one open platform to serve open APIs.

Application of Advanced Technological Tools

- Artificial Intelligence for (i) farmer's identification (ii) Pest Management (iii) Alternate Crop Proposition
- Block chain for Organic farming
- Internet of Things (IoT)
- Data Analytics for analyzing trends
- Application of GIS technology

Artificial Intelligence

AI can help in identifying the farmer, currently government schemes generally use Land Records for identification and verification of a farmer. However a Farmer can be: Land Owner, landless farm worker or cultivators. A unique Identification is required, which can be used for identification of every individual farmer in the farming community to determine the volume of farming business and for disbursement of benefit to the needy. There are IDs like Kisan Credit Card, Aadhar Card etc. and many other databases which store farmers details in the available

farmers database of the farmers and often kept non-mandatory. In the absence of mandatory IDs, it becomes difficult to identify the duplicate records. AI technology may help in identification of farmers and their authentication against the relevant database using one of the many IDs provided by the farmers. This can be expanded to identification, based on Farmer name, father's name, village and address i.e. even without any ID.

Intelligent Pest Management with the help of AI technology may help in prevention of crop production losses. Repository of crop wise major pests, Pest and attack images, Symptoms, Prevention & Cure, Side effects (77 IPM Packages are available), Conditions favourable for likely occurrences of pests, Pesticides and their availability in nearby area, Area, production, severity of attack and coverage, Loss estimates, GIS for estimation of pest coverage and loss estimation may act as input needed for building the AI system

AI based Alternate Crop Proposition System can be used for providing suggestions for alternate crops which may increase profitability of the farmers. The system may consider parameters such as Good Agricultural Practices, soil types, water requirements, present conditions of the location, estimates in terms of seeds, fertilizers, pesticides and their cost, labour requirement in terms of manpower and animal power, implements and machinery requirement & hiring charges, production estimates, cost of cultivation, prices and arrivals, profits calculation for each crop and its variety, etc. for suggesting the alternate crop.

Block chain for Organic farming

Block chain technology can record transactions in real time and provide up-to-date supply and demand information. Using it, farmers can decide about the prices and the quantities they want to sell.

Block Chain can record unalterable information at every step in the food supply chain. Block Chain technology can provide reliable information regarding the origins of Agriculture commodity. It could enable consumers to verify the origin and certification of the agricultural product he is purchasing. Additionally, the improved supply chain transparency could also greatly benefit farmers by increasing the credibility.

Data Analytics for analysing trends

The availability of large historical databases in Agriculture, Fertilizer, and Water Resources has provided opportunity for applying data analytical techniques to study the various trends and draw inferences. This analysis can be helpful for formulation of Government schemes accordingly. The data is available for commodity arrival and prices under Agriculture Marketing, Soil Health, Water Resources, Fertilizers, Area, Production, Yield, Crop Insurance, Livestock, etc.

The following are the areas which can be further benefitted by data analytics

- Prices and arrivals trends of commodities
- Pattern in changes in Soil Health
- Patterns in changes in water availability in the area and factors
- Trends in Fertilizers Utilization
- Trends in Livestock ownership

Data Analytics is currently applied to large database applications in Agriculture like Soil Health Card, Agmarknet, Irrigation (PMKSY), Fertilizers for analysis and future planning.

Application of GIS technology

GIS helps in pictorial representation of data. Location wise patterns can be identified using GIS. There is a potential for developing more precise GIS applications in agricultural, Water and Fertilizers Sector.

Application of GIS Technology in Agriculture:

- Soil Health – Maps in terms of fertility index
- Water Resources – Maps about water tables, Irrigation facilities, location of dams
- Fertilizers – Location wise availability of fertilizers and movement

Interactive Voice Response System (IVRS)

An IVRS/ASR application has been developed under AGMARKNET for getting Commodity prices in the markets across the country over phones. The selection of all the options are voice enabled. So a caller, especially on a mobile phone, would find it easier to use the IVRS as s/he does not need to punch keys to select options. The caller can ask for language, state, district, markets and the commodity for the pricing information. The caller can further navigate to another mandi and commodity for prices with repeat option available to hear the different commodity prices again and again.

Internet of Things (IoT)

By using various smart agriculture gadgets like IoT sensors, farmers can gain by better control over the process of growing crops, making it more predictable and improving its efficiency, raising livestock. The following IoT applications can be inducted into agriculture to increase productivity.

Crop management

IoT technology in agriculture can help in precision farming using crop management devices which can be placed in the field to collect data specific to crop farming; from temperature and precipitation to leaf water potential, soil nutrients humidity and overall crop health.

Thus crop growth can be monitored and any anomalies to effectively prevent any diseases or infestations that can harm the yield.

Cattle monitoring

IoT agriculture sensors can be attached to the animals on a farm to monitor their movement, health and log performance.

Sample Testing Applications

RFID can be used as e-Seal for samples of fertilizers, pesticides, seeds etc. for making it tamper proof. NIC has proposed the use of RFID special tags for sealing the Pesticide samples in Central Pesticide Analysis Information System (CPAIS) for unique identification of e-seals (rectangle stickers type, for one time use only) that can be attached at the neck of the pesticide bottle. Once the tag is placed on the sample and when anybody tries to open the bottle, the delicate circuit inside the tag will get broken and the RFID reader integrated with system will not identify/read the tag and hence it will be marked as tampered sample. Use of barcode is also proposed for tracking of the samples inside the laboratory.

Fertilizers Movement

Fertilizer movement can be monitored through IoT devices on logistics attached to IT systems dashboard for getting up-to-date information of availability of fertilizers to farmers.

Water Levels

Sensors can be deployed to collect information about the water level and irrigation status for monitoring of fields.

Thus using new technology, the activities can be monitored and analyzed through powerful dashboards with analytical capabilities. It offers remote farm monitoring capabilities and allows you to streamline various operations.

Conclusion

Government is providing services to farmers and stakeholders through various e-Governance applications implemented in Agricultural Sector at National as well as State level. Further to this cause, for betterment of farming community latest technology tools like Artificial Intelligence, Block chain, GIS, IVRS, IoT, open source technology etc. can be applied and awareness needs to be created about these among the users.

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Section – II

State Initiatives

Haryana State

Ankur Gupta

Key aspects of the State's eGovernance Roadmap for the next five years

The State of Haryana has aligned its vision to three focus areas of Digital India Program given as under:

- Digital Infrastructure as a Utility to Every Citizen
 - High speed internet
 - Cradle to grave digital identity - unique, lifelong, online, authenticable
 - Mobile phone & Bank account enabling participation in digital & financial space
 - Easy access to a Common Service Centre
 - Shareable private space on a public cloud
 - Safe and secure Cyber-space
- Governance & Services on Demand
 - Seamlessly integrated across departments or jurisdictions
 - Services available in real time from online & mobile platform
 - All citizen entitlements to be available on the cloud
 - Services digitally transformed for improving Ease of Doing Business
 - Making financial transactions electronic & cashless
 - Leveraging GIS for decision support systems & development
- Digital Empowerment of Citizens
 - Universal Digital Literacy
 - Universally accessible digital resources
 - All documents/ certificates to be available on cloud
 - Availability of digital resources/ services in Indian languages
 - Collaborative digital platforms for participative governance
 - Portability of all entitlements through cloud

In line with the above-mentioned focus areas, Government of Haryana has notified four policies i.e. IT & Electronics System Design and Manufacturing (ESDM) policy, Cyber Security Policy, Communication and Connectivity Infrastructure Policy (CCIP), Start-Up & Entrepreneur policy to facilitate the implementation of the projects under these focus areas.

Examples of State level Institutional partnership plans

- Government of Haryana aims to foster the Innovation & entrepreneurial ecosystem by providing necessary support to the young entrepreneurs as per provisions of policy/ schemes and establishing connect with industry/ academia while providing access to industry experts in the field of emerging technologies. In this direction,

- HARTRON Multi Skill Development Centre (HMSDC) has been established with a total area of 1,20,000 Sq. feet wherein incubators have been made operational to boost the Innovation & entrepreneurial ecosystem in the State.
- The GoH 10x Mobile Hub with IMAI has been created to foster Haryana's Innovation, Entrepreneurial & App development eco-system and further make Gurugram a global Hub for apps innovation, development & testing.
- A Centre of Excellence for Internet of Things (CoE-IoT) has also been established since 5th October 2018 with NASSCOM as knowledge partner to create the physical infrastructure labs for IoT domain for development & validation of solutions in the field of Health, Agriculture, Water, Transportation, Energy etc. from designing to prototyping in collaboration with Government, Industry & Academia along with a full-fledged operational 'IoT lab'.
- In addition to this, the NASSCOM 10K Start-Up Warehouse aims to make the state a global start-up destination. It shall also facilitate early stage technology start-ups through incubation, acceleration & academia link.
- For encouraging Women entrepreneurship, the United Nations Technology Innovation Lab (UNTIL) is being established which shall also enhance digital inclusion through – 'Global venture capital/ investment in women in technology', 'Support local women start-up eco system with global collaborations' and 'Promote global technological opportunities for women in Haryana'.
- Government of Haryana is in an advanced stage for setting up Centres of Excellence for "Block Chain" Technology at STPI Gurugram with State of Art Incubation facilities admeasuring approximately 10,000 Sq. ft.
 - CoE will use IBM Block chain platform built on Linux Foundation's hyper ledger Fabric and Hyper ledger Composer. The IBM Block chain Platform provides a managed, full stack block chain-as-a-service (BaaS) offering delivered through the IBM Cloud.
 - CoE will also explore other emerging platforms for block chain technology and not be restricted to IBM platforms only.
- Hon'ble Chief Minister of Haryana has signed six MOUs with different companies in London on 12th May 2019 to facilitate investments in Haryana in diverse fields, including Fintech, Smart Cities, Emerging technologies, Transfer of advanced technology and setting up of an IoT Innovation Centre in Gurugram.
 - The MOU with UK India Global Business Limited (UKIGB) seeks to promote development of smart technology infrastructure (STD), especially focused on aero-space and defence companies
 - The MOU with Pontaq, a UK India Innovation Fund, aims to focus on Fintech, Smart Cities and Emerging Technologies.
 - The MOU with Xelba Limited, under which Xelba will provide intellectual property and knowledge and hardware and software tools to deploy such a project, along with the creation of an IoT innovation centre in Gurugram.

- The MOU with Relmatech Limited, a leading provider of Remote ID and Tracking Systems for unmanned aircraft systems or drones, would increase development activities in the field of remote ID and tracking of unmanned aircraft systems in Haryana.
- The MOU with Good Box will offshore a multitude of functions, including both manufacturing and services.

The MOU with Zap Go Limited, developer of a new generation of fast-charging energy storage devices would help in establishing a manufacturing site for Zap Go in Haryana.

Key challenges faced in the eGovernance journey

A few of the initiatives of the state in its eGovernance journey and the challenges faced are presented here.

Haryana Cashless Consolidation Portal (HCCP)

Haryana Government identified that the State needs to reduce its unusually high dependence on cash to bring in much needed transparency and efficiency in the system, which necessarily does not mean advocating a cashless society, however a less-cash society would be a fairer and safer place. Today, Haryana along with India is moving persistently towards a less cash economy or digital economy since encouraging cashless transactions has the potential to curb tax evasion, corruption and the use of hard cash in crime.

This is being achieved by having most of the G2C services using online mode & accepting / disbursing any kind of payment in digital way; however, to achieve the desired results and less cash society, it was most important to monitor the progress of different modes of digital payment transactions.

The biggest challenge that was faced by the Government was the absence of any single view of all digital transactions taking place in the State. The need was felt to create a Consolidation Portal to consolidate the various transactions and their modes taking place throughout the State to ascertain the Progress vis-à-vis Target of Digital Transactions being assigned to the State by Government of India. The key challenges faced were:

- Consolidation of Cashless transactions from different stakeholders
- Integration of Cashless Portal with different stakeholders
- Designing the data exchange formats, the financial institutions are familiar and comfortable with
- Consistent follow ups with the departments, banks and wallets for collection of information
- Ideal way would be to integrate the API of the portal with the department to create a seamless data updation process
- Often the data may have to be collected manually through e-mails

- Use technologies that allow for seamless data updation and permit for changes in portal functionalities, look and feel so customization is possible, if required

Keeping this in view, the initiative was envisaged and an integrated monitoring tool i.e. “Haryana Cashless Consolidation Portal (HCCP)” was developed to monitor the progress and penetration of different modes of digital payment transactions in the State. HCCP is a digital payment transaction monitoring & tracking system, helps in increasing transparency, enhancing financial inclusion and ensuring a healthy financial ecosystem in the state. It provides an easy & seamless way to on-board any new/ existing payment agencies to share cashless transactions data with HCC Portal and various analytical reports such as prevalent modes of payment for utility bills, commodities payment, etc. This platform provides in-depth analytics and supports decision making for taking various steps to promote cashless payments & achieve less cash society. The portal also serves to facilitate digital literacy and financial literacy for citizen. A total of 258 Cr+ digital transactions from April 2017 till August 2019 have been reported. Even states such as Tripura, Daman & Diu, etc. have agreed to replicate the same portal in their respective states and their replication is in progress.

Haryana Information Security Management Office (ISMO) Portal

Earlier, Information Security Management Office (ISMO) was being contacted by the State Govt. Organizations for their Information Security related requirements. Many of the queries of the departments stakeholders can be resolved if they have knowledge and awareness of cyber security concepts. Hence, there was a need to provide a platform to such stakeholders to enable suitable dissemination of cyber security related content and information. The following were the on-ground challenges:

- Regular awareness and sensitization of stakeholders on cyber security concepts and threats
- Conducting Information, Education and Communication (IEC) activities at ground level for public awareness
- Continuous management of vulnerabilities at department level applications due to lack of knowledge and awareness
- Continuous Monitoring of Security threats on Cyber Space
- No centralized platform for addressing the above issues

With a view to address the above challenges, the Haryana ISMO portal was conceptualized. The ISMO’s web portal acts as a platform for information dissemination on latest trends on cyber-attacks, preventive measures, awareness materials, policies, guidelines, creating awareness among the masses about cyber security and hygiene factors. The portal acts as a first level interface for cyber security related knowledge and possible preventive steps one can take to mitigate cyber-attacks.

As part of the portal, a full-fledged e-learning module is under implementation. Once this is operational, it will provide course on cyber security to various stakeholder (Students, working professionals, Govt. officers, IT professionals (Govt. and private sector) etc.) so that they can adopt best practices with respect to cyber security, information security and data privacy etc. and apply these in their day to day life. The user after completion of the e-learning course, will also be provided with a completion certification from ISMO, Haryana.

Toll free number 1800 180 1234 for facilitating the Citizens on their Information Security Needs & reporting of the incidents with a procedure to provide remedies, counter the attacks and follow-up with police & national agencies for appropriate escalation (if required).

B1 Online Lower School Entrance Test Portal

The B1 project is an online test system (<https://b-1test.haryanapolice.gov.in/>). It is an initiative of Government of Haryana to streamline the promotion of police staff at the rank of a Constable of Haryana Police Department.

This project (Online Lower School Entrance Test-2018) was envisaged in line with the requirement of Government of Haryana to promote the Constable Rank of Haryana Police Department. The police department already had a legacy application for conducting examinations for promotion of police staff from the rank of the constable. Since, the exams were conducted in a decentralized manner, no real-time evaluation and reporting mechanism was in place for the senior management at the head office to make prompt decision-making and have better control over the proceedings of the exams. Presence of the invigilating officer was mandatory to conduct a fair examination and the result of the individual centre was collated at the head office to eventually derive the exact outcome of the examination. The result generation was also limited to the centre where the exam was getting conducted, which in return added to the overall processing time for conducting the examination and declaring the results.

To overcome these challenges, the Department of Information Technology, Electronics and Communication, Haryana (DITECH) with the help of police department created a cloud based online solution to conduct online lower school entrance test. The B1 Online Lower School Entrance Test Portal completely automated the old decentralized procedure of conducting exams.

- Online examination is designed for Haryana Police Department for the promotion of their constable level rank on regular basis.

- Test Application is a web-based application and it can be used anywhere any time (as per user preference)
- Minimal restriction of the invigilator is required in the exam centre as every candidate will get random set of questions.
- Login attempts restricted for candidate to cross check any mischievous attempt in the exam.

Real Time Dashboard of every centre/ candidate/ results available to the User

Result Indicators– a few Beneficial Outcomes

The benefits that accrued to the targeted stakeholders as a result of an overall strategy driven by ICT interventions are presented here.

Citizen Service Delivery

SARAL (Simple, All-inclusive, Real-time, Action-oriented, Long-lasting portal) facilitates in aligning with Digital India's vision of faceless, paperless and cashless service delivery model. SARAL has been developed on Service Plus Framework and aims to transform citizen service delivery in Haryana through complete digitization of services. The vision for SARAL is a unified platform to deliver and track Government-to-Citizen (G2C) services across the state. Haryana has become the first state to launch online delivery of 503 Govt. Schemes and Services via a single platform (SARAL). Citizens can also access these services through approximately 4000 Atal Seva Kendras and 115 Antyodaya Kendras throughout the State through SARAL. The vision is to deliver all the 550+ services and schemes to the citizens through the SARAL Platform.

Durga Shakti App (Police Department, Haryana)

Durga Shakti App is an initiative from the Haryana Police team for women safety. In case of emergency, the victim can seek immediate help of police through 1091 (Women Helpline Number) through this application. After downloading the app, any woman who is in distress can send information including the GPS location to the Women Help Line number of the respective district through WhatsApp by just pressing a red button on the application. Once the button is pressed, the victim doesn't need to speak, her GPS location, blood group and other details shall be sent to Women Helpline number as a WhatsApp message. However, it is mandatory to register once on this application. If required, the victim can also speak to the operator via this application. Once the GPS location is received by Women Helpline, it sends the same to the nearest PCR vehicle. The PCR vehicle can make use of the GPS location received on WhatsApp to determine the victim's location and reach there at the earliest to help. In addition to this, Police can also send messages and tips about woman safety & security to the users of the application. It can also be used by a woman or girl in an emergent situation outside the State wherein it can inform the Haryana Police through the Durga Shakti application. The main aim of

this application is to reduce the response time of the Police to provide help to the women or girls in distress.

Public Grievance Management System (CM Window)

CM Window is a grievances redressal and monitoring system which has been implemented in all districts and all departments of Haryana as a Flagship programme. The grievances are registered at the CM Window counters online and the citizens get SMS on their mobile phone with the grievance registration number. This number is used by complainant for tracking of grievance redressal online. CM Window has been implemented at all Districts at e-Disha Kendras & Sub-Division Offices in Haryana. More than 5.5 lakh grievances have been received and more than 90% of the grievances received have been addressed successfully through the platform. As on 1 May 2019, more than 5,84,654 complaints/ grievances were through the CM Window and out of these 5,49,966 grievances were resolved.

PM-Kisan:

With in record time of 7 days, State level software was developed & hosted for State/ district level functionaries to enter PM-Kisan applications collected through state level survey. By 10-03-2019, 1st instalment was paid to 89% of the farmers out of 13,48,851 registered farmers. This effort was greatly appreciated.

Common Service Delivery:

- Here are a few of examples of the way the State has achieved integrated common service delivery through resource sharing between departments as a result of State level policy/ strategic interventions. Haryana has become the first state to launch online delivery of 503 Govt. Schemes and Services via a single platform (SARAL). Citizens can also access these services through approximately 4000 Atal Seva Kendras and 115 Antyodaya Kendras throughout the State through SARAL. The vision is to deliver all the 550+ services and schemes to the citizens through the SARAL Platform.
- 390 Services of 33 Departments of Government of Haryana have been integrated with Rapid Assessment System (RAS) which empowers citizens to submit transparent feed-back of the services they have availed. As on date, more than 47 Lakh+ feedback communications have been sent through RAS. RAS – IVRS Integration is in the final stages of Go-Live.
- Implementation of Digital Locker is being carried out in the state. 19 documents of 7 departments already integrated with Digital Locker have been made available through the Digi Locker. A Government Order is being issued for integrating all certificate related documents over Digi Locker platform

eGovernance best practices of the state

- CM Dashboard is established on which monitoring of different departments on 391 KPIs/ parameters is carried out on a regular basis

e-Governance enabling processes

The Government of Haryana has developed and notified some policies aimed at driving economic growth in the State.

- **Information Technology and Electronics System Design and Manufacturing (IT & ESDM) Policy**

- Focuses on
 - Dedicated Land parcels allocated to IT/ ITeS and ESDM units
 - Relaxation in Taxes, Stamp duty and electricity duty to IT/ ITeS and ESDM units
 - Cashless, Paperless and Faceless Governance and
 - Mobile first and cloud Platforms
- Single window System has been implemented to facilitate the investors
- New Entrepreneurs have started approaching IT Department for setting up new manufacturing units in the State of Haryana.
- A dedicated Nodal Officer from HARTRON has been deputed in July 2018 in Haryana Enterprise Promotion Centre, to facilitate the investors throughout the investment lifecycle, spanning from proposal application to approval of licenses/ clearances
- 16 Incentive schemes under IT & ESDM Policy have been prepared and approved in principle
- A Memorandum of Understanding (MoU) has been signed with M/s Mitra Medical Services LLP on 5th September 2018 for setting up their manufacturing unit for manufacturing of medical electronics devices in Faridabad. This project will bring 30 crores investment in the State of Haryana with an expected employment of 120+ employees.

- **Startup Policy**

- Provision for infrastructure Augmentation for Startups has been included
- The HARTRON Multi Skill Development Centre (HMSDC) was established with a total area of 1,20,000 Sq. feet to boost the startup eco system in the state
- 3 Incubators 'NASSCOM 10K Startup Warehouse', 'IAMAI-GoH Mobile 10X Hub' and 'Center of Excellence for Internet of Things (CoE-IoT)' are operational
- 45 Start-ups (125 seats) are being incubating at the 3 Incubation Centres
- MOU with United Nations Technology Innovation Lab (UNTIL) for focusing women entrepreneurs is already signed and one with STPI for Block chain technology is under process

- **Communication & Connectivity Infrastructure Policy**

- The CCI Policy amended and notified on 6th October 2017 to align with provisions of Indian Telegraph Row Rules 2016, include liberal provisions of Govt. of India and suggestions of stakeholders such as Tower & Infrastructure Providers Associations (TAIPA), Cellular Operator Association of India (COAI)
- The number of undertakings from Telecom Infrastructure provider reduced to one single format each for over and under ground
- Specific guidelines have been added for installing communication/ mobile towers on Govt. land & buildings

- Provisions to form committees at State & District level to address public grievances have been given
- The process of Right of Way has been made online and integrated with invest Haryana portal
- **Cyber Security Policy**
 - Focuses on Cyber Security Incident Management, Privacy Management, Compliance, Frameworks and protection of IT/ ICT Systems
 - Provision for setting up of Cyber Security investigation labs
 - Capacity Building in alignment to national requirement

Apart from this, Government of Haryana made changes to the MSMEs Development Act, 2006 to notify preferences and policies for procurement of Goods & Services produced & supplied by Micro & Small Enterprises to the Government Departments/ Agencies from time to time in order to facilitate promotion and development of Medium & Small Enterprises.

State level initiatives towards Capacity building for e-Governance Development and rollout of ISMO e-Learning Portal:

The vision of the project was to provide a platform to the Students of Haryana to learn basic concepts of Cyber Security and develop their cyber hygiene, which will enable building up of safe, secure and resilient cyber space in Haryana.

The Haryana state government has been a key driver for increased adoption of IT-based products and IT enabled services to citizens, Government Stakeholders and businesses. Such initiatives have enabled increased IT adoption in the state which have led to creation of large-scale IT infrastructure with corporate / private participation.

With the evolving IT infrastructure landscape and tremendous increase in number of services being offered through IT systems, there emerged a need to address the cyber security challenges. In view of the above the Information Security Management Office (ISMO), Electronics & IT Department Haryana initiated proactive measures to increase awareness and understanding of Information security issues among the end user working in State Government domain and Students.

Further, the Cyber Security Policy 2017 of Government of Haryana was launched by Hon'ble Union Minister, Electronics & Information Technology Shri Ravi Shankar Prasad and Hon'ble Chief Minister Haryana on September 2017. One of the important aspects of the policy envisages, building cyber security hygiene among students which are approximately 5 Lakh in number.

In view of the above, Head SeMT/ CISO, Govt. of Haryana through in-house team of developers has developed a full-fledged e-learning module under the ISMO portal which provides courses on cyber security, primarily with focus on Students, such that they can adopt best practices with respect to cyber threats, information security and data privacy etc. and apply these in their day to day life. The e-Learning

module was launched by the Hon'ble Finance Minister of Government of Haryana on 15th January 2019 at Digital Innovation and Cyber Security Summit at Gurugram.

The e-Learning module presently covers courses on different areas of Cyber Security, the list of topics are as follows:

- E-mail Security
- SPAM
- E-Mail Threats & Tips
- E-Mail & Chatting
- E-Mail Fraud
- Threatening E-Mail
- Account Hacking
- Internet Security
- Phishing
- Chatting
- Malware
- Virus
- Wi-Fi
- Cyber Bullying
- Key Logger
- Mobile Security
- Ransom ware

The content of courses is designed in collaboration with Centre for Development of Advanced Computing (CDAC), an Autonomous Scientific Society of Ministry of Electronics and Information Technology, Government of India

The e-learning module will provide a platform to the Students of Haryana to learn basic concepts of Cyber Security and develop their cyber hygiene, which will enable building up of safe, secure and resilient cyber space in Haryana

There are approximately 5 lakh school students in Haryana and the Haryana Cyber Security Policy envisions creating cyber security awareness among these school students. The e-learning platform is an ideal platform to enable the mandate of the policy to create cyber security awareness among 5 lakh students of Haryana which would have otherwise cost the State Govt. close to Rs 5 Cr. considering per head cost of Rs 100.

The e-learning platform enables the courses are under two categories a) for students from 5th to 8th standard and b) for students from 9th to 12th standard, accordingly students can understand the course content with respect to their standard and use that to develop cyber hygiene.

After completion of the course content, the student goes through a multiple-choice question based 'Quiz' and if the quiz is successfully completed a system generated certificate from ISMO is given to the student.

- Memorandum of Understanding (MoU) has been signed between Survey of India, Department of Science Technology, Government of India and Department of Revenue & Disaster Management, Government of Haryana on 8th March 2019 for Large Scale Mapping using UAV (Unmanned Aerial Vehicles)/ Drones for Revenue, Urban and Rural area including Ground control Network and preparation of geo-referenced cadastral revenue Maps for State of Haryana. The project covers entire State of Haryana, approx. 44212 sq. km.

Haryana Government has decided on 1st June 2019 to conduct aerial surveys by using drones to keep a check on the illegal encroachment and construction on government properties in the State. To begin with, such survey would be conducted in Karnal, Gurugram and Faridabad. Urban Local Bodies department to take the assistance of Haryana Space Applications Centre (HARSAC) and National Remote Sensing Authority (NRSA) for the satellite imagery of the areas and for setting up of ground control points necessary for conducting the survey. Haryana is the first State to set up 700 primary and secondary ground control points in the State.

Awards and recognitions at State level for e-Governance initiatives

List of Awards – 2019

- Haryana Cashless Consolidation Portal has received Technology Sabha Award at on 16th February 2019 at Kochi
- Haryana Cashless Consolidation Portal (HCCP) has won the Excellence in e-Governance award at the CISO MAG Award on 26th March 2019
- e-learning Platform for Cyber Security, ISMO, Department of Information Technology, Electronics & Communication has won the Best Cyber security solution of the year - Education award at the CISO MAG Award on 26th March 2019
- Government Department for major digital transformation and services sector to IMC DT Awards 2018 to Haryana Cashless Consolidation Portal (HCCP) in April 2019
- Government Department for major digital transformation and services sector to IMC DT Awards 2018 to Haryana State Portal in April 2019
- Digital Leader of the Year (e-Governance) to Shri Ankur Gupta, PS (DITECH) - Business World Digital India Summit & Awards -2019
- Haryana Cashless Consolidation Portal (HCCP) for Best Financial Inclusion Initiative - Business World Digital India Summit & Awards -2019
- ISMO e-Learning Platform for Best Education and Healthcare Service Initiative - Business World Digital India Summit & Awards -2019
- Digital Leader of the year to Shri Manohar Lal Khattar, Hon'ble CM of Haryana – Digi Tech 2019 Awards
- IT Excellence Award for Durga Shakti Application Award by Express Computer – 18th September 2019

- IT Excellence Award for Adoption of Technology for various projects to Department of Information Technology, Electronics & Communications, Haryana by Express Computer – 18th September 2019
- The Haryana - Real-time Automated Feedback Dashboard (H-RAFD) won in the category of Analytics/Big Data in the Technology Sabha Award held on 08-10 August 2019

List of Awards - 2018

- The Employee Loan Management System project received prestigious CSI – Nihilent e-Governance Award of Appreciation – 2017, presented by Shri Rao Rajendra Singh, Deputy Speaker of Rajasthan Legislative Assembly, on 20th January 2018, at the 52nd Annual convention of Computer Society of India, at Science City Auditorium, Kolkata, West Bengal
- The Online Drug Inventory and Supply Chain Management System (ODISCM) project received Prestigious CSI – Nihilent e-Governance Award of Appreciation – 2017, presented by Shri Rao Rajendra Singh, Deputy Speaker of Rajasthan Legislative Assembly, on 20th January 2018, at the 52nd Annual convention of Computer Society of India, at Science City Auditorium, Kolkata, West Bengal
- The e-Transport MMP Implementation project received prestigious CSI – Nihilent e-Governance Award of Recognition – 2017, presented by Shri Rao Rajendra Singh, Deputy Speaker of Rajasthan Legislative Assembly, on 20th January 2018, at the 52nd Annual convention of Computer Society of India, at Science City Auditorium, Kolkata, West Bengal
- Technology Sabha Award (An Express Group Initiative) presented to E& IT Department, Govt. of Haryana in the category of Analytics/Big Data at Indore on 22-24 February 2018
- The Haryana – Real time Automated Feedback Dashboard (H-RAFD) won 4th BW Business World Digital India Submit & Awards presented to E& IT Department, Govt. of Haryana in the Category of Most Innovative Citizen Engagement through Technology on 18th May 2018
- Cashless Haryana Consolidation Portal won 4th BW Business World Digital India Submit & Awards presented to E& IT Department, Govt. of Haryana in the Category of Best implementation of Digital Payments on 18th May 2018
- The Haryana State cyber Security Policy Framework received Prestigious SKOCH Order of Merit Award – 2018, on 23rd June 2018 at, New Delhi.
- Haryana Cashless Consolidation Portal received Prestigious SKOCH Order of Merit Award – 2018, on 23rd June 2018 at, New Delhi.
- Paperless Haryana Implementing Digital Locker (PHIDL) received Prestigious SKOCH Order of Merit Award – 2018, on 23rd June 2018 at, New Delhi.
- Haryana Cashless Consolidation Portal has received best system Integration solution provider award in 3rd Elets BFSI CTO Summit awards on 12th Aug at GOA
- Authentication User Agency (AUA) Haryana has received most Promising IT solution award in 3rd Elets BFSI CTO Summit awards on 12th Aug at GOA

- Haryana - Real Time Automated Feedback Dashboard (HREFD) has received best data Analytics Solution in 3rd Elets BFSI CTO Summit awards on 12th Aug at Goa
- Paperless Haryana Implementing Digital Locker (PHIDL) has received Digital India Excellence Award at Elets Digital India Conclave on 30th August 2018 at Chandigarh
- Haryana Cyber Security Policy Framework Digital India Excellence Award at Elets Digital India Conclave on 30th August 2018 at Chandigarh
- Haryana Cyber Security Capacity Building Framework has received award at Awards at Elets Smart City Conclave on 16th Nov 2018 at Chandigarh
- Haryana Information Security Management has received eIndia Digital Transformation award at 13th eIndia Digital Transformation Summit on 13th December 2018 at New Delhi
- Haryana Cashless Consolidation Portal has received eIndia Digital Transformation award at 13th eIndia Digital Transformation Summit on 13th December 2018 at New Delhi
- Haryana State Application Audit Policy has received Skoch Order of Merit award on 22nd December 2018 at New Delhi
- Haryana State Cyber Security Capacity Building Framework has received Skoch Order of Merit award on 22nd December 2018 at New Delhi
- Haryana State Cyber Security Policy Framework has received Skoch Order of Merit award on 22nd December 2018 at New Delhi

List of Awards - 2017

- The e-District Haryana project received Prestigious CSI – Nihilent e-Governance Award of Excellence – 2016, presented by Dr. Ajay Kumar, Addl. Secretary MeitY, on 24th January 2017, at the 51st Annual convention of Computer Society of India, at Hotel LeMeridien, Avinash Road, Coimbatore, Tamil Nadu
- Dynamic Integration of Property Registration, Land Records and Cadastral Maps Haryana received Prestigious "Gem of Digital India 2017" award by Coeus Age Consulting & Sify technologies Ltd in collaboration with Ministry of Electronics and Information Technology (Meity) at the Shangri La, New Delhi on 7th June 2017
- The E-Samarth abbreviated as Smartness and Strength Analysis to Motivate Academically Weak for Rapid Learning Through Highly Efficient Methods": e-Samarth: The E-Learning Classes project received Prestigious SKOCH Golden Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- The E-Dashboard for Elections: Haryana's Indispensable Route for Monitoring & Enabling Transparency in Polling developed at NIC-Hisar project received Prestigious SKOCH Golden Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- The CM Announcement monitoring system for Chief Minister Secretariat, Govt. of Haryana received Prestigious SKOCH Golden Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.

- The CM e-Dashboard for CM office, Haryana project received Prestigious SKOCH Silver Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- The Haryana - Real-time Automated Feedback Dashboard (H-RAFD) received Prestigious SKOCH Silver Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- The Haryana State Rural Livelihood Mission project received Prestigious SKOCH Silver Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- e-GRAS (Govt. Receipt Accounting System) project received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Medico Legal Examination and Post-Mortem Reporting System with Integration of Laboratories of State of Punjab, Haryana & Chandigarh project received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Online Drug Inventory and Supply Chain Management System (ODISCM) project received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Revenue Court Cases Monitoring System (RCCMS), Haryana project received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Online inviting of applications and Online Entrance Test (OLET) for admission to AICTE approved Technical Courses in Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Preparation & Consignment of Jamabandis Karnal for the year 2016-17 received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Haryana State Information Security Management Office (HS-ISMO) received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Redesigning of Budget as Revenue and Capital in Integrated Financial Management System (IFMS), Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Aadhaar enabled Public Distribution System (AePDS) received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- e-Girdawari received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Haryana- Social Security Pension Schemes through DBT received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.

- e-District Haryana (e-DisHa) received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Agriculture Related License Issuance System received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- e-Stamping of Treasuries & Accounts Department, Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Online Treasuries Information System (OTIS) of Treasuries & Accounts Department, Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- e-GRAS- The Virtual Payment Aggregator of Treasuries & Accounts Department, Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Integrated Finance Management & Human Resources Management System (IFM #HRMS) of Treasuries & Accounts Department, Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Integrated e-Municipality System, of Department of Urban Local Bodies, Haryana, Haryana received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Visitor Pass Management System integrated with Security Check-in Mobile App, Haryana, received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Migration of all the Authorities of Haryana to Sarathi on Web (SOW4) – Online Services for Driving License related service to Citizen Haryana, received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.
- Migration of all the Authorities of Haryana to Vahan ver. 4 Online Citizen Centric Services related to Vehicle Registration, Fitness, Tax and Permit of Private and Commercial Authorities, received Prestigious SKOCH Order of Merit Award – 2017, on 9th September 2017 at the Constitution Club India, New Delhi.

List of Awards - 2016

- SRDB (State Resident Data Base) Establishing One-State One-View for all its residents. Aadhar is the primary key. De-duplicating the beneficiaries received Skoch Order of Merit Award-2016 at HICC Hyderabad on 8th September 2016
- Extensive ICT interventions in EoDB (Ease of Doing Business) with SWCS (Single Window Clearance System) & Investor Web Portal for industrial clearances, Integration of various regulatory services of different departments on Investors portal, and Online Service for Grievance Redressal and Dispute Settlement and extensive interactions with the consulting teams has helped Haryana to achieve rank 6th in EoDB ranking of Govt. of India in October 2016. During previous ranking, Haryana was at rank 14th in EoDB

- The e-Governance & digital Haryana initiatives have been recognized at national level. The State received the India Today's prestigious Award 2016 of Most improved State in e-Governance for the outstanding performance in e-Governance during last 2 years. The award was received by APSCM Haryana on behalf of Hon'ble CM on 5th November 2016 at New Delhi from Hon'ble Union Finance Minister of India

Received Digital India "Web Ratna State Silver" Award 2016 on 19th December 2016 from Shri Ravi Shankar Prasad, Hon'ble Union Minister MeitY, GoI

State specific e-Governance success stories case studies Publications – references

- "Journey of Haryana State towards Less Cash Economy" was selected and published in the "Compendium of Selected Papers 2019" booklet published by Dept. of Administrative Reforms & Public Grievances (DARPG), Ministry of Personnel, Public Grievances & Pensions, Government of India

Specific gap areas at Policy level, process level, Technology level that State plans to pursue and Improve

Haryana State Data Centre 2.0:

The overall objective is expansion and creation of a new data centre which will be created exclusively and dedicatedly as a Tier-II HSDC 2.0. It is envisaged that HSDC 2.0 will provide better operations & management control and minimize overall cost of Data Management, IT Management, Deployment and other costs. HSDC 2.0 would provide many functionalities out of which some key functionalities are Central Compute & data repository, Secure Data Storage, Active-Passive Disaster Recovery, Online Delivery of Services. HSDC 2.0 project will offer to the various departments of the State to host their services/ applications on a common infrastructure leading to ease of integration and efficient management, ensuring that computing resources, support and the connectivity infrastructure is adequately and optimally used. This shall include State-of-the-art Hyper Converged Infrastructure (HCI), up gradation of the overall cyber security infrastructure of the SDC and setting up of Security Operations Centre (SoC), etc.

- **IT Cadre:** To support implementation of the approved IT Plans/ e-Governance Initiatives of the various Departments/ Boards/ Corporations, it has been considered prudent to create IT Cadre in the State to have a uniform set of competent IT Manpower. A total of more than 500 resources shall be hired as part of this initiative. This shall help the State Government to ensure to create a common pool so that there are enough technically qualified resources/ manpower in each Department and District for the implementation of various eGovernance/ IT projects. This has been done to streamline the IT resource usage, reduce the dependency of hiring manpower for each project separately and identify the common IT needs of various Departments which has always been a challenge for the State Government. Interview for the first phase of hiring

the resources for the positions of CITO, Jt. CITO and SEOs has been completed during the period and interviews of the other positions are under process.

- **Startup ecosystem:** The Startup Policy of Haryana was notified in October 2017 to provide excellent infrastructure, access to markets, industry experts, fiscal thrust as a basic ecosystem for Entrepreneurs. By virtue of the provisions made in the policy, Haryana Government intends to facilitate entrepreneurs and startups through a strong network of Incubators by leveraging the existing infrastructure present in the state. As per the Entrepreneurs and Startup Policy 2017, the Incubators are expected to provide Multi-tenant facilities, center of knowledge transfer and stakeholder network with on-site management and business support strategies that direct diverse business incubation programs while working towards achieving the overall objective as under:
 - Execute partnerships with global accelerators, private companies, trade associations, think tanks etc. for building a model mentorship platform offering a range of expertise that can make the centre a creative and innovative powerhouse
 - Facilitate partnership with globally recognized startups based in the state with the intent to create a learning system that can help local startups scale globally

There has been steady progress in creation of new incubation centres and utilization of existing incubation network. However, to bring the State of Haryana among the top few states in the country, there is a need to establish strict timelines and a comprehensive policy implementation plan.

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Odisha State

Aditya Mohapatra

State Summary

Odisha has made significant progress in IT, both in exports as well as the domestic market, churning out IT professionals and creating quality IT infrastructure in the state. IT Export from the State was only Rs.91 Crores in the year 2000 has increased to Rs.4000 Crores in the year 2018-19 putting the State at a commendable position in the IT Map of the country having higher rate of Growth than the National Rate since 2006. In the field of e-Governance, Government of Odisha has been following a methodical approach by preparing overarching policies like ICT Policy, e-Governance Roadmap ,Promotion Strategy, IT Procurement Procedure, IT Hardware Manufacturing policy and Guidelines and following closely it to create an ICT enabling environment to enable citizen centric service delivery.

State level policy Integration including State level Institutional partnership

- Odisha Government has launched a unique initiatives in the country named as 'Mo Sarkar' (My Government) programme, in the State to ensure the accountability of public officials in delivery of government services to citizen with dignity. It is aimed at bringing professionalism and behavioural change in all government offices through a direct random feedback system from citizens. The programme is under the 5T Mantra announced by Hon'ble Chief Minister on five parameters (the 5Ts) i.e. **Transparency, Technology, Team work and Time** that leads to **Transformation** in Government. The programme involves development of an IT Solution using emerging Technologies like AI, Big Data analysis and sentiment analysis using IT tools for taking feedback from citizens on the behaviour, quality and timeliness of the services delivered to them selected purely through a randomisation system and resulting a reward/ punishment mechanism for the Government Institutions and officials . Under this programme, the Hon'ble Chief Minister, other ministers and senior bureaucrats are calling citizens to take their feedback on the kind of response and service they received when they visited the government facilities. The implementation of 'Mo Sarkar' initiative was started at all police stations and District Headquarter hospitals of the state in the first phase from Gandhi Jayanti, 2nd October 2019. Now six more departments are ready to be rolled out from December 2019 and in the last phase, 'Mo Sarkar' initiative will be extended to all the departments of Government delivering public services by 5th March, 2020.

A State of Art "Mo Sarkar Citizen Contact Centre" has been set up comprises of an Integrated Citizen Interaction System providing a single platform for citizens of Odisha to give feedback on the kind of response and service they have received when they visited the government facilities through toll free number 14545. It shall help in collating citizen's feedback and ensuring that people get their rights of service in a most dignified way without fear and favour. The telephone number and other contact details of the citizen visiting a Hospital or

Police station are getting captured on real time through API of concerned Department application like CCTNS, Hospital Management System and updated in Mo Sarkaar database. Once a citizen visits Govt office he/she will get a message with in 24 hours that he/she has been registered under mo Sarkar. In case he does not get the SMS then he is at the liberty to call the toll free number 14545 to register himself. The Citizen then would be contacted over phone for his/her feedback selected through randomisation process in the online system. The Mo Sarkar Application developed is utilising the core It infrastructure developed by Govt through NeGP like SWAN, SDC etc.

Within 28 days of rollout of this unique initiative, more than 2.5 lakhs citizen connects already made for only 2 departments. It will be a role model initiative for other State Government in coming days.

- Created the right common IT infrastructures like Odisha State Wide Area Network (OSWAN), Odisha State Data Centre (OSDC), and Common Service Centre (CSC) etc. Now Initiating a messaging services in form of Odisha One Portal, an e-Governance Services Delivery Gateway to provide seamless interoperability and exchange of data across multiple Government departments.
- Currently OSWAN is serving as the backbone network for data, video and voice communications throughout the state which includes 1 State Head Quarter (SHQ), 30 District Head Quarters (DHQ), 284 Block Head Quarters (BHQ). A total of 1266 horizontal offices are commissioned out of 1267 offices. The Odisha State Data Centre (OSDC) provides shared, secured and managed infrastructure for consolidating and securely hosting State level data and applications. Now Seventy software applications including 6 MMPs of 23 Departments are hosted in SDC, are running live in OSDC. More than 18000 Common Service Centres (CSCs) are present in the state out of which 8100 CSCs are actively doing transactions and 6461 GPs Out of 6804 GPs of Odisha are having minimum one CSC. These CSCs are providing various citizens centric services at their door step. By these infrastructures, overall Government efficiencies have improved significantly.

STPI has started a next generation incubation centre for electronics &IT Start-ups of Odisha. This will house a fabrication Lab and ESDM incubation data centre to cater to the need of IT, ITES and ESDM Industries. The state-of-the-art incubation centre can accommodate more than 100 entrepreneurs. The fabrication laboratory is one-of-its-kind facility in the country for which STPI has tied up with Massachusetts Institute of Technology (MIT), USA which will provide technical support, mentoring and equipment to the start-ups.

Key challenges faced during the State's eGovernance journey and plans for overcoming them

Reliable Connectivity is one of the major issues in the State especially in the extremist affected hilly and forest areas. Nearly 10,000 villages do not have the mobile connectivity which is restricting the citizens to get the benefits of e-Governance services. Banking business is also not penetrating to most of the rural

areas because of poor connectivity. Our Tele-density is 81.06 which is less than the national average of 93.23 and rural tele-density is near to 50% which is a concern for improvement of rural economy through the digital initiatives. Poor digital literacy is also a challenge in the State to bring the impact of digitization to improve the standard of life of the citizen.

To improve internet connectivity, OFC network is being laid from Block to GP in two phases under Bharat net Phase I and II in the Underground mode and Ariel mode. Both the phases are expected to be completed soon. Various Digital literacy programmes have also been taken to improve the digital literacy rate in the State.

State has taken many steps for promotion of digital payment. Odisha is a 100% Aadhaar enabled State and the State Resident Data Hub (SRDH) which has already been set up is bringing transparency in public distribution system and other Social Security benefits Schemes of the State. In fact Odisha has launched the state's own food security scheme to benefit 25 lakh people who have been left out from the National Food Security Act (NFSA).

Result Indicators

Government of Odisha is using various ICT interventions by leveraging new emerging technologies in key sectors like Food Security, education and healthcare. In food security sector, State has done significant work in Digitisation of Ration Card under NFSA, Online Allocation, Supply Chain Management System, FPS Automation, Grievance Redressal System and development of Transparency Portal. Digitisation of Ration Card is done for 326.41 Lakhs out of total population of 419.74 Lakhs. It is implemented in 106 ULB and 314 Blocks, SCMS: 199 Depot, FPS Automation: implementation of e-pos device with Aadhaar authentication in 13306 no's FPS. IT interventions in paddy procurement operations have resulted in creation of reliable database of farmer in the online portal, computerized paddy procurement operations through P-PAS software and online payment of MSP to farmers.

In education sector, Odisha has an e-Vidyalaya programme which covers 4,000 government schools in the first phase and 2,000 government schools in the second phase. Schools covered under this programme are provided with ICT laboratory, internet and multimedia facilities for students. Also we have got an innovative initiative named as Student Academic Management System (SAMS) for e-Admission to the colleges across the state in various departments of Odisha. "Mo School Programme" is connecting the schools with their Alumni using Social Media is an unique initiatives of the State.

In health, we have developed an application called e-blood bank through which citizen can get the complete blood stocks on each blood group of each blood bank in district-wise of the State of Odisha. The HMIS, Odisha Telemedicines, Government Doctor Management System etc are few initiatives in Health sector using Technology. Recently based upon the citizen's feedback system and response from

the health functionaries in Mo Sarkar initiative, Hon'ble CM has announced Rs 400 Crores worth projects to bolster health services in the far-flung districts of Odisha.

Integrated common service delivery through resource sharing:

Here is a list of State level initiatives undertaken by various departments for smooth service delivery to citizen. The departments are mandated to spend 1% of their overall departmental budget on ICT Initiatives.

- The e-District project as an MMP under NeGP was implemented in all districts of Odisha. Currently eight number of high volume citizen centric services, are being provided at the District level, by the District Administration to enable delivery of these services through the CSCs.
- The e-Municipality project was implemented in all urban local bodies of the state to ensure on line delivery of high volume citizen centric services provided by municipalities.
- Steel & Mines Department of Odisha has implemented i3MS (Integrated Minerals and Mines Management System) which is a unique attempt to bring transparency to the Mining process.
- The Student Academic Management System (SAMS) an innovative initiation for e-Admission & post admission academic administration at Higher Secondary and Under Graduate Degree levels across all the colleges in the state was implemented to provide Citizen Centric, Transparent, Time saving & Economical platform of admission and academic administration which works on an online-offline mode.
- To increase the efficiency across the Administrative Structure, thereby improving the quality of services to citizens through a system of Information and Communication Technologies (ICT), e-Registration, computerization of all 316 Sub Registrar offices across the State is implemented.
- Integrated Odisha Treasury Management Systems (iOTMS) was launched to improve the primary service delivery mechanism of the Treasuries which facilitates transparency between citizen and government, provides easier access and usage of government information and services and enables faster decisions and actions by Government officials. Now an enhanced version of iOTMS called as Integrated Finance Management System (iFMS) is being implemented by Finance Department. The purpose of this system is to have a Centralized Core Treasury Management System in place in the State Finance Department.

The recent Odisha Mobile tower, OFC and Other Telecom Infrastructure policy to establish the telecom infrastructure across the State to improve the ratio teledensity and providing connectivity even in remote areas of the State. The policy is on implementation across the state after its gazette notification and Single windows clearance system to provide permits for installation of telecom infrastructure in the State is under implementation.

KEY / SIGNIFICANT eGovernance best practices:

- Utilisation of 1% of the budget for e-Governance services by all Dept as per provision of ICT Policy of the State. Total budget of the State is 1.20 lakh Crores (Approx).
- Promoting Mobile Apps & Mobile Governance for G2C services through Mobiles. Use of Social Media in Governance. Grievance Redressal through Social Media addressed to CMO and CM.
- Strengthening the existing Common Services Centres (CSCs) as delivery outlets at each GP. Development of Common Application Portal as a single window for the delivery of services notified under Right to Public Service Delivery Act through the CSCs.

Enabler Indicators

State level e-Governance enabling processes

The vision of the E & IT Department is “To use Information Technology (IT) and Electronics to transform Odisha into an innovation and knowledge based society focusing on inclusive growth through citizen centric participatory governance.

Government of Odisha has been following a methodical approach by preparing overarching policies like ICT Policy , e-Governance Roadmap ,Promotion Strategy, IT Procurement Procedure, ESDM policy and Guidelines and following closely to create an ICT enabling environment to enable citizen centric service delivery as well as boosting productivity and efficiency. Odisha has got an application named as Odisha Secretariat Workflow Automation System (OSWAS) through which all file movements of Secretariat is done electronically and this automated work flow is continuing from the year 2008 onwards. The Application is presently being used by all Government Departments including CM’s Office. We are in the process of migration to OSWAS 2.0 with improved features for an employee friendly environment.

As ICT Policy 2014, mandated that each department would utilise 1% of their departmental budget for e-Governance initiatives, The funding for ICT initiatives is not at all a constraints

Capacity building for eGovernance

Leadership meet program with the political leaders, CIO, STeP, eGPM, eGLP, eGCP and various thematic Trainings for key government officials have already been conducted as the first step towards capacity building. Other training programs for general capacity building through imparting computer training are being offered across the state including employees of the Secretariat. The Officers/Employees of Government, Semi-Government Bodies, PSU etc serving in Grade A, B and C are given compulsory training by OKCL to have good knowledge on computer and all new recruits are also required to certify them with computer certification. Dedicated manpower resources for capacity building such as State e-Governance Mission Team (SeMT) are being placed and are being utilized to enhance the standard of training

programme and overall capacity building. State is also executing its capacity building road map and various training programme in partnership with NISG & NIELIT.

Technology &with promotion of technologies relevant for the State

Robust Management Information System has been built into the various systems to facilitate status reporting and decision making. Many applications are also equipped with dashboards which provide information for different stakeholders at one click. Several MIS reports are generated by applications which help in strategic decision making for increasing usage of the online system.

Government of Odisha is impressing upon to lay more emphasis on the social media and improve the quality of advertisements. Departments are taking specific measures to create their presence in Social media. All departments of the state had been asked to appoint content managers to oversee the material posted on social media and respond to queries raised by people. Hon'ble CM, Ministers and Secretaries are actively using various social media platforms.

Taking a cue from the growing dependencies of Governments on Social Media, Chief Minister's Grievance Cell (CMGC) was developed as a 360-degree tool capable of listening, tracking, monitoring and analyzing social media feeds. It fetches information from social media, handles social media responses, refines information by filtering out the spam, responds in-context across social media channels and also creates customized and in-depth reports.

Facebook, Twitter and WhatsApp were the major tools used by government officials to share information and responsibilities to tackle the floods situations in remote districts Rayagada, Kalahandi, Nabarangapur and Malkangiri districts. Social media was another key medium for disseminating information during the Hockey World Cup and Asian Athletics Championships in Kalinga Stadium, Bhubaneswar.

Odisha is setting up a Computer Emergency Response Team of Odisha (CERT-O) to tackle Cyber Security related issues. In order to tackle the Cyber Security related issues in the State, Crisis Management Plan for Cyber Security had been notified in the year 2016. The IIIT Bhubaneswar is playing an important role in helping the State Government in Cyber Security and Cyber Forensic related issues.

Awards and recognitions at State level for eGovernance initiatives

- Odisha has won the prestigious Skoch award 2019 for its implementation of Odisha Secretariat Workflow automation System (OSWAS) and CM Grievance redressal using Social Media.
- Odisha has received award during the Infocomm event for IT excellence in Government sector for the year 2019 for Ama Gaon Ama Bikash Scheme implementation resulting in allocation of Rs 1500 Cr through the use of ICT.

- Odisha industrial Infrastructure Development Corporation (IDCO) has received the Golden Peacock Innovative Product/Service Award-2018 at UAE, Dubai for Automated Post Allotment Application (APPA).
- Odisha has also bagged the Geospatial Excellence Award-2018 for successful IT application for tracking mineral production and dispatch on real-time basis through integrated mines and mineral management system (i3MS).
- For the year 2016- 17, the E&IT Department received the prestigious CSI-Nihilent Award for Best Progressive e-Governance State under State Category and recognized for the exemplary initiatives in the areas of Food Security where as Agriculture and FE Department received Award of Appreciation under best e-Governance project category for “Digital Governance - Seed Certification, Distribution by Direct Benefit Transfer (DBT) for the farmers”.
- Computerisation of Public Distribution System of Odisha has also bagged Gems of Digital India Award from Ministry of Electronics and Information Technology, Government of India for the year 2017.
- Integrated Financial Management System (iFMS) has been conferred with Skoch Smart Governance Award and Skoch Award of Merit for electronic receipt and disbursement and Pension Reforms in Government of Odisha for the year 2017. iFMS has also received CSI-Nihilent Award of Recognition in the Sustenance Category for the year 2016.
- For the year 2015-16, the E&IT Department had received the CSI-Nihilent Award of Recognition as the Best progressive e-Governance State in the country.
- The Paddy Procurement Automation System (P-PAS) & Farmer Registration had received National e-Governance award for Outstanding Performance in Citizen-Centric Services for the Year 2015-16.
- Students Academic Management System (SAMS) won the Skoch Smart Governance Award 2015-16 and also received the Indian Express Tech Sabha award 2015 for Best e-Governance Initiative in bringing fair and transparent e-admission process for the students.
- SAMS also conferred with the Skoch Order-of-Merit Award for best e-governance project in the year 2014-15.

Mobile Governance in Paddy Procurement in Odisha had been adjudged among the best e- Governance projects with the e-India Award 2014-15.

eGovernance success stories / case studies

i3MS - a trailblazer project in installing transparency in mining sector

The state of Odisha has now brought a turnaround in the mining sector in the state through intensive reforms to establish Transparency, Accountability and Efficiency into the system. Odisha is presently recognised nationally and globally as a pioneering state in mining reforms. Its technology platform named as “Integrated Mines & Mineral Management System”, popular as i3MS, has revolutionized mining operations to become a model for others to follow and Odisha’s proactive and innovative step has been cited by the Union Mines Ministry as a solution to the problem of illegal mining in the country.

I3MS or Integrated Mines & Mineral Management System is a one-of-its kind IT platform that brings end-to-end solutions for mining activities and mineral movement. It has brought complete transparency in the system by streamlining all the intricate processes. The online software application tracks the entire mining activities from statutory permits, clearances, renewals to recording each and every transaction of mining lessee and licensee to real time monitoring of production, dispatch and movement of minerals in the state. This software created a standard operating procedure for all Government officers dealing with Mineral of the State to avoid delay & favoritism to mine producers and the end users. To ground this project massive overhauling of the existing rules & regulations had to be done by plugging in new rules on the Lessee & Licensee. The complex and outdated mining rule were simplified by plugging in IT tools which avoided duplicity. All transaction of Minerals from Mines to the end user to Citizens is open for transparency.

What makes I3MS stand out?

- Revenue collected on transactions
 - Rs. 32,837Cr.(328 Billions) Royalty, dead & surface rent processed
 - Rs. 191.61 Cr. collected against User Fee
 - Rs. 7.46 Cr. collected against Application Fee.
- 79,079 Trucks registered with photograph, validated online with RTO (Vahan Database)
- 417 Electronic Weigh bridges in 155 mines and 353 in 390 Dealer been approved online

Key Achievements: Rs 305.3 Billion

Identification, codification and database build for all stakeholders

- 78,343 users in 35 different set of user type
- 5,70,650 e-Permits granted since inception
- 5.02 Crores Trip Sheets generated
- 6,924 no. of new/renewal of dealer licenses granted online
- 7,997 online Mineral due Clearance Certificate processed

The Government of India has applauded its outcomes and has recommended the model to be followed in other States. Government of Odisha had implemented this solution and afterwards Jharkhand and Chhattisgarh states developed their systems in line of i3MS of Odisha while Punjab and Bihar are also in contact with Odisha for development of the same.

Gap Areas and Opportunities for improvement:

The below are some of the gap areas and Government of Odisha is taking various ICT initiatives to pursue and improve the status on these areas.

- In order to provide more and more services to the citizens notified under Right to Public Services Delivery Act through online mode, the State Government have taken a decision that every Government Department will earmark 1% of their total budget for IT spending. Out of 324 number of services notified under Right

to Public Services Delivery Act, more than 70 services have been made Online till date and others are being rolled out in swift mode.

- The E&IT Department has been declared as the Nodal Department for Aadhaar Enrolment. The Aadhaar enrolment in the State has crossed 98% and we are trying to achieve 100% ASAP. OCAC has also been declared as the Registrar for Aadhaar enrolment in the State. The State Resident Data Hub (SRDH) for profiling of all the citizens data base has been set up at SDC.
- State Wide Area Network (SWAN) connecting all Government Offices up to Block Level shall be upgraded.
- The Common Data Centre (Phase - II of State Data Centre) at Info valley to cater the requirement of all Departments for hosting their e-Governance Application and shall be set up.
- In order to provide robust Internet connectivity up to the Gram Panchayat level for e Governance applications, all Gram panchayat of the State shall be connected with high speed internet connectivity through Bharatnet Project.

ICT interventions under implementation:

- Bhubaneswar leads Government of India's Smart City list and an estimated amount of Rs 10,000 Crores to be invested over five years. Bhubaneswar finished second runner-up at World Smart City Awards 2016 held at Barcelona in Spain.
- E&IT Department would set up a common Data Centre (Phase - II of State Data Centre) at Info valley which will cater to the need of all Government Department, PSUs and Autonomous bodies with Cloud enablement. The costing would be in tune of Rs 100 Crs.
- Up gradation of SWAN (SWAN 2.0) would be done by the state with a budget of Rs 150 Crs.
- A new ESDM Incubation Centre has been set up at Bhubaneswar. The State Government had also prepared an ESDM Roadmap for the State to transform Odisha to a Hub for ESDM in the long run.
- The State is setting up an Electronics Manufacturing Cluster (EMC) in Bhubaneswar with an initial investment of Rs 209 Cr.
- Bharat Net Project Phase II with an approved DPR cost of Rs 351 Crore

Sh. Aditya Mohapatra, OAS, Joint Secretary, Electronics & Information Technology, Government of Odisha, aditya.mohapatra@ocac.in

Section – III
eGovernance Projects

Rythu Bandhu

Rahul Bojja, M. Shylaja and N. Suresh Kumar

Project Overview

- Investment is the surest way to enhance agriculture productivity and also income to the farmers, besides breaking the vicious cycle of rural indebtedness. In order to ensure that the farmers do not fall again in to the debt trap, “RYTHU BANDHU”(Agriculture Investment Support Scheme) is being implemented in Telangana State by Dept. of Agriculture from the year 2018-19.

Objective

- Primary objective of this project is to provide an amount of Rs. 8,000/- per acre @Rs.4,000 per season shall be given to every farmer(Agriculture land khata holder) for providing investment support to Agriculture and Horticulture crops by way of grant for purchase of inputs like Seeds, Fertilizers, Pesticides, Labour and other investments in the field operations of Farmer’s choice for the crop season. This amount has been further enhanced to Rs. 5000/- per acre per season from 2019 Kharif onwards.

Scope

Scope(Functional)

- The Apex office is Commissioner, Agriculture Dept., Hyderabad and the District Agriculture Officials at district level, Divisional level Officials i.e. Asst. Directors of Agriculture, Mandal Agricultural Officials at Mandal level and Agricultural Extension Officers at Clusters/Villages, & Bankers at State & District Level
- All the Officials have their own functional competency work independently with the RythuBima project

Scope(Geographical)

- From State Head quarters (Hyderabad) / District Head quarters / Divisional Head quarters / Mandal Head quarters to AEOs at village level. The scope of the project is entire Telangana State, covering all the districts and agriculture divisions including remote areas.

Benefits

Overall benefits and intended are:-

- For segregation of the Govt. lands from the farmer lands, the Govt. records in the entire Land Records database have been thoroughly identified and mapped to these records to KEY WORDS. The resultant non-key words records were filtered from the database and only the farmers lands were retained in the database.
- Calculation of the total extent of farmers by summing up survey number wise areas, which were in acres and guntas through the web & mobile apps.

- If the amount exceeds Rs. 50,000/- payable to farmers, then system has been programmed in such a way that two cheques should be printed for that particular farmer.
- Based on the Mandals allotted to each of the banks, the formatted data with calculated amounts and number of cheques was electronically transferred to the bankers by giving option of downloading the data to be printed on cheques.
- The acknowledgement proformas, containing the detail information of series of cheques, Mandal wise at all the levels were automated.
- After the cheques were printed by each bank, the cheque numbers were updated against each individual beneficiary by taking the response files from each bank after printing. This enabled to track the cheque number of each of the individual farmer.
- The software enabled printing of Token slips for each individual farmer with name, father's name, total extent, serial number in acquittance register, date, venue and counter number in which he has to collect the cheque. Token slips were distributed in each of the villages ahead of their schedule. These Token slips have made the job easier for field staff.

Current Status

- Software has been successfully implemented in the entire Telangana State (total 32 districts) and greatly supported all the stakeholders by providing its online services in Kharif & Rabi seasons -2018 and currently Kharif-2019 is on-going.

Stakeholders

Key Aspects

- "RythuBandhu" is a unique work flow based web application designed, developed and implemented in Telangana state to facilitate "Investment Support Scheme" to the Agriculture farmers and was launched from Khar if 2018 season onwards.
 - With Rythu Bandhu, an amount of Rs.4,000/- will be given to farmers (per acre per season i.e. Kharif and Rabi) for purchase of inputs like seeds, fertilizers, pesticide and towards labour charges & Other investments in the filed operation at farmers choice and relieve them from debt burden. The Government of Telangana has enhanced the amount to Rs. 5,000/- per acre per season from 2019 Kharif season onwards.
 - Online Updation of the Land, Crop data & Bank Account details of the farmers by Agriculture Extension Officers and the process gets repeated on a regular basis using a Mobile App for Kharif& Rabi seasons every year
 - Online Verification of data by Mandal Agriculture Officers and processing the data for calculating eligible amount based on the criteria given.
 - **Other Online processes which made Rythu Bandhu an innovative project are:**
- Sharing of Beneficiaries data with Bankers for printing of cheques.
- Updation of cheques distribution data by Agriculture Officers.
- Receipt of Response File from Bankers on clearance of cheques.

- Sharing of data to Treasury for payment to farmers thru DBT.
- Receipt of Response files (Success & Failure transactions) from Treasury Dept., Updation of Bank Account details for failed transactions by Agriculture Officers and repeat the process of sharing data with Treasury till the payment is made to the farmers.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		Kharif-2018	Rabi-2018	Kharif-2019 (on going)
Rythu Bandhu (Agriculture Investment Support Scheme)	Amount per Acre per Season (Rs.)	4,000/-	4,000/-	5,000/-
	Total Beneficiaries (in Lakhs)	50.88	49.03	49.71
	Total Amount Distributed (in crores)	5257.52	5244.25	6567.94

Implementation Coverage

- Rythu Bandhu project has been successfully implemented in the entire Telangana State to benefit the farmers by properly setting the Dept. targets
- The project roll out process has been a major success in achieving every milestone that was planned.

New Services / Enhancements

During the last one year, a new module 'Rythu Samagra Samachara Sekarana (RSSS)' has been developed and incorporated in the Rythu Bandhu mobile Application.

Enablers

Process Reengineering

Project Processes that were re-engineered are:

- Farmer's Land Records data has been taken from Land Records Updation Programme (LRUP) database from Revenue Dept.
- Updation of Bank Account details of Farmers online though Web and Mobile applications.
- Online sharing of Data with Bankers for printing of cheques.
- Updation of cheques distribution data by Agriculture Officers online.
- Receipt of Response File from Bankers on clearance of cheques has been automated.
- Online Data sharing to Treasury for payment to farmers thru DBT
- Receipt of Response files (Success and Failure transactions) from Treasury database and Updation of Bank Account details for failed transactions by Agriculture Officers online.
- SMS alerts to Farmers on payments made thru DBT.

People

- Farmers have been educated to cooperate with the AEOs for data updations (e.g. Crop and Bank Account Details etc.)
- Various analytical Reports are designed for effective decision making by policymakers.
- Various Trainings and meetings were conducted to AEOs and MAOs work flow related issued

Value Indicators

Learnings for Sharing

Key Learning

- Segregating the entire farmer's data and making it ready and handing over to 8 banks as per their jurisdiction and mapping of the account numbers as per their area of operation.
- For printing English names of beneficiaries on the cheque "Lekhini" tool was utilized for converting the Telugu names of farmers into English.
- With multiple brainstorming sessions among stakeholders, various complex processes have been simplified and automated

Best Practices

- To streamline the distribution process, tokens were generated and regulated? farmers for collection of their cheques in the notified counter in the village on the scheduled date.
- The Concepts of Guidelines for Telangana Government Websites (GTGW) and GUDAPPS methodology have been followed throughout the software designing and development activities

Process changes

- Multiple processes at all levels of the project have been thoroughly analyzed for a better system design:
 - The data related to village wise schedules and venue was entered in the portal and link was provided to Citizens/Farmers to view their village schedule.
 - System generated acquittance registers for each individual farmer, village wise was prepared through Rythu Bandhu portal.
- 1. The revenue data contained only Aadhaar number without gender, caste, bank account details of each individual farmer and mobile numbers.
- 2. The Agriculture Department in its Rythu Samagra Survey collected all the above details and entered data in Maa Bhoomi MaaPanta Portal.
- 3. Integration of the LRUP portal and Maa Bhoomiportal was undertaken using the unique Aadhaar number.
- 4. The Acquittance register contained the fields like farmer name, father's name, cheque number, date, bank name, Aadhaar number, gender, caste, bank account details of farmer, mobile number and signature column.

Updating the distribution of individual cheques through both web portal and mobile App

Digital Empowerment

- Mobile Application is used to capture the Farmer's Crop Sown Area for Kharif 2019 and updating the Bank Account details has benefited the AEOs working in remote villages.
- Provision to Send Category (SC/ST/General) wise Batch files generated to Treasury for payment to Farmers through DBT process.

Green Governance

- Beneficiaries (Farmers) are not required to visit Dept. for getting their investment support and hence saving them time and travel cost.
- Sending SMS Alerts to the Farmers Mobile Numbers, providing them the status of payment details.
- Sending reports by papers were reduced and most of the updates were sent through e-mails and through software.

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Rythu Bima (Farmer's Insurance)

Rahul Bojja, M. Shylaja and N. Suresh Kumar

Project Overview

- The Agriculture Dept., Govt. of Telangana, has been implementing various e-Governance & Digital India initiatives in the recent years. As part of that, they have proposed an innovative idea to automate the Farmers Group Life Insurance scheme launched by Govt. of Telangana on 14th August 2018 through Rythu Bima software. In this scheme, the Agriculture farmers in the age group of 18 to 59 years are eligible for insurance of Rs. 5 Lakh each. The entire premium is paid by Government of Telangana.

Objective

- The Primary objective of the Rythu Bima project is to facilitate end to end implementation of Farmers Group Life Insurance Scheme (financial relief of Rs. 5 Lakhs), thereby providing social security to the family members/dependents of deceased farmer.

Scope

Scope (Functional)

- The apex Office is Commissioner, Agriculture Hyderabad and the District Agriculture Officials at district level, Divisional level Officials i.e. Asst. Directors of Agriculture, Mandal Agricultural Officials at Mandal level and Agricultural Extension Officers at Clusters/Villages, LIC officials & Bankers at State Level.
- All the Officials have their own functional competency to attend the job duties in implementation of Rythu Bima.

Scope (Geographical)

- From State headquarters (Hyderabad) / District Headquarters / Divisional Headquarters / Mandal Headquarters to AEOs at village level. The scope of the project is entire Telangana State covering all the districts and agriculture divisions. Remote areas and geographically challenged places are also covered for Rythu Bima implementation.

Benefits

Overall benefits intended are

- Enrollment of Farmers under the age group of 18-59 years for Group Life Insurance Policy Web and Mobile Apps are provided to capture the data by Agriculture Officers at the field level.
- Registering claim online in case of death of insurer and uploading the required documents by Field level Agriculture Officers.

- Online verification of claim documents by District Level Agriculture Officers.
- Downloading verified claims by LIC officials for processing the payment
- SMS alerts to Farmer at the time of enrollment and to Nominees after the payments made through DBT.

Current Status

- Rythu Bima project has been successfully implemented in all the districts of Telangana State for farming community in the year 2018.
- The scheme is initiated and ongoing in the current year 2019 also.

Key Aspects: Some of the key aspects of the project are:

1. 'Rythu Bima' software is a first of its kind project in Telangana and in India, to support 'Farmers Group Life Insurance scheme' launched by Govt. of Telangana.
2. To facilitate with a financial relief to Farmers by means of Insurance policy, thereby providing social security to the family members/dependents of deceased farmer.
3. The overall work flow in the application contains - Identification of Farmers, Capturing nominee details, checking & scrutiny by Agriculture Officers, process automation, Sharing of enrolment data to LIC, Policy Generation, Settlement of claims, Sharing Claims data to LIC for settlement and Receiving Response files from LIC. The software acts as an end to end implementation of the scheme.
4. The application also provides -User management, defining roles and privileges, dashboards, alerts, MIS Reports and need based queries, decision making reports for higher level officials of Finance, Agriculture Depts. even and Chief Minister Office.

Result Indicators

Services

Name of e- Service	Brief service description with benefits	Volume (Nos) of Services year wise	
		2018-19	2019-20
RYTHU BIMA(Policy Claim Settlement)	Total Farmers Enrolled (No in Lakhs)	31.27	30.17
	Total Claims Settled(in No.)	16,910	313
	Total Amount Distributed (Rs. In Crores)	845.50	15.65

Implementation Coverage

- Rythu Bima project has been implemented in the entire Telangana State to improve the Livelihood of the Dependents in case of Farmer's unforeseen death.
- As planned by the Dept., the project has been successfully rolled out in the year 2018 in the entire state and able to achieve project milestones without any shortfall.

Enablers

Process Reengineering

- Thoroughly examined all the 'AS-IS' processes of Rythu Bima (Farmers Insurance scheme), and then the work flow based Web application has been designed, developed and implemented with close coordination of Principal Secretary and Commissioner, Agriculture Department, Telangana State
- The processes that are automated are: Enrollment of Farmers, Capturing of required data at Field Level, Registration of Policy claims, Verification of Documents and Payment to Farmers, Data Sharing to LIC authorities and for further processing.

People

Process trainings and work flow demos were given to the concerned stakeholders below and ensured high value addition to the project:

- Farmers in the age group of 18 to 59 years are eligible for Rythu Bima insurance coverage
- Registering claim online in case of death of insurer (farmer) and uploading the required documents, capturing of nominee details etc. are done by Agriculture Officers at the field level.
- District Level Agriculture Officers are responsible for Online verification of claim documents
- LIC officials will download the verified claims for processing the payment Capturing status of the disbursed amount by the dependents of farmers

Value Indicators

Learnings for Sharing

Key Learning

- Insurance domain knowledge is acquired and may be implemented in other projects
- With the experiences during Application implementation process, the Dept. is coming up with many innovative digital initiatives

Best Practices

- Dash boards and analytical reports have been provided to external Stakeholders i.e. LIC officials.
- GuDApps concepts are implemented in the development of the software.

Process changes

- Application workflow process designed and implemented for District/Mandal /AEOs.
- Easy identification of beneficiaries to cover under group life insurance scheme.
- Mobile App for updating the nominee details (Bank Account details, Aadhaar number and mobile number) of farmers.

Digital Empowerment

- The nominee of the deceased farmer need not go to any office and submit application for claim amount.
- Farmers staying in remote villages also are getting benefitted without spending their money & time
- Proactively AEOs capture the nominee details and upload relevant documents in time for claim settlement.
- A Mobile App has also been developed for capturing the Nominee details for policy settlement process. The beneficiaries are not required to visit the Insurance office for claiming insured amount.

Green Governance

- Sending SMS Alerts to Farmers during enrolment and to Nominees regarding status of claim status and finally deposit of amount of Rs. 5.00 Lakhs in to their Bank account.

Rythu Bima features in both Web and Mobile applications have been developed to ensure Online Submissions at every level of work flow and therefore very eco-friendly software

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Haryana PMKISAN State Portal

Ajit Balaji Joshi, Dharampal Saini and Deepak Bansal

Project Overview

Objective

With a view to augment the income of the farmers, the Government has launched a new Central Sector Scheme, namely, “Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)” in the financial year 2018-19. The Scheme to be implemented as Central Sector Scheme with 100% financial support by Government of India (GoI). The PM-KISAN scheme aims to supplement the financial needs of the farmers in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of the each crop cycle. This would also protect them from falling in the clutches of moneylenders for meeting such expenses and ensure their continuance in the farming activities.

Cut-off Date

The Scheme shall be effective from 01.12.2018 for transfer of benefit to eligible beneficiaries. The cut-off date for determining the eligibility of beneficiaries has been kept as 01.02.2019. Changes, if any, in the cut-off date for eligibility of benefit under the scheme for next 5 years will only be considered with approval of the Cabinet. However benefit will be allowed on transfer of ownership of cultivable land on account of succession due to death of the landowner.

Definition of Families

The Farmers landholder farmer family is defined as “a family comprising of husband, wife and minor children who collectively own cultivable land up to 2 hectare as per land records of the concerned State/UT”.

Exclusion

The following categories of beneficiaries of higher economic status shall not be eligible for benefit under the scheme.

- (a) All Institutional Land holders.
- (b) Farmer families in which one or more of its members belong to following categories:
 - Former and present holders of constitutional posts
 - Former and present Ministers/ State Ministers and former/present Members of Lok Sabha/Rajya Sabha/State Legislative Assemblies/State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.
 - All serving or retired officers and employees of Central/ State Government Ministries /Offices/Departments and its field units Central or State PSEs and Attached offices /Autonomous Institutions under Government as well as

regular employees of the Local Bodies (Excluding Multi Tasking Staff /Class IV/Group D employees)

- All superannuated/retired pensioners whose monthly pension is Rs.10,000/-or more (Excluding Multi Tasking Staff / Class IV/Group D employees) of above category
- All Persons who paid Income Tax in last assessment year.
- Professionals like Doctors, Engineers, Lawyers, Chartered Accountants, and Architects registered with Professional bodies and carrying out profession by undertaking practices.

Scope

Earlier scheme was intended for small and marginal farmers (SMFs) of the state having cultivable land up to 2 hectares but later on Govt. of India included all farmers having cultivable land.

Whole state of Haryana has been included in the scope.

Stakeholders

- Directorate, Agriculture and Farmers Welfare, Haryana.
- Deputy Directors of agriculture in all 22 districts of Haryana state.
- National Informatics Centre (NIC), Haryana
- Central PM-KISAN team.
- Farmers

Intended benefits

Under the Scheme, a direct payment of Rs. 6,000 per year will be transferred in three equal installments of Rs. 2,000 each, every four months into the bank accounts of eligible landholding farmer families. The first installment for the period 01.12.2018 to 31.03.2019, under the scheme will be transferred to the eligible beneficiaries in the current financial year (2018-19) itself. First Installment shall be transferred immediately on identification of the beneficiaries.

Current status as on 17/10/2019

Total farmers records entered: 16,19,723

Eligible farmers: 15,38,354

Uploaded on central PM-KISAN portal: 15,38,354

Payments to farmers

First installment: 13,09,446

Second installment: 12,46,943

Third installment: 10,39,290

Key Aspects

- **Prime Minister Office (PMO)** has appreciated the outstanding work done by State PM-Kisan team of Haryana to take Haryana to top position in implementation of PM-KISAN scheme across country.

- When Hon'ble PM announced this scheme, there was no ready-made database available with Agriculture department. So, it was decided to create state PM-KISAN portal **within 7 days** with all functionalities required for the data transfer to national level PM-KISAN portal.
- Pre-requisite of scheme was to give benefit to farmers having cultivable land up to 2 hectares. In short period of 7 days, it was near to impossible to cross check farmers data with this condition.
- It is **first of its kind of initiative across country**, where state PM-Kisan portal was developed with base data coming from Land Record database.
- The ultimate benefit of this project implementation to Department of Agriculture and Farmer's Welfare, Government of Haryana was that they got a **fresh and verified database** of farmers of the state. Before this initiative, department didn't have any farmer's database. This database will help department to deliver many more Agriculture related schemes in an efficient manner.
- Benefit of this process was that all revenue villages were LGD mapped to have standard village directory for the state.
- Integration with **PM- KMY (PMKisan Maan Dhan Yojna)** to push eligible SMF (Small and Marginal Farmers) of Age Group between 18-40 years.

Result Indicators

Services

Name of e-Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Farmers registered	• Farmers can submit filled-up form to village level committee formed for each village. • Farmers who could not submit form in the village, can visit DDA office for getting himself registered. User at DDA office will enter application details on portal.	Not applicable	Not applicable	16,19,723
Eligible farmers extraction	Eligible farmers extraction on the basis of exclusion criteria mentioned in the scheme.	Not applicable	Not applicable	15,38,354
Eligible farmers data uploaded	Eligible farmers data uploaded on central PM-KISAN portal through XML files	Not applicable	Not applicable	15,38,354
Correction of PFMS rejected records	PFMS rejects the records of eligible farmers whose account number/ IFSC is not valid for payment. Such records are corrected by DDA offices	Not applicable	Not applicable	23,845
PFMS rejected records data uploading	PFMS rejected farmers data uploaded after correction on central PM-KISAN portal through XML files	Not applicable	Not applicable	23,845

Implementation Coverage

(a) Implementation Coverage achieved in comparison to the plan / target

- Initially, scheme was introduced for SMFs (Small and Marginal Farmers) of state having cultivable land up to 2 hectares.
- Haryana became the first state to achieve 89% in the month of Feb 2019.
- Later on, Govt. of India included all farmers having cultivable land.
- Payment to the farmers was through PFMS.
- As on date, targeted goals have been achieved with 99.9% implementation. If any farmer has been left due to any reason, he/she is being enrolled immediately at DDA office or Directorate.

Process Re-engineering

- When Hon'ble PM announced this scheme, there was no ready-made database available with State Agriculture department. So, it was decided to create state PM-KISAN portal within 7 days with all functionalities required for the data transfer to national level PM-KISAN portal.
- Pre-requisite of scheme was to give benefit to farmers having cultivable land up to 2 hectares. In short period of 7 days, it was near to impossible to cross check farmers data with this condition.
- Another process re-engineering was done to integrate land records database of revenue department with state PM-KISAN portal. Land records database was taken as base data for data entry, so that land records details such as khewat, khatoni were populated to avoid any errors related to data entry.
- Benefit of this process was that all revenue villages were LGD mapped to have standard village directory for the state.
- District officials were mobilized up to village level to get the application forms filled up and were verified by team of Revenue Patwari, DDA and Sarpanch. Filled-up forms were sent to district headquarters. Special computer labs were set up 24 x 7 to get the applications entry work completed on time.

People

- Overall project was led from front by Shri AjitBalaji Joshi, IAS, Director General, Agriculture and Farmers Welfare Department, Haryana.
- Project Management Unit (PMU) was set up at Directorate level to coordinate with NIC team and district officials of the department.
- Portal training was done by NIC, Haryana through Video Conferencing to all District Informatics Officers (DIOs), Deputy Directors of Agriculture, Data Entry Operators etc.

Learnings for Sharing

Challenges

- To develop Haryana PMKisan State Portal including all functionalities within one week.
- No readymade database of farmers was available with the department.
- How to get forms filled-up of approx.. 10 lakhs in a week and get duly verified from village level committee?
- How to ensure data authenticity of land details including area being stated by the farmer?
- How to ensure data entry of 10 Lakhs farmers within one week at in portal?

Best Practices

- In house development of Portal by NIC Haryana.
- No dependency on third party vendors etc.
- Haryana PM-Kisan State Portal was integrated with Land Record database of Revenue department to take it as base database.
- District level labs with 25 Computers were set up and data entry operators were rotated in shifts to work on 24*7 basis.
- Village level committees were constituted to verify land details and family details of the farmers.
- Demo Auth API of UIDAI has been integrated to check Aadhaar number and Name of the farmer and members also. This helped to remove duplicate records.

Digital Empowerment

- To assist farmers to fill their forms, department had deputed support staff to fill their application form.
- Land Records Data in Hindi Language was shown to user to ease data entry.
- Benefit to eligible farmers of scheme was transferred directly into their bank account from PFMS.
- To ensure data security, only departmental users, through SWAN (State Wide Area Network) and NIC Network were allowed to enter applications.
- District level officers were trained in software operations by NIC for updation of beneficiary data online. Similarly, other staff members of department were also trained about dynamic website, so that they can educate any person who is at grass root level to get any related information from digitized data through website. A secure web account has been given to all stakeholders to process the data as per their role and to access the information at any time.
- Each and every village is covered under the project and benefits are delivered to all on the same pattern.
- District level functionaries have connectivity through NIC/ BSNL/ SWAN.

Green Governance

ICT facilities created under the project are taken care of Green e-Governance to the extent possible i.e.

- No e-Waste has been created except used printer ribbons, toner cartridges which are auctioned as per Government process.
- Another method of e-waste treatment namely Incineration (burn) or Land filling is not required to be used due to negligible e-waste generated out of the system.

To save towards resources and power, the existing ICT facilities like Data Centre of NIC and Haryana state have been utilized.

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Cooperation Management Information System

Department of Cooperation, Government of Himachal Pradesh

Ajay Sharma and Ajay Singh Chahal

Project Overview

In the absence of computerization of Department of Cooperation, HP, it was very cumbersome for a prospective customer to Apply and Register for a Charitable Society or NGO under HP Societies Registration Act 2006 as well as a Cooperative Society Registration under HP Cooperative Societies Act, 1968, or to check status of Registration. Similarly, it is very difficult to monitor the annual statements of Cooperative Societies, monthly progress reports and budget distribution to the Cooperative Societies. It is also extremely difficult for the Management/staff to manage and monitor the life cycle of the registration in various offices, various allocations like subsidy, loan, and shares to the Cooperative Societies and compile various monitoring reports which are mandatorily required. As a result, It has become necessary to devise such mechanism in the form of a web portal namely Cooperation MIS which provides ease of doing business to both Customers and Organization.

Objective

The objective is to create a Web-based Application Software for the Department of Cooperation, HP which would provide linkages between the Cooperation head office and its divisions, circles and block offices throughout the State. The main **features/functions** of this software application are:

- Online registration of the Charitable Societies/NGOs
- Amendments in the Registration of the Charitable Societies/NGOs
- Online registration of the Cooperative Societies
- Online status of the registration of Society (NGOs)
- Dissemination of status information through SMS/Email
- Graphical analysis for decision support purposes
- Analytical reports for decision making
- Annual Statement of Cooperative Societies
- Online MPRs/Quarterly progress reports about inspections of FPSs, Cooperative Societies, Arbitration and Execution Cases, Distribution of Consumer Goods, Fertilizers, Elections, etc.
- Distribution/Recovery of Budget to Cooperative Societies in the form of Loan, Subsidy and Share/Investment
- Loan disbursement, recovery, inspection, arbitration and appeal processes
- Real-time updating of the contents on the portal
- Employee and Users Management
- Roles assignment

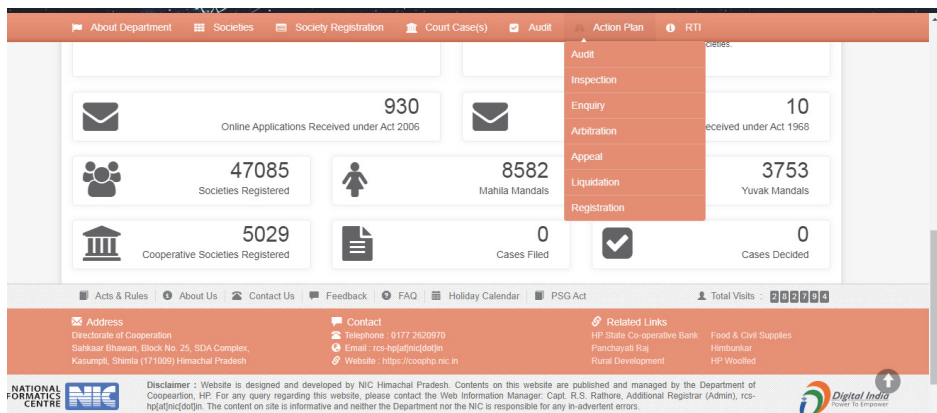
Stakeholders

Stakeholders for the web application solution can be broadly classified into following categories:

- **Application Administrator:** To configure the parameters of the software for the other stakeholders.
- **Cooperation Department Employees:** The employees of the department of Cooperation working in various District, Division, Circle and Block offices
- **Charitable Society/NGO registration and Cooperative Society (Apex, Secondary, Primary) registration users** across India.
- **General Public**-to know the status of Departmental functions in an transparent manner

Current Implementation Status

- Registrar Office, 16 Circle Offices, 46 Block Offices, 12 DC Offices and 68 Sub Division Offices across State
- More than 5000 cooperative societies and about 47000 NGOs registered in the State



Key Aspects

The **Cooperation MIS** is a unique software of its kind that provides ease of accessibility and simplicity in usage to the user/applicant from even the remote part of the State for the process of nomination/registration/amendments/statutory compliance of NGO's and Cooperative Societies. The Online web solution makes the registration process more convenient to the end user without visiting the Registration Authorities in person; they can fill/submit the registration form /compliance reports and receive various services such as registration certificate, objection, fee payment, amendments, audit reports, financial status, funding details, AGM resolutions etc. online through the portal.

A databank of more than **5000** Cooperative Societies and about **47000** NGO's of multiple kinds that are registered in the State has already been created. It is a **generalized** software solution for Cooperative Departments and provides a transparent and accountable solution to the end user. It encourages **digital empowerment** at Government and stakeholder level with citizen centric service. The paperless operation has increased the carbon credit rating of the State. The inclusion of role-based dashboard with processed data and MIS reports has enhanced the decision making for the State Government.

The overall registration process is simplified by the implementation of the software solution and in use bulky and complex printed paper forms are now discontinued and replaced with online form submission processes. It has enabled multi-facet benefits to users like **Mahila Mandals/Yuvak Mandals/NGOs/Societies** etc. from rural India and **drastically reduced the** time of submission, approvals, issuance, grievance redressal and monitoring. The magnitude of the application can be judged from the financial data for 2017-18 of 5038 registered cooperative societies having an assets of 1,23,917.32 Cr and providing employment to 22,032 peoples.

The major functional areas of Cooperation Department which have been covered in this applications are:

1. Online Registration of Cooperative Societies/ NGOs
2. Online Filing of returns by Societies
3. Loans Disbursement and Recovery
4. Inspections and Audits
5. Budget Distribution
6. Cases Management
7. Online Monthly Progress Reports
8. Online Service Book (eHRMS-ManavSampada)
9. Online Grievance Monitoring (e-Samadhan)

Result Indicators

Services

Name of e-Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2017-18	2018-19	2019-20
HOD Dashboard for Real time monitoring of Financial Statistics of Cooperative Societies	A detailed and concise dashboard has been provided to the Head of the Department to view all the Financial statistics related to the Cooperative Societies in real time. It helps the Department in decision making based on the	(Statistics corresponding to 5038 Societies) ₹ 123917.32 Cr Total Assets ₹ 129747.37 Cr Total Liabilities	(Statistics of 1275 Societies out of 5030) ₹ 4619.03 Cr Total Assets ₹ 4576.65 Cr Total Liabilities	Statistics for the corresponding year will be available in the year 2020-21

Contd...

	key performance indicators.	₹ 127502.90 Cr Total Income ₹ 125907.37 Cr Total Expenditure 3560 Societies in Profit 588 Societies in Loss 22032 Total Employment in Societies	₹410.58 Cr Total Income ₹378.89 Cr Total Expenditure 1024 Societies in Profit 130 Societies in Loss 13227 Total Employment in Societies (based on the data collected till (16/10/2019))	
Online Registration of Societies (NGOs/Charitable Societies) under Himachal Pradesh Societies Registration Act 2006	Applicants can conveniently apply online through web portal for the registration of NGOs and can monitor the status of their Application online in real time. The Registration authorities also have access to the portal to deal with applications online with a minimal or no requirement of paperwork. They can issue/upload system generated certificates online.	-	195 Societies Registered	175 Societies registered till date
Amendments in Registration of Societies (NGOs/Charitable Societies) under Himachal Pradesh Societies Registration Act 2006	Applicants, where the Society is already registered through portal can apply for the amendments in Registration of Society and can monitor the status of their Application online in real time. The Registration authorities	-	-	Amendments Done in the memorandums of 8 Societies

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	also have access to the portal to deal with applications for amendments online and can issue/upload system generated certificate of amendment online.			
Annual Statement of Cooperative Societies for Administrative Reports and Annual Statistics	The Management present in the various Circle/Block Offices can now enter the Annual Data (pertaining to Audit and other statistics) of Cooperative societies online and submit to the head office for the respective Financial Year	Statements Received for 5038 Societies out of 5038	Statements Received for 1275 Societies out of 5030	Data for the corresponding year will be collected in the year 2020-21
Distribution of Annual Budget to Cooperative Societies and its Recovery	The Annual Budget distribution to the Cooperative Societies in the form of Loan, Subsidy and Share/Investment can be managed online. The corresponding reports get automatically compiled and can be viewed anytime on the web portal.	State Budget Integration (Sanctioned Amount ₹ 33.36 Cr) Disbursement of ₹ 56.32 Cr as Loan to 5 Societies ₹ 4.83 Cr as Subsidy to 390 Societies ₹ 37.17 Lac as Investment to 79 Societies	State Budget Integration (Sanctioned Amount ₹ 37.39 Cr) Disbursement of ₹ 28.34 Cr as Loan to 2 Societies ₹ 20.81 Cr as Subsidy to 400 Societies ₹ 41.77 Lac as Investment to 88 Societies	State Budget Integration (Sanctioned Amount ₹ 56.15 Cr)
Monthly/Quarterly Progress Reports	The monthly data of various activities such as sales, purchase, inspection etc. going on in the circle/block offices can be entered online and its	Data entry in process for 77 Block offices in 16 Circles	Data entry in process for 77 Block offices in 16 Circles	Data entry in process for 77 Block offices in 16 Circles

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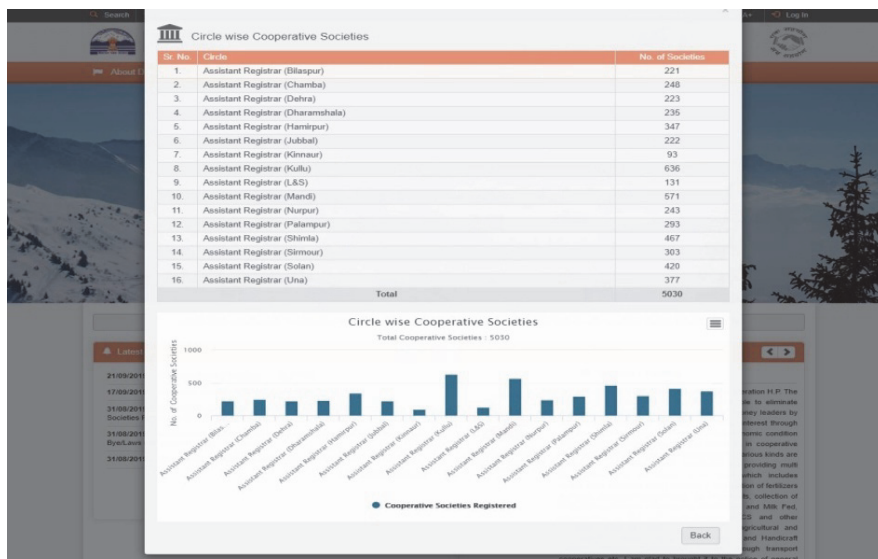
	monitoring can be done by the head office with the automatic compilation of the reports.			
Court Case Monitoring	The court case pertaining to the Department Reregistered NGOs/Cooperative Societies can be filed online through the portal. The case can be moved between several Authorities as per requirement and the case judgement/Final Statement can be generated online.	326 cases received out of which 132 disposed	460 cases received out of which 364 disposed	
Audit and Inspection	Audit process has been made online which involves Circle and Block Offices of the Department. Societies are selected for Audit and a Target is given to the Block/Circle Offices. Audit Report, Audit Paras, Remarks can be generated and submitted online without any need of bulky paperwork.	3360 societies audited	3342 societies audited	1680 societies audited (till 16/10/2019)
eHRMS-Manav Sampada (https://genpmis.hp.nic.in)	eService Book, User Authentication & Authorization Assists the top management in knowing the exact number of Employees, the retirement pattern, additional requirements in coming year for planning recruitments, funds required for retiring Employees, re-allocation of surplus	-	-	689 Registered Employees With role-based access to different application (till 16/10/2019)

Contd...

	Employees ACR/ Property Return status, seniority lists etc.			
Samagra e-Samadhan (https://esamadhan.nic.in)	Comprehensive Online Grievance Redressal System for public grievance, Online action, disposal and?	-	-	1032 Applications Received 1024 Applications disposed 8 Applications pending (till 16/10/2019)

Implementation Coverage

The Application covers the whole State of Himachal Pradesh. This includes all the Division, Circle and Block Offices of the Department throughout the State along with the Head Office in the State Capital. The application also covers the DC Offices and SDM Offices in the State with respect to the Registration of the NGOs/Charitable Societies under Act 2006. As it is web-enabled application, the reach over Internet to citizens is provided all over the globe.



New Services / Enhancements

- The Reporting and Monitoring structure can be further enhanced and extended to provide a detailed and concise data, covering all the major aspects of all the activities performed through the web portal.

- Rollout of Loan and Investment modules at the Society and Block/Circle office level for the real time monitoring
- Court case module for each offices with process flow, stage wise status, transfer of case and decision detail at each level.
- Backlog data updation of all societies for online monitoring and reporting.
- Exception reports based on the Annual Data collection of Cooperative Societies for the Administration reports (Assets, Loans, Profit/Loss, Status of Society etc.) for the monitoring at the Head Office Level.
- The application provides users with an interface to send their information in English and Hindi. It helps in effective planning at Government level by providing societies information on real time basis which can assist in overcoming any unexpected loopholes in the system.
- The user authentication is based on registered mobile number and Email ID which provides a role based application flow with system generated and issuance of online certificate of registration.

The screenshot displays the Cooperative Management Information System interface. On the left, a sidebar lists various modules: Home, Add New, View Details, and a list of categories including Society Details, Address, Society Type, Area of Operation, Head Office at District, Mandi, Objectives of the society, EDUCATION, CAPACITY BUILDING AND TRAINING, ECONOMIC EMPOWERMENT OF PEOPLE, HEALTH AND FAMILY WELFARE, ART, CULTURE AND SOCIAL CHANGE, ENVIRONMENT AND CLIMATE CHANGE ISSUES, DISASTER MANAGEMENT, RESEARCH AND PUBLICATION, FUNDS AND RESOURCE MOBILISATION, GENERAL AND SOCIAL INFRASTRUCTURE FACILITIES, ISSUES OF COMMON INTEREST TO THE PUBLIC, and ANCILLARY OBJECTS. The main content area shows the 'Details of Person Filing the Memorandum of Association' form. The form includes fields for Name (LEKH RAJ), Address for Correspondence (S/O SH. MOHAN LAL, Vill. Sambal PO Bujani Teh. Sadar Dist. Mandi H.P.), Mobile (9419328442), Email ID (adishrtya@gmail.com), Society Details (Name of Society: Society for the Empowerment of Fraternity through Technology and Education (SEFTE), Address: 17 ROAD VILL. SAMBAL PO BUJANI TEH. SADAR DIST. MANDI H.P. 175001, Society Type: Social Welfare, Area of Operation: State Level, Head Office at District: MANDI), Objectives of the society (EDUCATION, CAPACITY BUILDING AND TRAINING, ECONOMIC EMPOWERMENT OF PEOPLE, HEALTH AND FAMILY WELFARE, ART, CULTURE AND SOCIAL CHANGE, ENVIRONMENT AND CLIMATE CHANGE ISSUES, DISASTER MANAGEMENT, RESEARCH AND PUBLICATION, FUNDS AND RESOURCE MOBILISATION, GENERAL AND SOCIAL INFRASTRUCTURE FACILITIES, ISSUES OF COMMON INTEREST TO THE PUBLIC, ANCILLARY OBJECTS), and General Body Members.

On the right, a 'Certificate of Registration of Societies' is displayed. The certificate is issued under the Himachal Pradesh Societies Registration Act 2006 (Act No. 25 of 2006). It certifies that the Society for the Empowerment of Fraternity through Technology and Education (SEFTE) located at 17 ROAD VILL. SAMBAL PO BUJANI TEH. SADAR DIST. MANDI H.P. 175001 has been registered under the provisions of the Himachal Pradesh Societies Registration Act, 2006 (Act No. 25 of 2006) on the 30th day of August 2019 (30/08/2019). The certificate is signed by the Registrar of Societies, Shimla, Himachal Pradesh.

Enablers

Process Reengineering

- **Standardization** of Business process for online registration, amendments, audits, financial status, accounting and Loan & recoveries.
- Role based access to department user at each level with individual **Dashboards**.
- SMS based dissemination of information to users with **online acknowledgement**.
- Growing **demand for a Standard ICT Solution** to manage the data of cooperative Societies and NGO's. The State Government faces resource and financial crunch. Limited financial resources of the State demand proper finance and personnel management for planning purposes. Data management has become a major component in managing State resources for cooperative societies and NGO's.
- Availability of all cooperative societies and NGO's related data at a **central portal**: The State Government knows exactly the Number of Cooperative societies registered, Number of NGOs, Income, Expenditure, Assists, Liabilities, Profit and loss, business detail, employment detail, loan detail etc. on a single click.

- **Lower cost of maintenance** with robust, cloud hosted, security audit and DR facility, being made available without additional cost to the States.
- Applicants can conveniently apply online through web portal for the registration of NGOs and can monitor the status of their Application online in real time. The Registration authorities also have access to the portal to deal with applications online with a minimal or no requirement of paperwork and can issue/upload system generated certificates online.
- Integrated role based **Dashboards** to monitor Society's financial and social health and to manage/monitor their activities.

Technologies

GIGW Guidelines compliant based on shared and reusable architectures, i.e. applications; systems and infrastructure are characterized as service oriented, component-based and reusable.

- The solution provides multi-tiered architectures (at least 3-tiered with clear separation between the presentation logic, business logic, and data access logic). The Solution architecture is highly granular and loosely coupled.
- The solution is interoperable in nature and design and development is based on Service Oriented Architecture (SOA).
- The solution ensures data safety and integrity in the event of communication channels operation failures
- Domain specific categorization for Enterprise Architecture

Data Quality as per e-Gov Metadata standards

- Naming Conventions
- Data Type and Length
- Data Logs (Creation / Updation)
- Table Indexes and references
- Aliases & Default values

Security: OWASP security guidelines

- Single Factor Authentication(Password Based)
- Two Factor Authentication (Password + OTP Based)
- Captcha on Public forms
- Encryption and decryption of parameter.
- Role Based Work Flow in Application
- Forget Password, Password Expiration Policy

User Friendly Form

- Customized errors
- Customized system alert
- Client & Server Validation

- Required Field Validator
- Form Look and feel
- Restriction on file upload

Accessibility

- Web Based Solution – http and https
- 24x7 availability
- Hosted on NIC Cloud
- Separate Report Server

Learnings for Sharing

The e-Governance project/MIS for development of a standard and generalized solution for the Department of Cooperation HP was conceptualized in July 2017 during a discussion with the NIC HP Team and Officials of Department of Cooperation. It was proposed to digitalize the records of more than 5,000 cooperative Societies and about 47,000 NGOs registered in the State. It seemed to be a challenging task as the Department had **no official record of the NGO's** that were registered by the Authorities other than the Department itself (which includes 12 DC Offices and 68 Sub Division Offices). It took nearly 6 months for the Department to gather this humongous record and send it to the NIC team in the excel format which was still incomplete and had a huge no. of mistakes. The NIC Team then took the responsibility to correct and rectify this data to make it eligible enough for the back logging in the database.

Before, the advent of the online Application, the Department officials were not used to any web based online MIS for record management. Prior to this software, all the work was done manually on registers on papers that were handwritten, which was difficult for new paradigm shift and process re- engineering to an online digital MIS. But, with the launch of new system and government phase manner notifications, High level processes were made online and within a short time frame they **understood the flow of the application** and get used to it.

Multiple Training programs were organized at the Himachal Pradesh Institute of Public Administration, Shimla and at the Department, to end users, which included department (from all the circle and block offices) as well as the non-department users (for the registration of District and Sub Division level NGOs) to make them fully familiarized with the Application flow, their Roles and the importance of a web based MIS.

Supporting Documents

SRS, User Manuals and FAQ have been distributed and also made available online on the web-portal.

Application IT enabler

The stakeholders are expected to have the following general characteristics while using the application:

- Basic IT awareness and willingness to work in an automated environment
- Familiarity with the operation of basic Graphical User Interface (GUI) components of Operating
- System and Web browser
- Familiarity with the functions of cooperative society
- Ease in scanning and uploading documents to the web application

Innovation & Integration

The application is also integrated with **eHRMS-Manav Sampada** for departmental user authentication and authorization. It provides single sign-on with role based application access at each level. The loan, advances and recovery modules are integrated with **State Budget (e-Budget) and e-Challan** (Online payment gateway for seamless integration and data consolidation at department level).

In-Built Business Rule

The application is also designed to enforce scheme wise business rules and data validation at form level for first level data verification at entry/user level.

Digital Empowerment

Digital Empowerment for Various Stakeholders

The main objective of this Project is to make the State and all the Stakeholders digitally empowered in technology. It is ensured that government services are accessible by the citizens electronically by simplifying the application/user interfaces. Moreover, the Application has been made mobile friendly whereby a person/citizen/applicant/employee doesn't necessarily need a computer or a laptop ever time, but a Smartphone and internet connection.

Cloud First

A web solution hosted on NIC cloud has 24*7 accessibility.

Digital Data Bank

A data bank is created with complete automated process and is available for a robust decision making. All interfaces are integrated, like with IFMS for getting budget related data directly into the Cooperation MIS application.

Transparent System

Online processes and its Reporting on public Portal make the system more transparent to the end user.

Language Barrier

The application provides Bi-lingual form label with option for submitting form data in English and Hindi

Financial Inclusion

It helps in promoting the small groups to form the societies, framing their bye-laws, MoU, availing Government loan through various welfare schemes, loan disbursement, recovery, inspection, arbitration, appeal and routine monitoring.

Green Governance

Earlier, all the operations of the Department of Cooperation were manual and maintained on the handwritten registers and printed forms. The Complex & bulky Forms need more user time for filling-up at field offices, sending through post, data consolidation, digitization, missing productive and predictive analysis, validation, correction and report generation. There were no proper database oriented applications for future references and processing, it was very difficult to have yearly data analytics and comparative statements which are being maintained manually or in excel formats.

Following key areas are addressed in web solution to make system “A Green e-Governance Tool”:

1. Online Application for Registration with online Payment , Court Case and Grievances.
2. Online issuance of Registration Certificate.
3. Society Accounts & Audit, Funding details, Financial & Social Health, Budget estimation , Loan and Recoveries along with Statutory Compliance
4. Online submission of Annual Reports by registered cooperative societies (balance sheet/ Audit reports etc.). This is the main focus area where paper usage is being cut down in a big way.

This has resulted in following benefits towards green governance.

Paperless Operations: The application captures all department operations through online data entry forms available for both department officials and citizens. The paperless operations helping in eliminating the need to collect, process and store records on paper. Moreover, the indexing and searching becomes efficient and easy. It also increased the carbon credit rating of the State.

Paper/Postal Cost Saving per year

Total Papers used per year (based on approximation) = **6,50,000**

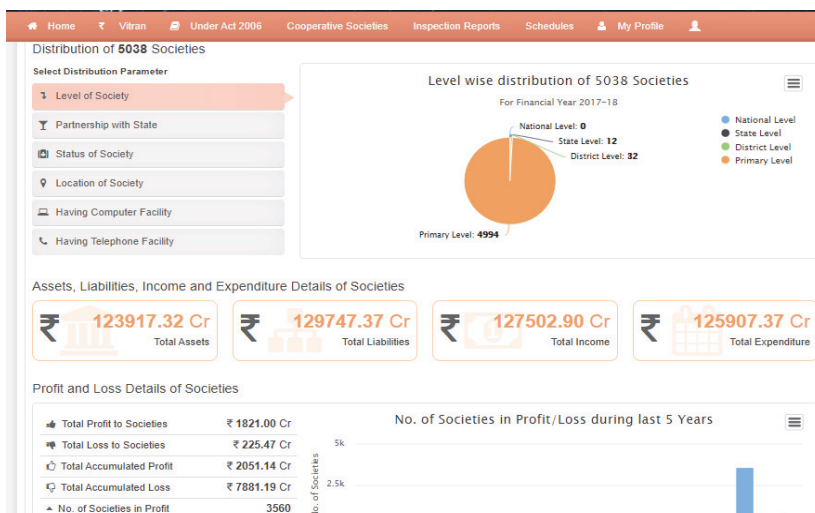
Number of Poplar Trees saved per month (1 tree makes 8,333.3 sheets) = **78** trees

Cost of toner/paper A4 size saved (@ Rs 1.6/sheet) = **₹10,40,000**

Cost saving on postal for monthly reporting through paper formats: $140 \times 40 \times 40 = ₹26,88,000$

User Dashboard

Provides real time monitoring of the data and at-a-glance views of key performance indicators which assist in effective and quick decision making.



MIS Reports

MIS reports are generated by the systems to help the Department in evaluating their daily activities, online grievance filing, their resolution, monitoring and tracking progress.

Email & SMS based alerts

SMS and Email based alerts on transactions related to Registration of Cooperative Societies and NGOs where the users/applicants get transaction alerts on their mobile number/email, help them get immediate information.

Online Feedback System

Helps to identify the problems and assist in the enhancement of the existing system and processes through suggestions/comments received from the User.

Reports in Digital Format

All Reports are available in digital formats with downloadable and search option.

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e-Anugya
M.P State Agricultural Marketing Board

Kedar Singh and Musharraf Sultan

Project Overview

APMC (Mandi) Provides platform to facilitate the farmers to sell their crop at competitive rates by an open auction, which starts at MSP as well as Traders to purchase the farmer's crops. APMC ensures the farmers payment and levies 1.5 % MandiCess on the notified crops and 0.02% NirashitCess.

Inefficiencies prior to e-Anugya

- ❖ Delay in information gathering and dissemination
- ❖ Vested Interest of Traders
- ❖ Lack of transparency in the system
- ❖ Inconsistency in the data
- ❖ Communication gap
- ❖ Delay in verification > resultant revenue evasion

It has been a very cumbersome job to manually collect and reconcile the data for the entire state of Madhya Pradesh i.e. 51 Districts, 257 notified Mandi Committees and its 300 (notified) Sub-Mandi Committees on a day to day basis. As Anugya Patrak is a sole document to verify payment of Mandi fee, its issuing and verification assumes a very high priority in Mandi's income and checking the evasion of Mandi fee. Manual process also entails use of stationery, which has its own risks of being duplicated by the spurious traders, and the human resource needed to make the system functional.

Scope

e-Anugya Processes

- A permit issued for transporting Notified Crops outside/within the Mandi Area Anugya Patrak is issued by Mandi Officials and by Traders also after verification of Bhughtan Patrak by Mandi officials online.
- Two Types of Anugya Patrak
- Within State
- Outside State

As per the Mandi Act 19(6) to issue Anugya Patrak, there are two pre requisite: Payment to Farmer Mandi Cess (Currently 1.5%) and Payment to Nirshit Sahayta Nidhi (Currently 0.2%).

In the case of within state Anugya Patrak, it should reach the destination Mandi within 14 days. In case of delay, Five times penalty is charged along with Mandi Cess

Registration of the Licensee Traders
Registration of the APMC employee
Activation/Deactivation/ Updation /Re Send Password of APMC employee/Traders by Mandi Secretary
Stock Inventory of the Traders
All Entries done by Mandi officials/Traders
Approvals by Mandi Secretary for BhugtanPatrak Verification, Anugya Cancellation, Exempted Mandi Cess Traders
Black Listing of the Trader by Mandi Secretary
Wallet for Crop Quantity – Debit /Credit of the stock in the Account of the Trader
Wallet for Mandi Cess- Debit /Credit of the amount in the Account of the Trader
Online Verification in the destination Mandi
Online Verification by Android App in the interstate barriers (54)
Third Party Anugya –New Concept
Anugya Patra Cancellation
Anugya generation for RO generated by NAFED/FCI
Govt. provides exemption for Mandi Cess on Food Processing unit. The Inventory for the same is maintained in the Trader Account
Account for the Crops taken from outside the state

Actors

Licensee Trader Registration
Mandi Officials Registration
Mandi Secretary Registration
Joint Director
Deputy Director
MD Mandi Board

Stakeholders

Entities/Stakeholders of the Project

- M.P State Agricultural Marketing Board
- Department of Agriculture and Farmer welfare
- 257 Mandis of Madhya Pradesh
- 54 Interstate barriers
- NAFED
- FCI
- NIC
- Department of Food & Civil Supplies, M.P

Status

The System is Rolled out in all 257 APMCs of Madhya Pradesh
Through an online system facilitates mandies critical financial activity, enhance the transparency, accountability and save crucial time in issuing, verification of documents and thus effectively checking the evasion of revenue. National Informatics Centre (NIC), M.P. has therefore designed and developed a web enabled

system for APMCs Anugyapatrak activities, for which initiative has been taken by M.P State Agricultural Marketing Board.

Key Aspects

M.P is the first state to implement this system in APMCs. Anugya is a document (permit) provided by APMC for transporting the agricultural produce to Mandi/other location. Mandi Cess (Mandi fee+Nirashit fee) is levied for issuing permit (Anugya). Usually the document is issued by APMC but by process re-engineering, the facility extended to the trader by an executive order. After Implementation of this system work load on APMCs reduced and Mandi cess evasion has been controlled and as a result sharp increase i.e. 20% in Mandi Cess has been recorded.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise			
		2016-17	2017-18	2018-19	2019-20
Anugya Patrak	Total AnugyaPatrik	992651	1206842	1331962	568982
	AnugyaPatrik_within State				1,36,491
	AnugyaPatrik_within State-verified				1,12,441
	AnugyaPatrik_outside State				1,04,903
	AnugyaPatrik_outside State-verified				12,351
	AnugyaPatrik_within State-Third party				17,429
	AnugyaPatrik_within State-verified-Third party				14,047
	AnugyaPatrik_outside State-Third party				3,185
	AnugyaPatrik_outside State-verified- Third party				598
BhughtanPatrik					2078097
Trader Registration					38017
Trader Self Registration					11627
MandiCess					₹ 12651725 09.93

Revamped System Implemented from 16-8-2019

Trader has a login and need not visitMandi.

Trader can issue e-Anugya after verification of Payment by Mandi secretary

Before issue of e-Anugya Trader has to ensure Farmer Payments

Traders Stock Position is updated.

Effective Control on the evasion of Mandi Cess.

Effective Control on Stock of Traders.

Plan for next year

All Mandi Transactions (Whole Business Processes of APMCs)

Enablers

Process Reengineering

- Earlier Traders had to come to APMCs along with the crop for getting permit issued. In the new system Traders can issue permits from their login after payments to farmers and Mandi Cess verified by Mandi Secretary
- Wallet for Crop Quantity – Debit /Credit of the stock in the Account of the Trader
- Wallet for Mandi Cess- Debit /Credit of the amount in the Account of the Trader
- Online Verification in the destination Mandi
- Online Verification by Android App/Web App at the interstate barriers (54)
- Third Party Anugya –New Concept
- Anugya Patra Cancellation
- Anugya generation for RO generated by NAFED/FCI
- Govt. provides exemption for Mandi Cess on Food Processing unit. The Inventory for the same is maintained in the Trader Account.
- Account for the Crops taken from outside the state

People

Capacity building

1. Various workshops were held in Bhopal, where all 257 APMCs officials remained present
2. Technical support given through Telephone/WhatsApp group/Email etc. On a daily basis
3. Half-yearly/Yearly training held
4. User Manual – Booklet circulation
5. Letter/Circular issued from time to time
6. Video Conferencing done through NIC from time to time with all APMCs and other stakeholders.

System is supported by all the top management officers in the department, Quick decision making done

Learnings for Sharing

- Resistance from Mandi Officials
- Mandi officials have been trained and strong will of higher Mandi officers could make it possible
- Resistance from Traders
- Conducted various Round of workshops with Traders and addressed their difficulties.
- Support from Higher Authorities.

- Process simplified and done step by step. Initially Permit were issued manually and entered in the system
- Offline line data. Later system has been revamped and implemented in all 257 APMCs

Digital Empowerment

- System is Bilingual and Unicode Compliant
- Use the local language
- User friendly system
- Conversion of Manual process in Digital platform with using Process re-engineering at every stage
- Minimum entry done manually in the system hence very rare chance of typo-mistake

Green Governance

Green e-Governance is about application of Green computing practices to the domain of e-Governance. It involves adoption of environmentally friendly practices with respect to creation, use, and disposal of ICT facilities.

There are several dimensions to green e-Governance and prominent among these relate to Power and Paper consumption, and disposal of e-Waste

- System is End to End online
- Less paper-work

No need to maintain manual records and hence administrative cost reduces.

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Enhancement of the G2G, G2C Services under e-Cooperatives Portal

Department of Cooperation, Government of Madhya Pradesh

Jyoti Kumbhare and Musharraf Sultan

Project Overview

MP-CJCMS is an attempt to automate the various functions of the judicial courts and citizen services with the help of ICT. The application facilitates downloading the court case decision, online cause list availability in public domain. The application is 24x7 web enabled application, Unicode compliant and various role based logins.

Following services have been provided in MP-CJCMS

- Court Case online Registration Process
- Court Case transfer Process
- Court Case Remand/Reopen Process
- Hearing Date entry and order upload each time
- Final Hearing through System
- Case Disposal
- Decision available in public domain
- Causelist available to Citizens
- Status / Tracking System
- SMS Alert to Lawyer/Petitioner/respondent at each stage
- Reports/Dashboard

MP-CAMS are a unique attempt made by the department for allotment of auditors from the department to carry out the audit of 41000+ cooperative societies in Madhya Pradesh. It is first kind of system in the country especially in cooperative sectors. Objective of the department is to assign the auditors to societies through system such that same auditors are not repeated as last year. Allotment is Pro Rata based. Types of Societies are also allocated on Pro Rata basis. System is totally transparent. Allotment done through system hence before allotment nobody knows which society to be audited by which auditors.

Following services have been provided in MP-CAMS

- Data of Auditors extracted from Service Book of employee
- Data of Societies extracted from Societies Database
- Auditors of Previous Five years entry District wise
- Pre Audit Data of Societies district wise
- Randomization and Allotment of Auditors to Societies on Pro Rata Basis

RTI Application Tracking System

Implemented in All District, Division, HO and Audit Sections of HO

Complaint Monitoring System

Implemented All Sections of HO and PA level

Crop Loan Waiver Complaint

Implemented in All District, Division , HO and Collector level

Scope

- Department Of Cooperation, Head office
- 20 Sections of Department of Cooperation Madhya Pradesh
- All 10 Divisional offices
- All 51 districts offices
- Apex Bank & 38 DCCBs (District Central Credit Cooperative Banks)
- 41000+ Cooperative Societies
- Citizen- for Public interface

Stakeholders

- Citizens
- Over 15 Million members are associated with the Cooperative Societies
- Department of Cooperation
- Over 2000 Employees are working in the department of Cooperation, M.P
- Department of Food and Civil Supplies
- About 21000 FPS are associated with Cooperative Societies
- Agriculture Department
- Societies
- NIC
- Researcher/Scholars
- NGO

Key Aspects

- First time this kind of Systems Introduced in Cooperative Sectors
- End to End Computerization of Cooperative Judicial Court cases
- Section 84 Cases direct entry from PACS(Primary Agricultural Cooperative Society)
- Mobile App available on Google Play Store
- Easy process for Registration of Court Case
- Record Keeping becomes easy
- Tracking of Court Cases is possible
- Paperless Process, so no administrative cost to department
- SMS Alert and Email
- Hassle free Registrations –totally Automated

- Court Cases – Fast Retrieval of information
- Establishment- Transparency
- Sec 84 Cases - Data is entered at source .i.e. from Societies
- Weekly/Monthly/Yearly Progress Report – Quick and Accurate information
- Reports/Dashboard

M.P Cooperative Audit allotment System (MP-CAMS)

- Introduction of innovative concept in Cooperative domain in the country first time
- Audit Allotment of 50900 societies through System (End to End Online Process)
- All cooperative societies Data validation including Liquidated societies, de-registered societies in the state
- All Employees registration/Current post updation on portal
- System Generated audit allotment orders
- Society Audit related data entry done on portal
- Society last five year auditors detail captured online.
- Complete transparent process
- Allotment on Pro rata Basis

RTI Application Tracking System

This Module is designed and developed for RTI applications. It has three kinds of RTI registrations

1. Registration
2. First Appeal
3. Second Appeal

After Registration of application, if Applicant is not satisfied of the disposal, He/she has right to go for first appeal and second appeal.

User can download its disposal from public domain and also can see the position of its request from public domain.

Complaint Monitoring System

This System is designed and developed for Complaints come to Hon'ble Minister and CM and Section level complaint. Complaint can be registered from PA login and department login both and after that it can be forwarded to particular section who can resolve this complaint.

Than particular department resolves the issue and dispose the request.

Crop Loan Waiver Complaint

The System is for Complaint Registered at HO, District and Divisions. Complaint may be Disposed from Collector login. The Complaints are also bifurcated bank wise.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19 (till date)
M.P Cooperative Audit allotment System (MP-CAMS)	Total Society	0	41205	50900
	Total Transfer	0	34	4676
	Total auditor	0	728	750
	Total auditor transfer	0	63	96
	Total new transfer auditor	0	38	76
M.P Cooperative Judicial Management System(MP-CJCMS)	Total District Level Cases (Registered/Disposed)	1934/880	1953/685	1714/193
	Total Division Level Cases (Registered/Disposed)	1277/965	1395/592	893/150
	Total Ho Level Cases (Registered/Disposed)	111/77	112/35	311/13
RTI	Total RTI Applications(Registered/Disposed)			1212/974
	First Appeal (Registered/Disposed)			114/71
	Second Appeal (Registered/Disposed)			0/0
Complaint Monitoring System	Total letter from CM (Registered/Disposed)			4/1
	Total letter from Minster (Registered/Disposed)			396/144
	Total letter from Credit Section (Registered/Disposed)			9/0
Crop Loan Waiver Complaints-2019	Total Application			1570
	Full Disposal			1267
	Half Disposal			210
	Cooperative Bank Complaint			1240

Implementation Coverage

M.P Cooperative Judicial Management System (MP-CJCMS)

Total Court Case Registrations: 1,17,857

Disposed off: 7096

M.P Cooperative Audit allotment System (MP-CAMS)

Total Societies Audit Allotment Done in 2018-19 - 50,900

New Services / Enhancements

M.P Cooperative Judicial Management System(MP-CJCMS)

New Transfer module Implemented Cases to other District/Division or HO level

M.P Cooperative Audit allotment System (MP-CAMS)

Transfer Module Added this year

Audit allotment done HO and Division level also

Enablers

Process Re-engineering

- AS IS process of Audit Allotment Re engineered
- MPCJCMS is in the process of Re engineering

People

Capacity building

1. Various workshops were held in Bhopal, where all 51 districts officers remained present
2. Technical support given through Telephone/WhatsApp group/Email etc. on a daily basis.
3. Half-yearly/yearly training held in M.P. Cooperative State
4. User Manual – Booklet circulation
5. Letter/Circular issued from time to time
6. Video Conferencing done through NIC for from time to time with all district offices and other stakeholders
7. System is supported by all the top management officers in the department, Quick decision making done

Value Indicators

Learnings for Sharing

Earlier in Manual system, it was difficult to keep the track of each and every case. Manually process requires lots of documentation, communication channels (Telephonic, Post etc.) and record keeping (register entries).

Challenges faced in implementing Process:

- Communication gap
- Unstructured Data
- Several modes of operations (head office, division office, district office)
- Unwillingness of the user to change the system
- Delay in information gathering and dissemination
- Less computer savvy staff
- Inconsistency in the data
- Training to old age staff is difficult

Digital Empowerment

- System is Bilingual and Unicode Compliant
- Use of the local language
- User friendly system
- Conversion of Manual process in Digital platform with using Process re-engineering at every stage
- Minimum entry done manually in the system hence very rare chance of typo-mistake
- The Project can easily replicate to any judicial system with minimum changes

Green Governance

Green e-Governance is about application of Green computing practices to the domain of e-Governance. It involves adoption of environmental friendly practices with respect to creation, use, and disposal of ICT facilities.

There are several dimensions to green e-Governance and prominent among these relate to Power and Paper consumption, and disposal of e-Waste

- System is End to End online
- Less paper-work
- No need to maintain manual records and hence administrative cost reduces

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Meri Fasal Mera Byora

Haryana State Agricultural Marketing Board

J. Ganesan, Abhishek Singal and Gurpreet Kaur

Project Overview

Single Platform for the Farmers of Haryana to provide various government agriculture facilities.

Scope

State Government of Haryana has launched Meri Fasal Mera Byora for all the farmers of Haryana to register for Rabi and Kharif crops. This information from MFMB helps the State Government of Haryana to provide direct services and benefit to the Farmers.

Stakeholders

State Government of Haryana, Farmers of Haryana State, Haryana State Agricultural Marketing Board, Department of Revenue, Department of Agriculture, HARSAC, Common Service Centers(CSCs)

Intended Benefits and Current Status

State Government of Haryana has intended to benefit the farmers under MFMB. Meri Fasal Mera Byora registration started from July '18 by the Govt. of Haryana, farmer crop registration for the upcoming Kharif 2019 season. Under Meri Fasal Mera Byora 6,83,000 Farmers registered for 30,00,482.98 Acres.

Key Aspects

1. Farmers and Government direct connectivity.
2. Crop identification for the future government planning.
3. Prioritize the crop purchase of farmer under MSP.
4. Transforming of traditional crop sowing and yield prediction process.

Digital platform for the purpose of online procurement and Direct MSP transfers into their account of Farmers.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		Rabi 2018	Kharif 2019	Rabi 2019
Online Payment to Farmers for Bajra	Procurement of Bajra	72593 Total Farmers 354.16 Amount (In cr.)		
Online Payment to Farmer for Mustard	Procurement of Mustard		230633 Total Farmers 2,572.07 Amount (In cr.)	
Online Payment to Farmer for Sunflower	Procurement of Sunflower		5569 Total Farmers 70.83 Amount (In cr.)	
Online Payment to Farmer	Procurement of Bajra –Rabi 2019 (Progressive Current Statistics*)			39678* Total Farmers 184.74 Amount (In cr.) *

New Services / Enhancements

- MFMB 2018 was not integrated with the Revenue records of Land. MFMB 2019 registration has been integrated with revenue records of Department of Revenue. Revenue department has also completely digitized the land records of Haryana.
- MFMB is planned to be the base for all Farmers services and schemes. Integrated platform for all the Farmers and Govt. Departments of Agriculture

Process Re-engineering

Initially the Farmers data was collected manually after survey which was further scanned and digitized. All these manual survey processes have been fully digitized, now the Farmers register directly on the portal for MFMB. It has helped in maintaining the records for the different crop season. Government of Haryana has centralized this information of the Farmers for further usage by various services and schemes.

People

Haryana State Agricultural Marketing Board has been the Nodal point for the MFMB service to the Farmers. Under this Scheme, Common Service Centers(CSC's) have been imparted training, so that village level registration can be done easily. Secretary Market Committees, Department of Agriculture, Department of Revenue

are also trained to assist and provide the information to the Farmers of Haryana. Radio Jingles, Advertisement for the awareness to the Farmers. MFMB initiative has been planned and executed under the guidance of CM of Haryana, PSCM, APSCM and CA HSAMB which has been evolved over the time period.

Learnings for Sharing

Initially MFMB was not integrated with the revenue records, verification process was done by Govt. officials of Revenue department. Now since MFMB has been integrated with revenue data, the information for farmer crop area is acquired from the digitized records which was earlier manually entered in MFMB 2018.

Now the Govt. of Haryana has also taken step forward with the automated verification process from other three data sets i.e. E-Gridawari, Department of Agriculture and HARSAC (Haryana Space Applications Centre). In MFMB 2019 for Rabi Season the information has been automatically verified if the crop matches in all three data sets.

Digital Empowerment

E-Governance initiatives have fully benefited the stake holders. In case of any Grievance, Govt. has formed GRC(Grievance Redressal Committee) comprising of HCS officers at Mandi level for sorting the concerns of the Farmers. This was also fully digitized, as each GRC has been given logins to sort the concern of the farmers immediately.

Green Governance

MFMB 2019 registration was fully digitized ,as no manual forms were printed, filled or collected for records. No scanning of the documents. Information is sent through SMS to the farmers. Govt. of Haryana also decided not to print the acknowledgment slips or form printing, all farmers can check the information 24 X 7 on the fasalhry.in portal.

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Bihar Rajya Fasal Sahayata Yojana Portal

Co-operative Department, Govt. of Bihar

Atul Prasad, Shailesh Kumar Shrivastava and Rajesh Kumar Singh

Project Overview

The Department of Co-operative, Government of Bihar has initiated a set of reforms to improve the entire functioning of the Department including compensation scheme for farmers called “Bihar Rajya Fasal Sahayata Yojana”. The earlier processes which had been undermined by lack of transparency, delay in payment to farmers. To make the whole system transparent and avoid the delay in payment to farmers, the government adopted this ICT based solution to create a transparent and accountable delivery mechanism by automating the entire business processes of the department. Bihar Rajya Fasal Sahayata Yojana Portal is a complete technology solution for delivery of services in achieving the objective of the department towards efficient and timely payment to farmers. The various activities of compensation are being tracked and results in better control and management of transactions at headquarter level and provides MIS Report based on requirements. The project has been implemented in all 38 districts 534 blocks and 8463 panchayats. Bihar Rajya Fasal Sahayata Yojana Portal is a one stop solution to facilitate

Objective

- Undertake computerization of Division/ District/ Sub-division/ Headquarter level offices to ensure electronic delivery of high volume services to the beneficiaries.
- Efficient delivery of services with improved service levels in an efficient, secure and integrated manner.
- For Policy makers to take proficient decisions in benefit of all stakeholders, the relevant information has to flow from bottom to top in the optimum timeframe.
- Extensive Capacity Building and training to field level functionaries, to ensure smooth migration to electronic delivery of services from manual delivery of services.
- Enhance transparency in operations to mitigate leakages and diversion of funds.
- Involve citizens in the monitoring process to enhance accountability.

Cooperative Department is delivering various services under certain schemes to the farmers of the state. For execution of these services financial transactions is also of prime importance and to attend this there are district cooperative banks (DCB) available at district level. In this case a situation arises where silos of frozen assets are maintained in heterogeneous formats in multiple offices of the department situated at varying geographical locations. The envisioned solution aims at bridging the gaps between people, processes, applications and systems which in turn will result to efficient delivery of services with improved quality levels. The application has been implemented as an automation of entire process flow of the department

and also of the PACS with the possibility of seamless integration with cooperative banks (CBS) for providing services to the farmers of the village in a more efficient manner. For achieving the above mentioned objective of seamless integration, three distinctive applications are envisaged for the direct stakeholders of the entire project and integrated in such a manner that all the services / information is available through a single window. Farmers are being registered online computer generated receipts are being provided. Standing instruction to the respective District Co-operative Bank is generated by the system for the payment to farmers through AEPS. To overcome the little to no connectivity at the village/ panchayat level, the application has been designed to work in an online-offline environment using mobile phones and designed to work for a network environment to access the information & update the data by different users simultaneously. This covers paddy, wheat and other crops sown in Bihar.

Features of Bihar Rajya Fasal Sahayata Yojana Portal:

- Use of Mobile App to collect data related to
- Bankers Module for reporting about payments made to Farmers.
- Mobile App to collect data related to crop cutting experiment.
- BCO/DCO Module for verification and approval for payments
- Administrative module for allotment to co-operative banks.
- Inspection module for Kishan Salahkar of Agriculture department for assessing amount of loss and validity of submissions made by farmers.
- Both Raiyat and Gair Raiyat Farmers are allowed.
- Calculation of Compensation amount as per scientific methodology adopted.
- Transfer of funds using Aadhaar Payment Bridge.
- Validation of Farmer land details through Revenue Records
- Validation of digital identity of farmer through aadhaar platform

Key Aspects

1. Farmer oriented scientific approach for compensation based on losses has been wide appreciated.
2. Online DBT portal for farmers
3. Unique of its kind in State with Aadhaar authentication and smaller fund release cycle.
4. Automated work flow based processes and alerts to stakeholders on milestones.
5. Integrated framework of Web, Mobile and GIS Platform
6. AI technique used for ghost identification
7. Service upto Panchayat level and high participation by panchayati Raj Institutions.
8. State govt. flagship program in place for fasal bima yojana.
9. Financial Assistance programme for farmers rather than crop insurance program in which insurance companies are mainly benefitted.
10. Integrated framework for automated transaction validation and management with timeline management.

Result Indicators Services

Name of e- Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Registration of Farmers				20,10,620
Validation of Farmer Records				18,16,384
Crop Cutting Experiment				6,100
Calculation of Crop Losses				16,07,385
Payment to Farmers through DBT, use Aadhaar Platform of NPCI				14,06,200
Account Reconciliation and UC Generation				14,06,200

Implementation Coverage

The project has been fully implemented in entire state covering all districts of Bihar.

1. 38 (Thirty Eight) Districts of Bihar
2. 534(Five Hundred Thirty Four) Blocks of Bihar
3. 8463 Panchayats of Bihar
4. 1.05 Lakhs Rural Wards
5. Citizens of Bihar State through Web Site <https://cooperative.bih.nic.in/>

Description	Planned	Achieved
1. Farmer Registration	28,00,000	26,02,384
2. Geographical Area	38 Districts, 534 Blocks and 8463 Panchayats	38 Districts, 534 Blocks and 8463 Panchayats
3. Fund Transfers	900 Crores	784 Crores
4. Functionality	Complete Software as per Department Requirements	Incremental Requirements are being added even from other departments
5. Delivery Channels	Web, Mobile Apps, SMS, Email	Available on all platforms
6. Category of Stakeholders	Farmers, BCO, DCO, HQ Level	All Categories have been provided with various features.
7. Implementation	Block Level	Block Level through Web Interface and Panchayats through Mobile Apps

New Services / Enhancements

Improvements/ enhancements specifically rolled out during the last one Year:

1. Creation and Updation of Beneficiary database of 20 Lakhs.
2. Verification and validation of accounts and beneficiary.
3. Physical Verification of Documents submitted by Farmers
4. Physical Verification and geo-tagging of Plots.
5. Aadhaar verification of each Beneficiary
6. Transfer/Release of Funds to beneficiary account through PFMS/AEPS
7. Generation of Utilization Certificate.
8. Mobile App for Field Inspection.
9. Integration with Agriculture department kisan portal
10. SMS alert to all beneficiaries oneach stage of processes.

Improvements/ enhancements specifically planned to be rolled out during the next one Year:

1. Integration with external systems.
2. Integration with PFMS/Banks
3. Integration with Aadhaar Payment Bridge.
4. Integration with SECC database for family verification
5. Creation of State Citizen Beneficiary Register including farmers

Process Re-engineering

1. Work flow based online system for farmer registration.
2. Automated verification process of land details.
3. GEO-Tagging of Farmer Lands
4. Integration with crop-cutting experiments.
5. Standard procedure for loss estimation.
6. Mobile Apps for data collection from field formations
7. Aadhaar verification of Farmers
8. Account seeding information of Aadhaar from NPCI.
9. Automated alerts on milestones of processes.
10. Removal of manual processes by digital identity and account validation process.

Bottlenecks

- The Department of Co-operative, Government of Bihar has initiated a set of reforms to improve the entire functioning of the Department including its Food grains procurement system though Primary Agriculture Co-operative Society (PACS) which had been undermined by lack of transformation, delay in payment to farmers. The department is not able to provide single point services required by the farmers/members

- Weak financial health of Primary Agricultural Co-operatives due to non-recovery of dues, lack of lower sales volume due to non-availability of Agricultural inputs
- Weak financial health of a few District Co-operatives Banks Co-operative Banks due to weakness of primary Agricultural Co-operatives and lack of repayments of District Coop. Bank Loans further loaning from the bank is effected
- Non-existence of ICT Infrastructure and Non-availability of technical manpower to handle the systems.
- Limited Availability of Mobile Phones and numbers
- Delay in Payment to Farmers
- Incorrect reporting and false information and non-existent Standardization

Challenges

- Getting mobile number and mobile devices was difficult.
- Sending the info in fixed SMS format/mobile application by all field staff was a challenge, which has been met by regular training through district level training as well as training through VC.
- Interaction with field officers by checking invalid data senders from District & State Hqs.
- Transfers caused problems as the officers carried their mobile with them.
- Acceptance of new technology based system was a problem insome districts due to old mind set,

Technologies

- The application is GIGW compliant and has adopted e-Government standards notified / recommended by the Gol.
- Work flow Management System with separate roles defined for each stakeholder
- Three tier architecture for data, application and middleware management.
- Data Analytics to identify ghost beneficiary
- SMS and email Integration for alert
- Fuzzy logic for matching names of Beneficiary and name received from Bank
- AI technique for identification and counting of objects in photographs.
- Social media platform for analysis of comments and public requirements
- XML based data transfer between various systems
- API integration for offline applications.
- Host to Host Integration with banking networks

People

- **State PROJECT Core Team**

NIC, Bihar and Co-operative Department, Government of Bihar have notified officers as Project Members of project team. This also have administrative officers, engineers, who advices and assist during project implementation as members. This team is supported by a team of programmers, well versed in adopting online web applications This team work under overall supervision of

Additional Chief Secretary, Co-operative Department, Government of Bihar and State Informatics Officer, Bihar. The project team consists of officers nominated by NIC along with hired programmers, well versed in application development using technologies such as web applications, GIS applications, Mobile Applications, other multi-channel delivery Systems.

- **User Department Core team**

In order to support project at department level it is necessary to create and train a group of resource persons who can work at department level and integrate MIS applications with GIS. User department has formed a cell with hired manpower and domain experts. These people have been trained on using application by Central Core Bihar team. These people not only co-ordinate with Central Bihar team but also interact with field formation for collecting data. In addition, the cell can motivate decision makers to use ICT in decision making process and create a ICT enabled environment for planning and monitoring.

- **Resource Persons at District level**

In order to support project at district and Block level, large chunk of data has to be uploaded to department level on a regular basis. Kind of Parameters required for decision making have to be identified by the district. District officials dealing with data have been trained and equipped both for uploading data, data standardization and also they can use ICT as a tool for decision making. Proper hardware and software infrastructure has been created at field formations for updating data. District Informatics Officer/IT Manager has been trained to use the application and provide technical support to the Project.

- **Workshops on adoption of latest technologies**

Workshops have been conducted for various stakeholders of the project to make them understand about available technologies and best practices. In order to support project at district and Block level, large chunk of data has to be uploaded to department level at regular basis. Numerous training programmes have been conducted by Master trainers as well as through Video Conferencing. Currently there is a emphasis on using Mobile technology to deliver services and gather data from field formations.

Project management & Monitoring adopted

State Level Apex Body-

This has been constituted under the chairmanship of Chief Secretary, with Principal Secretary/Secretary of Participating departments as members along with State Informatics Officer.

State Level Steering Committee-

This has been constituted under chairmanship of Additional Chief Secretary, Co-operative Department with Nodal Officer of Participating departments, Two Representatives from districts and Project Co-ordinator, NIC, Bihar as members.

District Level Executive Committee-

This has been constituted under the chairmanship of District Magistrate of respective district of Govt. of Bihar with Nodal Officers of participating departments, Two Representatives of Blocks and DIOs/ADIOs of NIC as members.

Use of new and emerging technology:

- Online System facilitating access by all Block Co-operative related offices of the state.
- Integration of SMS service for communication [Both PUSH and PULL Service]
- SMS alert at every stages of processes
- E-mail being used as mode of communication to stakeholders.
- Help Desk and Enquiry Facilities through Website.
- Mobile App for uploading data from remote locations
- GIS technology to facilitate spatial analysis.
- SMS based reporting and DASHBOARD for stakeholders
- Use of technology in the grievance solving
- To dispose the complaints within the given time frame
- Making the process transparent
- Data storage for future use
- Cutting short of the physical system process
- Social Media for Getting feedback and comments from citizens to improve processes.

Learnings for Sharing

Key learnings

- Every state must have single farmer database.
- Integration with Aadhaar platform for digital identity verification
- Integration with AEPS for payment disbursement
- Involvement of Panchayati Raj Institutions for Social Audit.
- Co-ordinated effort required between farmer related departments such as agriculture.
- Digitized Land Records and access to land records in digital mode.
- Proper forecasting mechanism for drought declaration.
- Integration with planning department for crop cutting experiments.
- Physical verification of losses with multi-tier mechanism.
- Centralized payment disbursal system
- Exhaustive training of various kinds to various stakeholders.

Innovative use of technology and Best Practices

1. Three tier architecture for data, application and middleware management.
2. Data Analytics to identify ghost beneficiary
3. SMS and email Integration for alert
4. Fuzzy logic for matching names of Beneficiary and name received from Bank

5. AI technique for identification and counting of objects in photographs.
6. Social media platform for analysis of comments and public requirements
7. XML based data transfer between various systems
8. API integration for offline applications.
9. Host to Host Integration with banking networks

Process Changes

1. Online Web and Mobile Application
2. Inspections through Mobile Apps.
3. Role based software for Block, District and HQ Level
4. Integration with PFMS for payment release
5. Aadhaar Integration Framework
6. Online verification of Farmer Records
7. Centralised Payment to Farmers
8. Reduction in Payment Cycle.

Digital Empowerment

Parameters	Earlier Initiatives	New Software
1. Platform	Manual	SQLSERVER 2008 and .net Platform, C#, AJAX, ARCGIS Server, Silver light, IIS
2. Localization	English	English and Unicode Support
3. Online	Offline	Online Software with work flow management
4. Mukhyamantri Fasal Sahayata Yojana Portal	Not Available	on-line facilities and Mobile App
5. SMS Support	Not Available	SMS Alert and SMS Monitoring facility has been added for monitoring
6. On-Line Receipt Financial Disbursements	Not Available	Direct Benefit Transfer has been done in the project
7. Help Desk and KIOSK	Not Supported	Available for Search Facilities
8. GIS Mapping Plots and other facilities	Not Done	Available with web interface
9. Mobile App	Not Available	For Enquiry and Online Reporting
10. Dashboard	Dashboard	User based dashboards most of the stakeholders

Green Governance

- The project has tried to popularize its motto of “THINK BEFORE PRINT - save trees” among stake holders and citizen.

- Most of the task is being performed online
- SMS and email is used for communication.
- Documents are submitted in Scanned Copy and verified online.
- Online submission of forms.
- Online records are being processed very fast
- Online grievance redressal mechanism
- Special training sessions are conducted for participants on Green ICT and its impact.
- Avoid printing files if reading the same on the monitor will suffice.
- Use virtualization on servers, when available, to allow multiple operating systems to run on each machine.

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Odisha Agriculture: A Complete Digital Transformation

Department of Agriculture and Farmers' Empowerment, Govt. of Odisha

Sourabh Garg, Sarita Sahoo and M. Muthu Kumar

Project Overview

The Farm implement Project deals with improving farm labour productivity through the use of agricultural machinery, implements, tools and pump set.

Jalanidhi project for Irrigation, is of utmost importance for an agriculture based state like Odisha which is heavily reliant on the uncertain Monsoon. Therefore, Odisha agriculture needs artificial watering of the fields.

The artificial way of supplying water to the agricultural farm or field at the right moment in an appropriate volume for the proper growth of the plants in order to get the maximum yields of cultivation is technically called irrigation. . So for the production of food crops and cash crops, irrigation is a must .Keeping view on the scarcity of rainwater, Govt. of Odisha envisaged to provide assistance under RIDF for establishment of PLIP (Private Lift Irrigation Points) Shallow tube well and Deep bore well.

The Farm implement Project deals with the purchase of agricultural machinery by the farmer for which subsidy will be provided by the Government. Odisha is an agricultural State with an unusually high potential for development. The state has a large amount of land, with good soils, that is not being used. Currently, land already in use is not being utilized to its full potential. In order to promote agricultural development and production, the project will provide agricultural machinery to farmers in Odisha to mechanize the farming industry. Farmers will be able to increase the production of exportable crops, reduce the cost of production, and promote the economic development of the State.

Government of Odisha is promoting use of solar pumps for irrigation with the objective of increasing irrigation potential and cropping intensity in the state. This program is being implemented in the state by Odisha Renewable Energy Development Agency (OREDA) under Science & Technology Department. For large scale proliferation, DA&FE has decided to support the program with additional financial assistance so as to make it affordable to all categories of farmers and also improve energy access in rural areas.

Objective

Scope

Enhancement of timeliness and profitability in farm operations: For the purpose of obtaining maximum returns or desirable results farm operations need to be timely executed. Department should have the capability to monitor the availability of farm

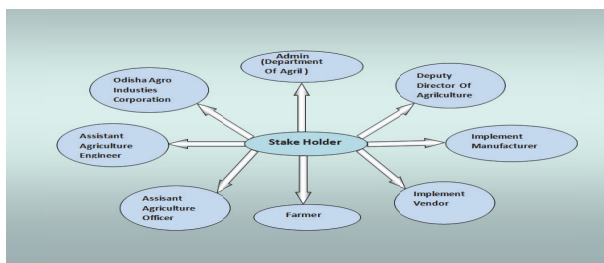
implement in right place just near to the Farmer door steps and target of the block may be transparent to all the farmer of that locality.

Provision of control of implement price and Reduction of drudgery in farm operations: Some farm operations are difficult in nature to carry out manually in dense forest areas. Department wants to control the price by publishing its price in a public official portal. The sustainable development of mechanization depends on the existence of markets, where prices guide the supply and demand of equipment.

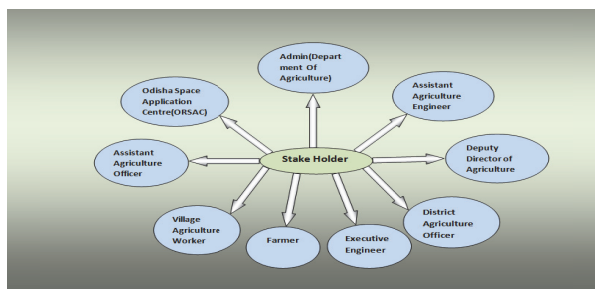
In recent days, the State has taken rapid strides in the farm mechanization sector. To keep up the rising trend and with the objective of increasing the farm power input and to bring at par with the national level, Odisha State Agriculture Policy -2013 has provisions for substantial incentives in the form of increased pattern of assistance. The subsidy for farm Mechanization is being met from different **centrally sponsored schemes i.e. SMAM, RKVY, BGREI, NFSM** and the **State Plan scheme namely, Popularization of Agri. Implements, equipment and diesel pump sets**. To bring about greater transparency in the scheme implementation, the state Govt. has decided to implement the Direct Benefit Transfer scheme of subsidy for farm machineries, implements and equipment and pump set during 2017-18. Agricultural mechanization is an input in agricultural production and rural development.

Stakeholders

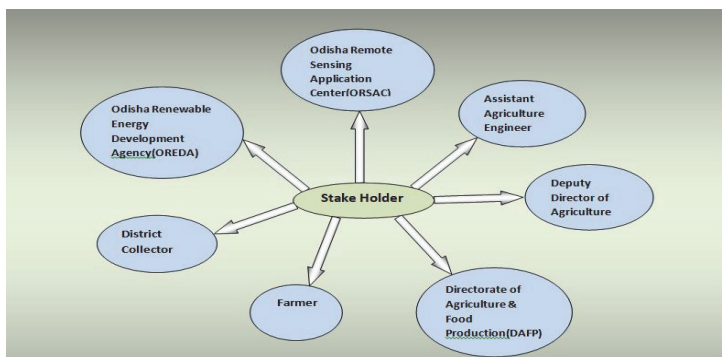
Stake holder Participation: (1. Distribution of Farm Implements)



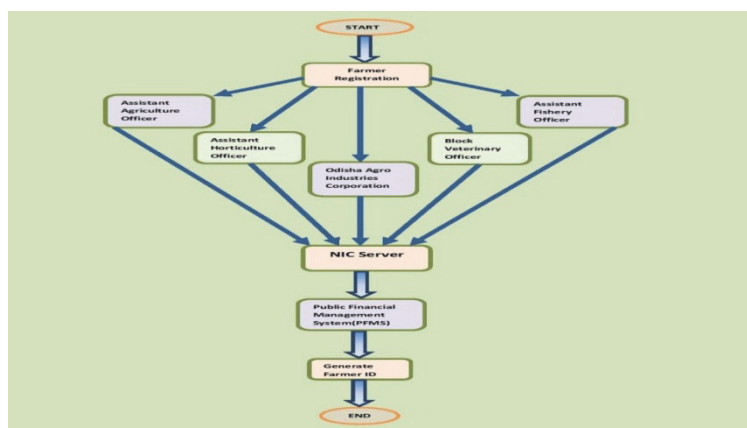
Stake holder Participation: (Execution of PLIP (Private Lift Irrigation Point) Application)



Stake holder Participation: SouraJalanidhi



Stake holder Participation: Farmer Registration



Key Reasons for Nomination

This project is an organized activity with a well-defined **purpose and workflow**, completed within given timeframe by dedicated team members for achieving the maximum transparency among the entire stake holder. Proper upfront planning and a complete transformation system using the latest technology created a best practice that leads to project success. Our system set up a proper way to regularly manage project using less resources, risk and change management, and of course care for the Green Governance .This system is highly decentralized, as individual stake holder is accountable for its assigned task and frequent Peer review greatly reduced overlooked mistakes in project deliverables. This online program also facilitates the error free distribution of farm machinery, execution PLIP points through electric power, installation of solar system for pump set through solar power and finally transfer of entitlements and benefits directly to the beneficiary's Bank account as well as to the OREDA account. The program cuts across all

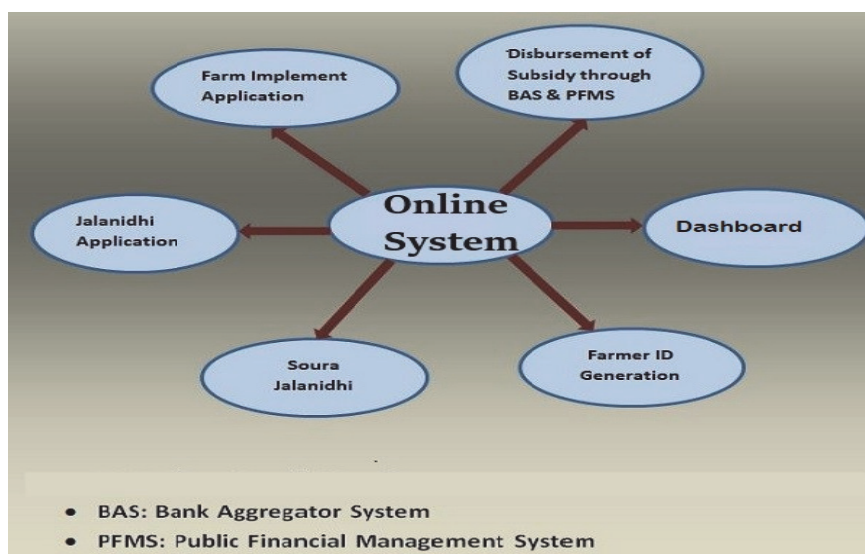
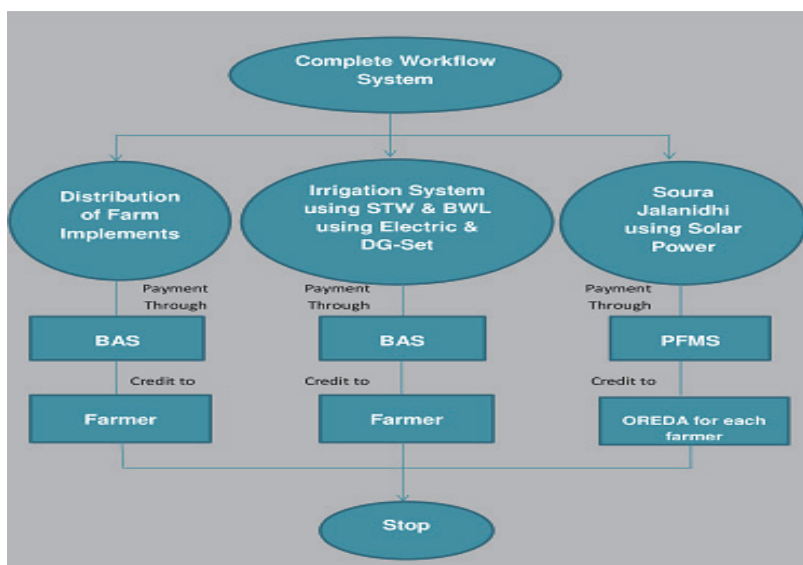
beneficiaries which include large farmers, small farmers, marginal farmers and share croppers. This streamlines the process and trims the number of intermediaries and delays in the system. All the central and state sponsored schemes can be monitored and implemented effectively by the department at a much higher level.

Exploitation of ground water through installation of Dug well is being taken up under MGNREGS scheme to increase irrigation potential of the adjacent areas. The non-availability of electric power in rural areas is delaying energisation of these DWs. Many of such projects are located in the remote farming areas having no electricity supply connectivity. Solar Pump set is the alternate choice of the source of water for farming in the very remote area where electricity is a rare choice. A flawless monitoring system has been introduced to facilitate the use of solar pump set to a farmer, who is having a dug well and no electricity is nearby.

Advantages of this system

A virtual big data bank of farmers has been setup using the farmer registration module which is a unique combination of Voter ID and Aadhaar. This unique farmer ID has been awarded to each individual for availing all the benefits of the proposed system.

- The use of Aadhar restricts the system from creating duplicates(repeat IDs) and ghosts(non-existent farmers)
- It helps in the quick and direct cash transfer to the intended beneficiary.
- The subsidy amount transfer happens through Bank Aggregator system which is integrated with four Banks (HDFC, ICICI, BOI and AXIS Bank).
- This ensures that the poor get the same level of service that the rich and the middle classes in the society receive.
- The financial transaction process (BAS- Bank Aggregator system) is a complete automated System designed by National Informatics Centre, Odisha.
- A complete automated payment system of Soura Jananidhi has been designed for releasing of benefit amount to stake holder (OREDA) through PFMS .
- A GIS based Dashboard system has been designed for proper monitoring at medium and top level management.
- Odishasolarpump.nic.in site has been developed both for Odiya and English.
- **Advantage of Progressive Web App:** PWAs are the web apps that look and feel just like a native mobile app. It works both in online/ offline mode operated on any browser like chrome, opera or Samsung & internet browser. Irrespective of all mobile OS this app runs on every platform without draining the battery of User's Cell.
- AAE verifies the feasibility of Soura Jananidhi through offline mode. Geo location and other parameters are being taken for further verification by ORASAC.
- The final completion have been checked by OREDA officials through PWA , If all ok it passes for subsidy payment thru PFMS.



As the premier policy 'Think Tank' of the Government of Odisha, the Department of Agriculture and Farmers' Empowerment designs strategic and programme frameworks to take this 5T initiatives for the betterment of farmers and to restrict the unauthorised flow of Govt. exchequer money to ghost beneficiaries. It endeavours to be declared as the best practices state for distribution of farm implements and Irrigation to the intended farmers. A good governance planning for this system has been set up and helps disseminate this to all stakeholders.

Result Indicators Services

Name of e- Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
e-Farmer Registration (in Nos)	Farmer registers for getting Farmer Id that is mandatory for all system (G2G, G2C)	1668126	368087	511814
e-Permit (in Nos)	Permit issued to farmers for Farm Mechanization(G2C)	28897	47599	72771
e-Subsidy (FM) (in Crore.)	Subsidy released thru BAS (G2G, G2C)	10.62	291.53	429.30
e-Subsidy (Pumpset)(in Crore.)	Subsidy released thru BAS for Pump set(G2G, G2C)	0	10.37	16.77
e-Subsidy (Jalanidhi)(in Crore)	Subsidy released thru BAS for executing Shallow Tube well and Bore Well. (G2G, G2C)	53.87	2.01	1.181
CSS in (in Rs.)	Released subsidy from Central Sponsored Scheme(G2G)	0	48.49	96.62
SSS (in Crore)	Released subsidy from State Sponsored Scheme (G2G)	64.65	253.41	349.45
e-pumpset-Permit (in Nos)	Permit generation of pump set for the farmers (G2C)	0	14351	21589
e-jalanidhi-Go-Ahead-Letter (in Nos)	Go-ahead-letter generation for execution of SHW and BW of PLIP for the farmers (G2C)	12969	1054	751
e-SouraJalanidhi-Go-Ahead-letter	Go-ahead letter generated for farmer to install solar pump.	0	0	218

Implementation Coverage

There is a saying “Be creative while inventing ideas, but be disciplined while **implementing** them.”

Executing this strategic plan was a great challenge for the Department, as most of the farmers of Odisha are not affluent and not acquainted in purchasing the implements and executing the PLIP points in all-in-cost price and Govt. benefits will

directly transfer to beneficiary account. Dept. minutely / patiently monitors the farmer issues and accordingly took the immediate steps for resolving the issues in a disciplined manner. The sad reality is that the majority of organizations (70 % according to Kaplan & Norton) who have strategic plans fail to implement them at the ground level. But, Department of Agriculture & FE, Govt. Of Odisha took immense measures to stand out from the majority.

The program was rolled out across the state, as a part of **Big bang adoption**, the instant changeover, which moved to the fully functioning new system on March 2017. But officially it was inaugurated by Hon'ble CM of Odisha on Krushak Day (Akhaya Tritia) April, 2017 and Irrigation system through solar power was inaugurated by Hon'ble CM of Odisha 1st October, 2018 **Stakeholder satisfaction** is a critical success factor and a key performance indicator for measuring project success. It is a measurement of stakeholder perception of a project. For these initiatives farmers are the most important stake holder. Farmers' satisfaction depends on the output, plot size, timely water release and location of the farm plots. Those issues are being immediately resolved by the Dept. officers with a feasibility study in time. Mobile apps have been designed to take geo location of the plot which is retrieved from the Bhulekh (Land records). ORSAC verifies the water contents as well as the land use information from their database.

Farmer does not need a third person to get a permit. Auto generation of permit according to the availability of target without any officer involvement has been achieved.

Manufacturers will upload their price for the dealers as well as the ex-factory price in the on-line field. The Registered dealers will upload their sale price for the SLTC approved machineries.

Farmers can know the sale price of all implements on the portal before purchasing the same.

Department can know the Ex-factory price of the implements.

Sourajalanidhi is a state plan scheme **which** is a dug well based solar pump irrigation system in convergence mode. Under the **scheme**, 5,000 solar pumps are supposed to be distributed to **Odisha** farmers in a transparent manner at a subsidy of 90 per cent to irrigate 2,500 acres of land.

- Farmers share are being collected through AXIS bank Gateway. As a result digital awareness spreads among the farmer to avoid the delay process of payment.

- This system encourages All stake holders to execute in time and use the Solar power.
- More subsidies attract more farmers to this scheme.
- Implantation strategy follows 5T mantras of Govt. Of Odisha

The following stakeholders regularly interact with the three system (farm implements, Irrigation (Shallow tube well, Bore well) and Soura Jananidhi)

- District Manager of OAIC (Odisha Agro Industries Corporation)
- Directorate of Agriculture and Food Production
- ORSAC (Odisha Remote Sensing Application Centre)
- Registered Implement Vendors and Implement Manufacturers
- Farmers of Odisha
- 4000 VAWs (Village Agriculture Worker)
- 97 District Agriculture Officer
- 314 Asst. Agriculture Officer
- 30 Deputy Director of Agriculture
- Executive Engineer of Agriculture
- Assistant Agriculture Engineer(AAE)
- District Collector

Asst. Director, OREDA (Odisha Renewable Energy Development Agency)

New Services / Enhancements

OTP system is introduced for achieving maximum transparency while taking Implements using OTP server of NIC gateway.

e-Vahan Integration was a major success for the Dept. as real farmer gets top up implement over the heavy implements RC book.

APIs have been shared to the State DBT portal of Govt. of Odisha for publishing our achievement over the year.

A fully automated payment system for PFMS has been designed for disbursing Solar pump subsidy to OREDA account for each farmer .

Payment gateway has been introduced for farmer to deposit the farmer share , no need to run after the officers to pay his/her share.

Auto generation of permit against unique farmer ID.

The online solar power system encourages more stake holders to this fold as handling of web/mobile system is very simple and robust. Time limit is imposed in each step so, release of subsidy amount to the investor is fast.

Bank Aggregator System is roughly based on the ISO20022. This is proven to be an alternative back bone for DBT based payment from single or multi bank account to thousands of beneficiaries' accounts in a robust, secured and transparent way.

This system is highly configurable to match any type of the customer need.

Multiple bank accounts from different banks can also be configured in a district wise manner for a single scheme through this system.

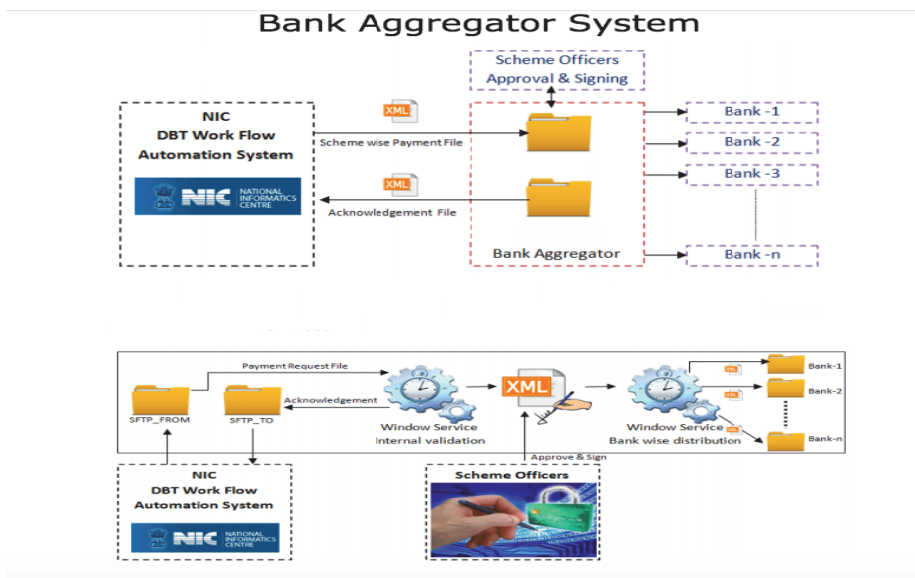
The disbursement of subsidy can be secured with configurable upper capping on both transaction as well as payment file level.

Multi-layer security with maker and checker facility is mandatory for each payment files in the system adhering to global financial security policy.

Complete MIS on payment request as well as response is provided to different levels of users including the scheme admin, project admin, concerned bank etc. through mobile app as well as web app.

Hybrid Mobile application has been developed for payment monitoring and approval process. Facility for the notification on all critical aspects of the process like low balance, over capping, duplicate payment and suspicious transactions is available to all the concerned project admin, which leave no stone unturned to make sure that all transaction are error free.

(Process flow of Bank Aggregator System)



Payment Work flow Automation system
(Source System) Interface

The BAS system will provide two SFTP based folder to the source system, request and response. All the communications are based on SFTP protocol. The inter server communications are firewall protected and the IP: Port pair are predetermined and white listed in the firewall level.

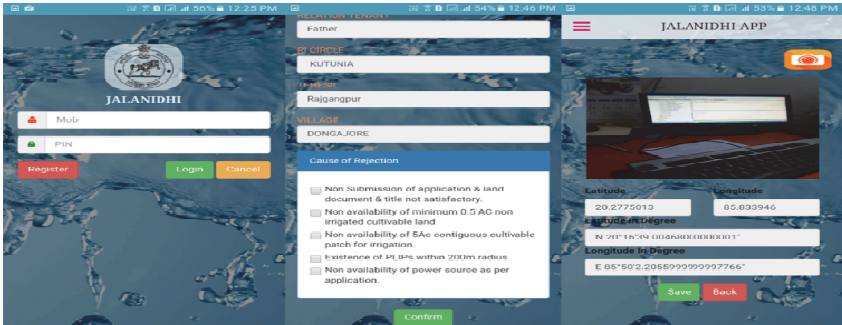
Mobile for monitoring and approval



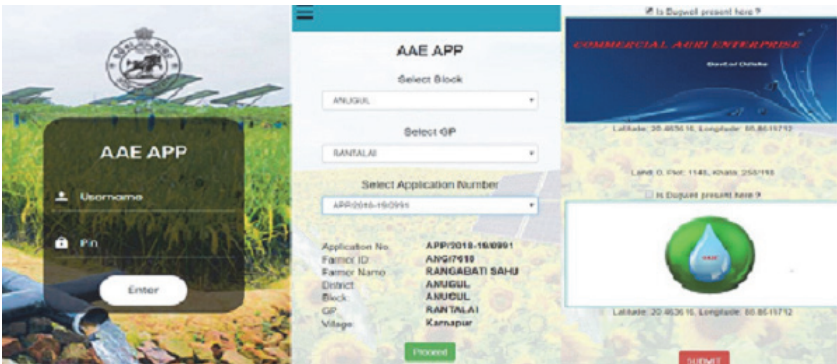
Hybrid Mobile app for supply of Farm Implements at Vendor point)



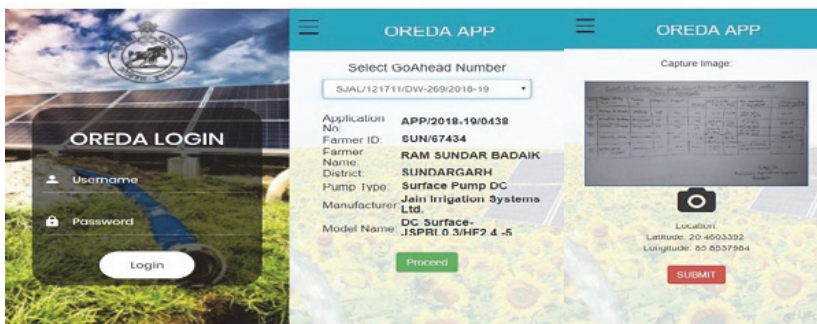
Hybrid Mobile app for Jalandihi (Shallow tube and Bore well)



Mobile App for feasibility by AAE of Sourajalandihi



Mobile App For OREDA in SouraJalanidhi



Hybrid mobile app is the mixture of native and web app.

- PWA mobile app designed for solar system, a offline friendly, using a small index DB caters for holding data offline until the availability of network.
- Mobile UI framework for consistent user experience across multiple mobile platforms.
- Since a majority of users want to reduce their mobile data consumption and have an uninterrupted access to app's data, a hybrid app is capable of providing just that – offline app accessibility without performance glitches. SQLite is used locally for working in offline and synchronize with the server when there is availability of internet.

Used Webapi 2.0 and angular js for better security.

Enablers

Process Re-engineering

Antoine de Saint Exupery says *“Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away.”*

Proper execution of **Processes Re-engineering** could be the game-changer for the Department and that was not an easy concept to grasp. Agriculture Department properly handled the task which was raised before the implementation of this new system for Farm implements and Jalanidhi (Micro-Irrigation) through electric and solar power. In Previous online system, subsidy disbursement process was something different, farmers were getting implement less than the SLTC (State Level Committee) by deducting subsidy amount. The subsidy was released to implement vendor. This new system includes Unique identification of farmer Manufacturers are added in this system for better perfection, which was absent in previous online system.

Cost of the Implements for different vendors are visible for farmers and other public Target of the implement and irrigation (Shallow tube well , Bore Well and dug well based solar pump set) are available for public portal,

No Land validation module Complete changeover system for solar power from manual system to online system.

This system plugs in the leakages as the Central / State government directly provides the fund to the beneficiary. **Money** is sent to the bank account of the beneficiary through Bank Aggregator System. Farmers take implements at all-in-cost price and the benefits are credited to farmers account.

The major steps taken by Department of Agriculture & FE for Re-engineered Processes are as follows:

1. Improved processes to better serve Farmers.

Farmer Registration to know the targeted beneficiaries.

Manufacturer Registration to restrict duplicate Engine & Chassis Number

Deputy Director of Agriculture and Development Engineers have rights to block dealers who have violated the protocols.

A better citizen view has been incorporated to check the availability of implements in their locality.

In complete workflow system, no intermediaries present for fraudulent transaction

Subsidy process system is fully automated

2. Strong processes imposed to sustain the system.

Farmer ID is mandatory. Aadhaar is a unique field for eradicating duplicate beneficiary.

All-in-cost Payment to Implement Dealer must be in NEFT/RTGS. UTR/Transaction ID is mandatory to proceed next.

3. Expanded processes to provide additional services to Department.

A dashboard System has been planned to monitor CSS and SSS, Supply of implement district wise / Scheme wise and Scheme wise money released.

4. Innovated processes that perform well to create and deliver good services.

Hybrid Mobile Apps designed for Farm Mechanization at dealer point for capturing Engine number, Chassis Number, GPS location of the shop and photograph of vendor and farmer. As a result GPS cannot be altered and engine number & chassis number cannot be tampered.

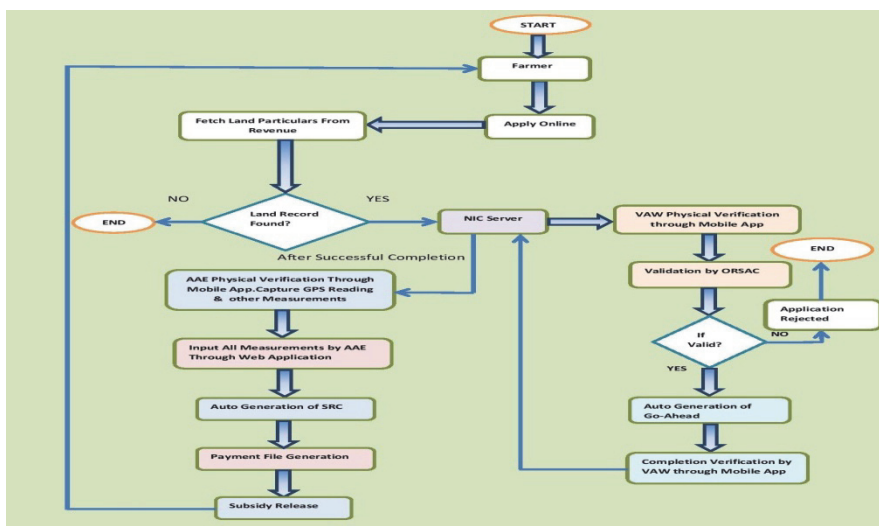
5. Achieving better Transparency.

OTP system has been introduced at the time of booking and permit generation of the farm implements. OTP will be pushed to the registered mobile number of the Farmer ID. Registration Certificate of the heavy implements like tractor is being checked from the vahan website through APIs.(parivahan.gov.in)

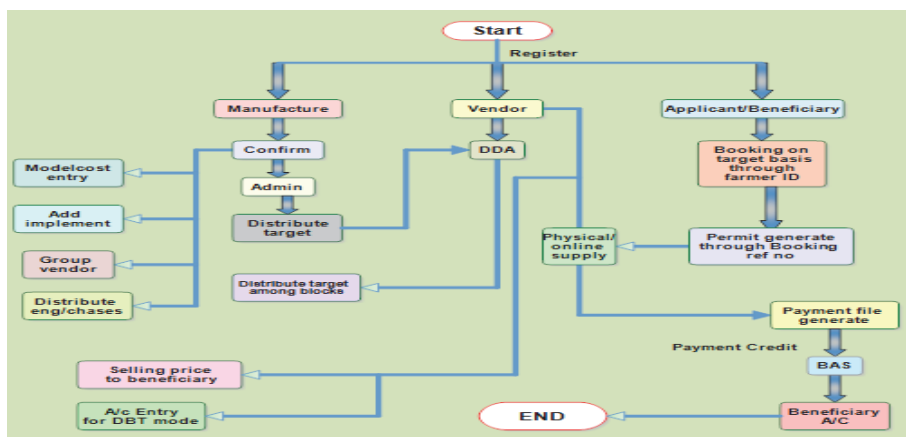
Hybrid Mobile app designed for Janani to capture GPS location and photo of the land before and after the execution of SHW and BW. System will take care of the beneficiary will have to take up the execution himself through executants empanelled with Directorate of Agriculture and Food Production, Odisha Initial and final GPS location of the execution point should not vary not less than 1 second (Approx. 100 ft or 32 meters) in term of longitude and latitude. This is completely taken care by the system.

Soura Jalanidhi process, a fully automated system implemented jointly by Department of Agriculture and FE and OREDA. A new system is adopted for revamping of earlier AS-IS manual system.

Jalanidhi (PLIP) Process flow



Distribution of farm implements process flow



Soura Jalanidhi Process Flow

The application for solar pump set are accepted by the system according to the target assigned to that block. This complete system includes, AAE visits the site for feasibility using PWA online/ offline mobile app, land validation by ORSAC, payment through AXIS bank payment gateway, approval by District Collector, auto permit generation, execution by solar vendor, completion details entered by solar vendor,

confirmation by OREDA Officers and finally release of subsidy to OREDA account through PFMS.

The Application of the farmers will be saved in the on- line system for a period not exceeding 15 days for taking farm implements. Within this period he/she can edit his choice if at all he so desires. If target is available, Permits will be generated online after the insertion of OTP number received by the farmer.

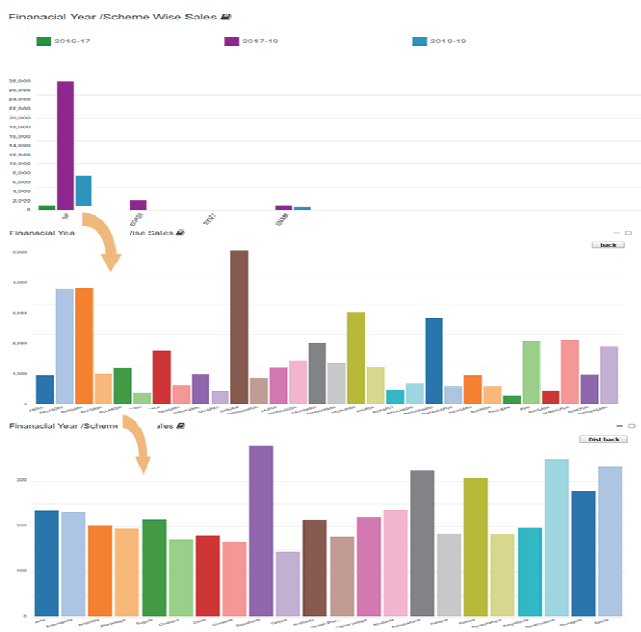
In the next step, the manufacturers will upload their price for the dealers as well as the ex-factory price in the on-line field .The Registered dealers will upload their sale price for the SLTC approved machineries. The dealer billing price quoted by the manufacturer and sale price of different dealers for that particular machine will be visible to the farmers.

Technologies

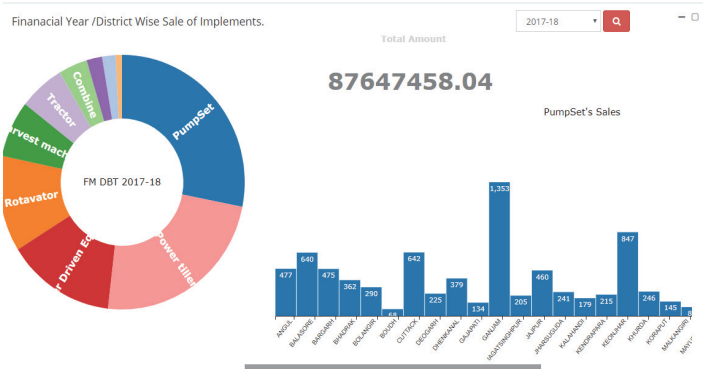
Data analytics reflected in dashboard which drills down up to 3 levels(block level). It shows financial year / district / scheme wise implements sale report for high level management for enabling Decision support system .

Data visualizations are one of the easiest ways to gain meaningful, valuable insight from our data. We used NodeJs in conjunction with Express and Ejs to open the Database connection and pass data from API into the browser There are several pieces that make up the visualization framework

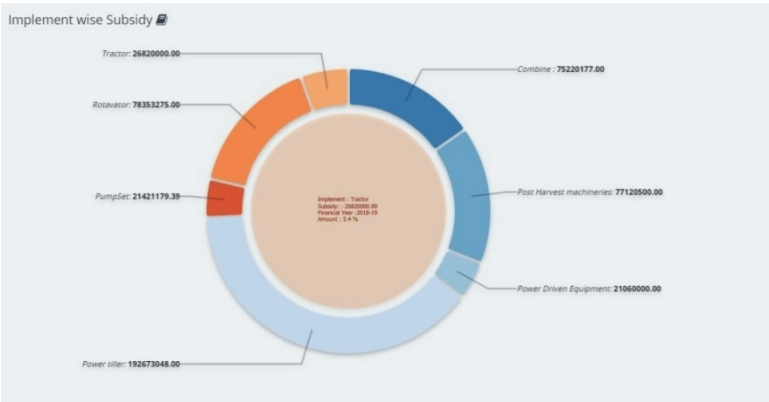
- **Node.js:** Used as an API framework, web server.
- **D3.js:** A data binding and visualization framework.



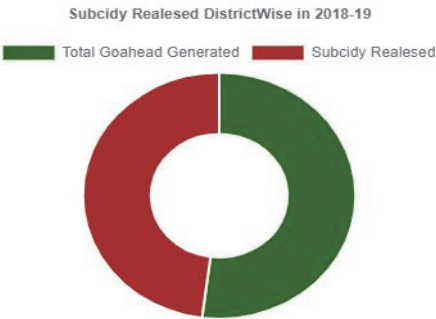
Drill down up to district level



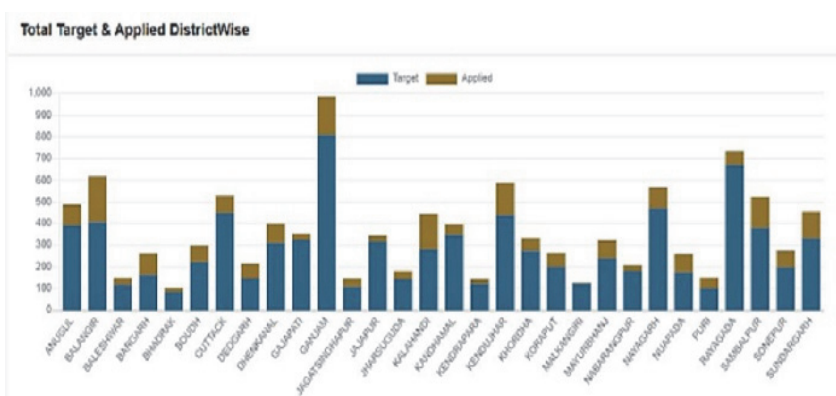
Drill down up to implement level



SouraJalanidhi Subsidy report District Wise:



SouraJalanidhi Target & Application Received District Wise



People

Capacity Building : Awolumate Samuel 's saying “ To succeed in life, you must build the CAPACITY to go through failure and the RESISTANCE from allowing that failure go through you”.

We understand e-Government, not only in terms of technical or analytical dimensions but also in terms of behavioural and organizational dimension. We conducted many 'capacity building' or 'capacity development' program for different stake holders to describe all activities of this initiative and change direction. As a well-functioning Department , we know capacity is the most challenging function of project . We regularly discussed with manufacturer, dealer, executants, farmer, VAW and Govt. official in different capacity building program to set and achieve objectives in a sustainable manner.

The some outcome of the capacity building programme disappointed the senior officers of Dept. for slow progress of project implementation due to lack of technical knowledge of taking GPS location of the farmer site in proper manner by VAW . ORSAC (Remote sensing Dept.) pointed out this difficulties as many location details are rejected by ORSAC due to improper taking of GPS location by VAW. Dept. immediately changed the stake holder from VAW to Ass.t Agriculture Engineer for assigning the job of feasibility study . A new mobile App hasbeen designed for AAE within 15 days for doing the AAE operation in better manner.

Leadership Support: Department created master trainers / leaders for mobile operation and farmer registration awareness and other activities involved with this initiatives who has the ability to guide, inspire / motivate and take people to achieve the aims of our Department . Out of this, we got tremendous support from farmers and other stake holders.

Management of change : Department could achieve success by imposing the very critical issue 'Govt. benefits directly to farmers' as we know any significant

transformation creates “people issues”. Dealing with these issues on a reactive, case-by-case basis puts speed, morale, and results at risk. A formal approach for managing change — we begin with the leadership/ IT team of Dept. and NIC and then engaged all key stakeholders. Change is always with us, everybody feels it in a Govt. Organization, we can't run away from it. We accepted this challenge by incorporating new Technologies as regular practice for successful project implementation. Department faced distractions and resisting change by the employees as there is no involvement of any officers within this initiative for Farm mechanization. They had the fear of lapses in their locality which would be unknown to him. So Strong MIS and Post verification by the officer was incorporated for this purpose.

Value Indicators

Learnings for Sharing

Richard Stallman says “Sharing is good, and with digital technology, sharing is easy” Brainstorming session for implementation was the easy part. But planning and executing ideas was often a huge challenge. Department communicates this program through the Panchayati Raj Dept “PEETHA” program to create awareness of using Solar Power in Remote Areas where electricity is not available at farmers point.

Planned for taking Implement manufacturer, a strong stake holder to the process where Engine number and Chasis number are to be input by manufacturer to restrict duplicate machine sale.

Even after meticulous planning, there were some unique challenges that Dept. had to be ready to tackle. As farmer ID is mandatory for availing any subsidy scheme of Govt., farmers could take strong steps to register themselves to get a farmer ID. Dept. did publicize in Print media and Press media for farmer registration immediately to get the subsidy for purchasing of farm implement and executing PLIP. To overcome all of them Department opened farmer registration in different desk of agriculture, Horticulture, Animal Husbandry, fishery and District Manager of OAIC. Information technology operations have to consider all the moving parts while executing any large-scale project.

This initiative was commissioned with very little time to plan and implement, As Department and NIC, Odisha IT teams have embraced change and, so execution mode kicks in right away. For example- Issues came in a big way while taking the initial and final GPS location by VAW through mobile apps, many cases rejected due to GPS location mismatch by more than 1second, our e-Gov, engineering cell in consultation with NIC, IT team figured out the root cause of the issue and modified

the app to take GPS only when the network is available or set in high accuracy mode.

When issues arise to any technical factor, for example we tackled an unexpected situation / challenge, we change our platform from JQuery to angular JS.

Aligned internal/ external stakeholders to our project strategy to provide them visibility as they engage across every aspect of project life cycle. Regular interaction with dealers/ manufacturers meets are being organized for smooth operation. Feedbacks are being taken care by us.

A proper Monitoring and evaluation system was planned to flag the fictitious inputs before its notorious behaviour starts inside the system. Indicators were developed for the different levels of the results chain which ensured that anticipated changes due to intervention are easily tracked. Setting indicators prior to project implementation is a good practice for project success. Examples: FarmerID is mandatory, Doing business Manufacturer/ dealer registration is a must, Entry of Ex-factory price, dealer price and farmer sale price are the prime factors for getting into the business. Ministry of Agriculture and Farmer Welfare, Govt. of India appreciated Odisha model and requested other states to replicate this initiative at their state.

Digital Empowerment

Govt. of Odisha is engrossed to create digital infrastructure for empowering rural communities mostly farmers, enabling digital delivery of services and promoting digital literacy as about 60 per cent of Odisha's population is rural based and agriculture is the main source of livelihood. Govt. is interested in doubling of farmer income by 2022. Farmers of Odisha are now digitally empowered to get a permit from any place.

Now farmers can deposit their share through payment gateway system of Solar system. SMSs are being sent to all stake holders in each step.

Farmers are very much acquainted with the OTP system without which it cannot proceed further.

VAWs who are the lowest employee of the Agriculture Dept., the more digitally empowered to train the farmer for online system.

This initiative has a unique feature that farmers can generate their own permit and go ahead as per the availability of target. Farmer can know the target of that locality for implements and PLIPs.

Irrespective of the class, section, age, gender disparity, religion and different social sectors, farmers even with the knowledge of regional languages are linked with our

system and derive all sorts of benefits offered by the Department of Agriculture and FE, Govt. of Odisha.

Implement dealers (rural and urban area) use mobile app at the time of supply of implements to farmer. It is mandatory for taking GPS and photo of engine and chassis no, farmer and dealer. Otherwise subsidy will not be credited to farmer's account. Conducted many training programme for the block level officers and made them as master trainer. Now remote area Dealers are very acquainted with the mobile operation Village agricultural worker are now expert in mobile operation as feasibility study of PLIP is being carried out by VAW.

Dept. can predict future usage of farm implements and PLIP by using the dashboard system up to block level.

Green Governance

Green agenda sits at the heart of Department of Agriculture, Govt. Of Odisha .It wants to improve the bottom line by becoming more efficient when using energy and other natural resources that is wastage of unnecessary paper consumption.

OTP system is introduced to avoid any extra step to test the genuineness of the farmer. Integration with Transport system e-VAHAN leads a complete green e-governance solution which removes RC book uploading and keeping that copy for reference.

Designed PWA mobile app which does not drain the user mobile battery. Frequent charging due to overloaded apps may be avoided.

In response to the challenge to be the “Greenest Government ever” our ICT program does not require any hard copy to be retained in the file. Paper transaction is completely restricted for all the stake holders and a strong Good MIS / Dash board has been developed to monitor the achievement in proper way. Department does not force to keep document proof for this initiative, which is in accordance to the Green governance concept. Permit generation which is very important, is an automated process and no signature is required as all transactions are being stored on the central server.

Green Governance is a systematic life-cycle to drive us towards overall sustainability. Our Department focused on continuous improvement by incorporating all new technologies and make the existing system much faster. Every six months we add new technology to the mobile app.

If champion leaves, system will sustain.

This initiative is responsive to any device so easily be accessible to mobile and tab. Implement dealers /Officials can do their work at anywhere with any device .No need to procure computer, printer, scanner and etc.,. Data storing was a great problem which was resolved by hosting the initiative in National Data Centre, Bhubaneswar.

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Telangana State – Integrated School Management System

T. Vijaya Kumar and B. Balakishore

Project Overview

One of the objectives behind the proposed Integrated School Management System (ISMS) project is to digitize the day to day activities of department and leverage the reach of IT in making the overall system more efficient, cost effective, transparent, agile which can respond to the demands of new age education along with streamlining the processes within the schools. Another objective is that over a period it shall evolve as a repository of all necessary information related to school eco system within the state.

To achieve the above, a dynamic Web Portal for School Education department has been designed & developed to monitor Education Services in the state of Telangana ensuring a quality education service. This IT solution covers all the major activities (e.g. students' registration, attendance, mid -day meal, book printing requirement etc.) at all schools across Telangana. The overall scope is divided into 4 parts based on their functionality.

Phase I

1. Design and development of portal for Education Department
2. Design and development of online and web based solution for school education system
 - Student Information repository
 - Teacher Information repository
 - School Information repository

Phase II

3. Teacher's Service Profile
4. No objection Certificate for Travelling Abroad, applying for passport
5. Medical Reimbursement
6. Mid-Day Meal
7. Geographical Information System
8. Private School Permission
9. Continuous Comprehensive Evaluation

Phase III

10. Online Admission
11. Examination Monitoring System
12. School Inspection
13. Online UDISE

14. Text Book Printing & Distribution
15. Leave Management

Phase IV

16. Online TC
17. Grievance Management
18. Adverse Report Monitoring
19. Sports Module
20. SSC Nominal Rolls
21. Asset Management
22. School Education system is to be inclusive of Dashboard relating to Key Education Indicators and Key Performance Indicators.

Stakeholders

Key stakeholders are Student, Teachers, School administration, citizens and departmental officials.

This project aims to achieve the following benefits for the department

1. Preparation of a digital repository of students attending schools across the state.
2. To have a comprehensive system to track the performance of students, teachers and schools. This will allow the government of better channelization of resources and better focus on areas which needs attention.
3. Since the students and teachers biometric attendance is being captured, it will help in getting rid of problems of bogus/ inflated number of students and teachers.
4. Big financial saving. As the bogus cases of students and teachers will be addressed, it will result in huge financial savings for government.

Better utilization of mid- day meals through the use of biometric attendance, capturing on daily basis.

Key Aspects

Telangana Integrated School Management System is a comprehensive IT solution covering all the major day to day activities of Telangana schools. Department has decided to nominate this project for e-Gov. Awards for the following reasons.

1. Department officials have worked very hard to implement this ICT solution and this nomination is a kind of endorsement of their hard work. Department believes it is one of the unique IT solutions for schools deployed anywhere in India and this nomination will provide them a platform to showcase it on national level.
2. They also feel that it will generate enough awareness to other states to go for an IT solution in their respective states, which will benefit millions of students.
3. This will send a message to the staff that department has full faith in their claim of having developed a very good IT application. Should this entry win, it will get recognition on national level, which will be a great motivation to the whole department.

In case this nomination gets recognition at national level, it will also help the department in its drive to bring those kids to school who are still out of the net and are reluctant to join.

Result Indicators Services

Name of e- Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Student Information System	This captures all the details of student studying in schools across the state like Name, Age, attendance etc. This also captures their performances against pre-defined parameters. Benefits – This helps department to take necessary corrective measures depending upon the performance curve of individual students. Biometric attendance capturing has resulted in improved presence of students in schools.	NA	NA	6001680
Teacher Information System	This makes available information pertaining to Teachers e.g. Name, Date of Birth, Caste, Age, Education Qualifications etc., of government schools in one place Benefits – This gives the department a better insight into individual teachers' performance and efficient management of administrative matter. This will also help department in better planning of training needs.	NA	NA	263366
School Information System	To make available the complete information related to a School like its Location with geo coordinates, Number of students enrolled, number of teachers available, Management details, facilities available, distance between schools under same management etc. Benefits: - Gives a better insight into the school infrastructure available and gaps, if any, helps in better performance monitoring, allows in taking appropriate and timely corrective measures. It also helps in better and effective allocation of resources to individual or a group of schools.	NA	NA	40714

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Text Book Printing & Distribution Module	State Government provides free text books to students studying in Government schools and this module helps in capturing the print requirement to control excess printing of books, thereby bringing down wastage. Benefits:- This module has helped the government to achieve the exact number of books to be printed for an academic session. This has resulted in big financial saving for government.	NA	NA	Books Distributed : 22793022 Books Printed: 20987537
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Implementation Coverage

The implementation of project was divided into 4 phases.

Phase 1 was to be implemented in 3 months and it was completed within stipulated duration.

Phase 2 also had an implementation duration of 3 months which was broadly implemented as per schedule. During the implementation, department has decided to prioritize some other modules from phase 3 and hence 2 scheduled items were pushed ahead to accommodate priorities.

Phase 3 duration is also 3 months. More than 50% implementation of this phase has been completed as per schedule. In the middle of implementation, department has taken a few policy decisions and which resulted in new requirements. These requirements were prioritized over the items of Phase 3 and hence the implementation schedule also got changed.

Phase 4 is under progress and is on as per schedule.

New Services / Enhancements

The initial success of project has enthused the department to enhance the scope of project and also improve it to cover wider areas. As part of this, government has included a module for CSR activities, since it is pursuing the corporate to participate in its IT initiatives and generate funds. This has been rolled out and department is getting good response from corporate.

It has a few more improvements/ enhancements lined up, which will be rolled out during the course of one year.

1. Funds Monitoring (Finance Module)
2. Civil Works Data Entry Progress and Monitoring
3. Mobile App (Android) for Civil Works Status Updating and Monitoring Court Cases Monitoring System

Enablers

Process Re-engineering

Earlier department had manual system to monitor and execute all its day to day activities. Department has taken the initiative of automating the overall functioning, by implementing an appropriate ICT solution. This has helped department to establish a process driven system, where outputs are achieved through defined business rules.

The process of attendance capturing has also been automated, where bio metric attendance is captured using a specific application.

Technologies

Data Analysis of previous years, number of printed text books and number of students enrolled revealed that a large number of books remained unused or in other terms were printed in excess of what was needed. This year, based on the number of students enrolled and availability of indent of printed text books the number of books to be printed was rationalized. This resulted in a big saving for department, as less number of books were printed, opposed to previous year's practice. Now, this has been adopted as best practice, whereas a business rule has been defined by department, regarding number of books to be printed considering the available indent and number of students registered.

People

This comprehensive IT application can't be successfully implemented without the support of quality manpower. A team of high quality training people was assembled, who imparted training on developed IT application to end users to ensure smooth implementation & functioning.

A technical helpdesk was also established, which was manned by trained resources, who in turn answered all the queries from field regarding use of the software and if required they were responsible for escalation to maintenance team.

Value Indicators

Learnings for Sharing

One of the key learning was that one should always discuss the requirement and finer points from field functionaries. It is these people who will use the system and their input is very important. They can provide the probable practical problems that may come up post implementation. Their feedback can help development team to overcome these in their solution.

Digital Empowerment

As many of the schools are located in far flung areas of the state, network connectivity was a challenge and also many teachers didn't have the required knowledge/ awareness to use the system. The language of application development was English which – in many cases – proved to be a challenge to some stakeholders.

To overcome these challenges certain steps were taken, which helped to solve the issues and all the concerned were able to benefit from this initiative.

Where network connection was not good, an offline mode of attendance capturing mechanism was provided, which reduced the dependency on network connection. Lack of knowledge and awareness was handled through arranging focused and elaborate training methods. Detailed User's Manual was prepared and was given to them. A technical helpdesk was set up to provide telephonic support to these people.

Green Governance

As this application has just started, there is a very limited scope of implementing Green Governance, however department has planned initiatives to make the stakeholders aware about this and its significance.

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**MIS Portal for Scheme of
Jan Shikshan Sansthan for Skill Development
Ministry of Skill Development & Entrepreneurship, Government of India**

Kailash Chand Gupta, Sanatan, and Ramakrishna Sura

Project Overview

JSS scheme aims to supplement the income level of the beneficiaries by imparting/upgrading skill set based upon the local requirement. Currently, 247 JSSs covering over 27 States and 2 UTs in the country are functional and soon it will cover each district of the nation.

Objective of JSS Portal:

- Management of Scheme
- Achieve program vision
- Online Monitoring of Physical & Financial Achievements
- Timely Collection, Updation and dissemination of Information
- Monitor Performance indicators
- React to changing needs
- Track the expected result
- Measure programme effectiveness
- Dissemination of Information to Citizens
- Network all the Stake holders
- Secured/Authorized Access for data updation
- 24X7 accessibility of information
- Web based Operations at all levels
- Eliminate Data Redundancy / Centralized Database Operations

Scope

- **Admin portal development:** To provide the option of report downloading depending upon the requirement. Also, this platform has the section of Approval and rejection in different areas like Assessment and Assessor sections. Admin portal can have the functionality of user management also, depending upon the MSDE need.
- **Assessment flow:** Evidence based Assessment of JSS beneficiaries and the functionality to assign an Assessor, observer and follow up with different documents upload, along with mark summary.
- **Re-Assessment flow:** Beneficiaries those are unable to attend the Assessment on

allotted assessment day, can again conduct their Assessment through JSS on different date. This section will be managed through Attendance taken on Assessment day and will auto populate the list of absent students of particular batch. The workflow cycle will remain same as Assessment flow.

- **Certification:** This section provides the option to JSS centres to download the certificates of beneficiaries. Certain filters will also apply to filter the list of candidates. QR codes are also placed on the certificate to provide additional authentication tools.
- **Finance Module:** This section will provide the options to JSS users to log their expenditures under different heads. The following major modules will be covered under this section:
 - Income/ Receipt
 - Expenditure (Batch wise)
 - Other Expenses
 - Financial Document Upload
 - Provision for management of payment instalments to JSSs, based on the utilisation of earlier instalments.
 - Provision to release the payment on the basis of previous instalment utilised.

API Integration: At a later stage the portal will be integrated with PFMS system, Digilocker for certificate repository, NCS portal for livelihood linkage, NITI- Darpan Portal for NGO authentication and Skill India Portal for sharing beneficiary lifecycle data.

Citizen View Report: Under this section, following reports will be generated for citizen portal:

- Profile of JSS
- JSS Directory
- Course details
- Board Of Management
- Staff Details
- Beneficiaries
- Financial Details- Income and Expenditure
- Annual Action Plan
- Training Centres and Location

Question Bank Module: Under this section, system will capture the different questions in excel format, before starting the assessment and these questions will be accessible by Admin user, to set the papers in future or analysis purpose.

Success Stories: Under this section, beneficiaries can define their success story after completing the training under JSS Scheme. User may enter different details of their past and current employment to showcase the benefits they have received from the scheme.

Grievance Redressal Mechanism: This section primarily covers the receipt and processing of complaints from citizens and consumers, a wider definition includes actions taken on any issue raised by them to avail services more effectively

JSS Profile Page: On JSS web portal, we will create a separate page for every JSS, on which we display the introduction of JSS centre, Board of management information with their contact details. There are close to 250 JSS running across India. Same number of pages will be developed for the portal.

Online tracking of JSS beneficiaries: This section will cover the online tracking of JSS beneficiaries regarding their employment and entrepreneurship i.e. Name of employer, Trade, Salary/ establishment of business, year of establishment, Average income from business, etc.

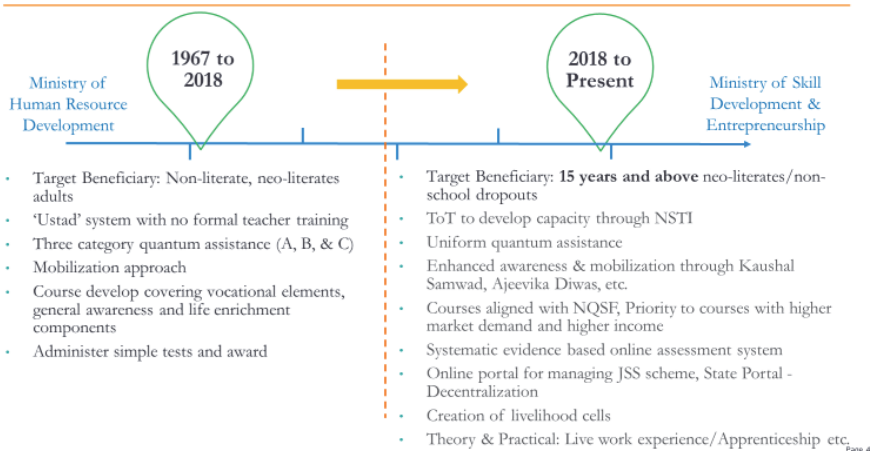
Livelihood cell: Linkage with National/State Government livelihood, employment/ entrepreneurship schemes and related departments.

Key Aspects

The Scheme of Jan Shikshan Sansthan (JSS) is being implemented through NGOs in the country since 1967, named as Shramik Vidyapeeth (SVP). With the transformation in the economic and social setup over the years, the role and scope of these polyvalent educational institutions have widened manifold. In the changed scenario, the focus of Shramik Vidyapeeth (SVP) was shifted from industrial workers in urban areas to the non-literates, neo-literates, unskilled and unemployed youth particularly from SC/ST/OBC/Minority/Divyang/Women throughout the country especially to underprivileged people in the rural areas. The SVPs were accordingly renamed as Jan Shikshan Sansthan (JSS) w.e.f. year 2000. The scheme of Jan Shikshan Sansthan was consequently transferred to Ministry of Skill Development and Entrepreneurship (MSDE) in July 2018.

The scheme focuses in imparting/upgrading skill training to the socio-economically backward and educationally disadvantaged group by providing them market relevant skill sets and livelihood creation opportunities which makes them at par with all groups of society. The JSS function under the NGOs, registered under the Societies Registration Act, 1860 and have unique ID of Darpan-NITI Aayog portal with annual recurring grant from the Govt. of India. The affairs of the JSS are managed by the Boards of Management (BOM) of respective JSS. These NGOs play a vital role to provide vocational training at doorstep of the beneficiaries in the unreached areas of the country.

Journey of Jan Shikshan Sansthan



As, in the earlier model of JSSs, the following issues existed:

- The portal was on older technology (JAVA jdk 1.4 & struts framework), which limits the new functionality to incorporate.
- Various security risks were there with the previous system as new security measures cannot be implemented due to technical limitations
- Slower performance of the portal due to architecture design during operations
- The database was on an older version, leading to lack of stability.
- Back-up policies and disaster management were also compromised.

MSDE identifies the need of robust MIS portal to increase the Scale of scheme and leverage technology to establish connect between the aspirants and the market needs.

MSDE, through JSS scheme desires to skill 1.1 million youth by 2020. Such large-scale transformation initiative requires the support environment to adapt and scale up accordingly therefore it is natural that JSS Portal, being one of the key enablers, should also undergo transformation to effectively fulfil the objectives of the scheme.

MSDE has launched a new JSS portal on December 2018. This new Portal of Jan Shikshan Sansthan is aimed at bringing in transparency, accountability, providing quality and timely information to all the stakeholders of the Skill Ecosystem. The portal aims to provide one common interface to all the stakeholders such as Management of MSDE/DJSS, State government department, JSSs parent and implementing NGOs, Aspirants, trainees-registered-trained-certified-placed, Assessment agencies, Recruitment and collaborating agencies etc. under one system.

Currently, Admin Portal for dashboard and analytics, Assessment & Certification process, Board of management features, API Integrations (Skill India Portal, NITI-Darpan portal, NCS Portal, Digi Locker, PFMS, etc.), Finance Module, Citizens Corner, Question Bank Module, Grievance Redressal Mechanism, Online Tracking of Beneficiaries via placements, Success Stories, Individual JSS Profile page, and Mobile Andriod App is in development phase and development of other modules as Events Calendar, Training and TOT calendar, Financial module, Entrepreneurship linkage is in full swing.

Advantage & Features of JSS portal

- **Training and capacity building of stakeholders** for change management on regular intervals
- **API Integrations** with Skill India Portal, NCS Portal, Digi Locker, PFMS, NITI-Darpan Portal etc.
- **System Effectiveness**
 - **Monitoring & Tracking** through Online MIS Reports for enabling environment and policy development support
 - **Duplicity check and validation** of enrolled and trained candidates
 - **Real time information** on ongoing/completed training across the nation
 - **TOT Modules** for trainers
- The Citizen Grievance Redressal system, provides a platform for citizens to voice their concerns and track it to completion
- Transparency in online procurement – empanelment of NGOs

Compliance with NITI Aayog directions to integrate Darpan IDs for the transparent and paperless grant disbursement and management

Result Indicators

Services

Name of e-Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19 (till date)
Training Center Enrollment	Training Center used to impart skill training are enrolled on the portal	(Scheme was transferred to MSDE in July 2018)	(Scheme was transferred to MSDE in July 2018)	8,902
Trainer on boarding and added to pool of available trainers	Creating a master pool of trainers to build capacity to implement non-academic, empowerment activities			7,527
JSS Annual Action Plan Reviewing & Approval	Action Plans are proposals submitted by the individual JSS to approve/ alter training targets based on recommendations			228

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	from MSDE. The approval of Action Plans is done by the Directorate of Jan Shikshan Sansthan (implementation arm of MSDE) through the JSS portal.			
Beneficiary Skill Training Lifecycle Management	Capturing of beneficiary data through their lifecycle is a critical factor for effective scheme management. All parameters of the lifecycle such as enrollment, training, assessment, certification and placement is tracked through the portal. The data captured can be drilled down to district level.			1,67,283-Enrolled 1,67,225-Trained
Beneficiary Assessment & Certification	The portal provides features for beneficiary assessment, related data to be captured using relevant evidence such as geo tagged, time tagged images. Upon successful assessment, the beneficiary certificate is generated through a central repository. These certificates are used by the beneficiaries to access livelihood creation activities for ex; applying for job openings, applying for bank loans which adds weight age.			1,56,203-Assessed 1,52,724-Certified

Implementation Coverage

S.No.	Module	Completed	In-Process
1	Admin portal development	√	
2	Evidence Based Assessment	√	
3	Reassessment flow	√	
4	Certification	√	
5	Web-services		√
6	Finance Module		√
7	Integration with DBT, PFMS module and Digilocker		√
8	Citizen View Report		√
9	Question Bank Module		√
10	Success Stories		√
11	Revamp the design of Home Page to incorporate JSS Branding Guidelines		√
12	JSS Profile Page		√
13	Online tracking of JSS beneficiaries		√
14	Livelihood Cell		√

Improvements/enhancements specifically rolled out during the last one year

1. Evidence based Assessment & Certification
2. Finance Module

Improvements/ enhancements which are planned to be rolled out during next one year

Predictive Analytics for Jan Shikshan Sansthan Scheme via JSS Portal

To report, Analyse and Monitor Events throughout the lifecycle of various actors taking part in the JSS Scheme. Actors include Ministry, Directorate, Individual JSS or NGOs and Beneficiaries.

- 1. Finance Management:** Optimize financial aid provided by the Government of India to individual JSS. The future is predicted based on the current financial situation of the institute and analysing patterns from historical data. This also helps in detecting and preventing any potential fraudulent claims that may occur by analysing previous trends in expenditure.
- 2. Target Achievement:** Analysing current progress in enrolling and training beneficiaries into training programs, predict the probability of a JSS in achieving annual training targets.
- 3. Student mobilization/ Effective Management of Enrolment:** Analyse the factors that can affect the process of application with enhanced accuracy. An in-depth knowledge can permit educational institutions to modify their strategies of mobilization of beneficiaries and allot funds accordingly.
- 4. Institute/ JSS Performance:**
 - Predictive Analysis is used to identify factors that lead to the success and failure of academic results, achieving training targets against the annual action plan, improving beneficiary results.
 - Student, Trainer and Staff performance may be measured using attendance times, using the mobile application or AEBAS.
 - Predicting Beneficiary Drop Outs: Using data such as student background, demographics, social status, economic status to assess the dropout probability.
- 5. Data Sharing Pro-activeness:** Based on usage and patterns, the system would highlight individual JSS who are not proactively uploading data based on quarterly achievements. Triggers that may be used includes, batch start/ end date, assessment result uploading, financial expenses recording, etc.

Enablers

Process Re-engineering

Automation, standardization and simplification is followed under the different implementation Process in portal:

1. Training, Assessment and Certification: After the creation of batch on the portal and uploading the beneficiary details, Triggers are automatically generated for

the Assessment in a fixed time frame. The Certificates are also automatically generated and can be downloaded by the JSSs after successful completion of the training.

2. Annual Action Plan: The annual action plan is uploaded by the JSSs and same is approved by the directorate, The approval process is real time and involves the activity trail along with trigger mails for activities which ensures that the JSSs are informed about the Approval of AAP at each step and also about any requirements for amendments

Request for Grants: Through the Portal, triggers will be generated to the JSSs for Request for Grants in which the data and required documentation is done at the JSS level after which it generates Triggers to the higher levels for further actions. Which speeds up the whole process of Financial settlements and Grant release and ensures the process is paperless.

Technologies

- NITI-Darpan Authentication through API
- Beneficiary de-duplication
- Dashboard for monitoring will be deployed
- Predictive Analytics will be built in

Biometric attendance system will be deployed

People

- Workshop were conducted in Delhi to train on portal features
- Nationwide workshops will be organized to provide training on newer portal features

Leadership visits to JSS centres took place across the country to promote adoption of new guidelines and new scheme processes. This facilitated change management for the stakeholders.

Value Indicators

Learnings for Sharing

Digital Empowerment

The portal has the following digital empowerment features:

- Multilingual portal
- Gender neutral content, layouts, symbols, multimedia
- Training fees is provided by Govt. of India. Hence the beneficiary need not provide any type of fees

A gender neutral and social inclusive branding exercise was conducted to enable social media marketing and promote online presence.

Green Governance

1. Video conferencing facility for Directors/JSS. This would address energy for transportation purposes like long distance business trips for meetings with stock holders/experts.
2. The JSS location and images uploaded are geo tagged which prevents the ministry to have physical verification and monitoring of the activities performed.
3. Sending Reports (Financial Statements, Auditors Report, Directors Report and explanatory statements) through electronic mail instead of paper.
4. Website has been designed to enable easy access for documents/notices.
5. All the certificates and standard letters will be issued electronically under the digital signature of the Director, JSS in a downloadable format.
6. The ministry will approve funds under online STP (Straight Through Process) mode, which will reduce the documentation work and grant will be made online. The system is directly linked to PFMS.
7. There is no e- waste generated in the system, as no pen drive/CDs etc. are used for data transfer. Either it is through mail or FTP

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TEAMS-Academic
Department of School Education, Government of Chhattisgarh

Gaurav Dwivedi, Sunita Jain and A.K. Somasekhar

Project Overview

This project is a part of Unified Digital System for School Education named as 'TEAMS' (Total Education Assessment and Management System). So far, governments concentrated on constructing School Buildings, Toilets, Text Books, Uniforms, Mid -Day Meal, Scholarships, etc. It is a fact that the ultimate objective of School Education is to increase Learning Outcomes of the students to prepare for their future. Scope of this project is to create digital echo system for academic excellence in School Education. Objective of this project is to use digital technologies to help improve student learning outcome with individual attention through technology enabled personalized learning.

This project mainly includes

1. Teacher Training Management System (TTMS) – TTMS is an end to end solution for teacher training management to convert the current top down trainings to demand based trainings. This also includes online courses for teachers.
2. Data Analytics of Student wise Question wise (Question linked with Learning Outcome) achievement of individual students in periodic State Level Assessments (SLAs) to provide personalized learning.
3. Cricket as an Assessment Tool (CAAT) – CaAT allows students to take assessment on smart phones / laptops to play animated cricket. Based on the answers given by batting team and bowling team, the animated cricket being played on projector will change in favour of batting team or bowling team.
4. Koun Banega Champion (KBC) – KBC is a game similar to popular KBC in which student gets questions based on a Learning Outcome in the increasing level of difficulty. With the data captured through the system, we can identify the level of a student in each learning outcome.
5. Question Bank – One lakh multimedia multiple choice questions have been created, each question mapped to learning outcome and meta tagged appropriately.
6. Multimedia Text Books (MMTs) – MMTs are nothing but replica of the printed text books converted to multimedia with read along facility, animations, videos, etc. to improve learning experience of the students while going through the text book.

The project covers the whole state of Chhattisgarh with 48,000 schools and 1.8 lakh teachers.

Stakeholders

Key stake holders are 48 lakh students, 1.8 lakh teachers and SCERT.

- (i) Students are benefitted with MMTs, Question bank and gamification techniques used.
- (ii) Teachers are benefitted with TTMS, Data analytics reports on student's performance for individual attention
- (iii) SCERT is benefitted with data analytics to design teacher trainings and digital content for students.

Key Aspects

- (i) Technology is used in the academic area, with an objective of improving learning outcomes of government school students.
- (ii) Student wise learning outcome achievement data is captured, as and where it is generated and analyzed with an objective of data based decisions by the government and data based recommendations to the students. Individual attention of students is now possible with the help of technology.
- (iii) Gamification is first time introduced in government's education system by introducing 'Cricket As an Assessment Tool' and 'Koun Banega Champion'.
- (iv) Teacher Training Management System (TTMS) enabled trainings on demand rather than top down trainings.
- (v) Digital content has been provided in Chhattisgarhi and other tribal languages like Gondi, Halbi, etc. to reach the remotest students.

Result Indicators Services

Name of e -Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
State Level Assessment	28 lakh students from Class 1 to 8 have been assessed with base line assessment and their question wise marks have been captured.			28 lakh students, 1.2 crore papers, 34.5 crore question wise data.
Enrolment for teacher training	Teachers can enroll themselves or can be nominated for trainings			14930
Digital content delivery through Multimedia Text Books	9 th and 10 th class students have been provided with Mutli-media Text Books to improve their learning experience of going through a text book.			4000

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Cricket As an Assessment Tool	To gamify assessments CAAT has been designed.			2000
Koun Banega Champion	A game has been designed to find out the level of students learning against learning outcome.			10000

Implementation Coverage

The system has been rolled out throughout the state, as planned.

1. MMTs of Mathematics, Science and English of 9th and 10th class have been created against the target of all subjects of class 9 and 10.
2. CaAT could be rolled out only in the high schools where computer infrastructure is available.
3. TTMS has been implemented throughout the state and mandated for all trainings.

New Services / Enhancements

All the systems mentioned above have been rolled out in last one year and in the next year it is planned

- To capture formative, periodic and summative assessment achievement of students.
- To expand TTMS to cover more online courses than brick wall trainings.
- CaAT will be rolled out in all the 4300 high schools in the state.

MMTs shall be created for other subjects.

Enablers

Process Re-engineering

1. State Level Assessment (SLA) has been introduced for uniform assessment throughout the state where each question is mapped to a learning outcome and student wise question wise data has been captured for data analytics to take action for improving the learning outcome.
2. Gamification elements have been introduced in the design of App based assessment.
3. Teachers have been empowered with the availability of data analytics results of their students on their smart phones.
4. Competency framework has been designed to assess each student against their competencies.
5. Teacher professional development platform available in open source through DIKSHA team has been adopted to avoid duplication of development effort.
6. Main challenge faced is lack of connectivity in remotest areas, for which all the Apps have been designed to work offline.

Technologies

Data Analytics have been done by using Python and Power BI.

People

1. Shri. Gaurav Dwivedi, Principal Secretary, Department of School Education
2. Shri. S Prakash, DPI
3. Shri. P. Dayanand, Director, SCERT
4. Shri. D. K. Debnath, SIO, NIC
5. Shri. A. K. Somasekhar, Sr. Technical Director, NIC
6. Ms. Sunita Jain, Additional Director, SCERT
7. Ms I SandhDekeya Rani. Asst. Professor, SCERT
8. Mr. Santosh Kumar Tamboli, Lecturer, SCERT
9. Mr. Dekeshwar Prasad Verma, Head Master
10. Mr. DepankarBhoumik, Asst. professor, SCERT
11. Ms Charu, Director, KPMG
12. Ms. Shruti, Sr. Consultant, KPMG
13. Mr. Sathyaraj, Sr. Consultant, KPMG

Value Indicators

Learnings for Sharing

1. Now-a-days everyone has a computing device (Smart Phone) in their hands. The system should try to use them instead of procuring new devices.
2. It is always accurate and better way of data capturing at the place of its origin than at a different place.
3. Emerging technologies like data analytics help governments take data supported decisions than arbitrary decisions.
4. Gamification techniques will result in better adoption of systems.
5. Involvement of all stake holders from the beginning in the system development will improve the ownership and sustainability.

Digital Empowerment

Chhattisgarh is a tribal dominated state where a considerable percentage of people speak their own languages like Gondi, Halbi, etc., who are generally excluded from the benefits of digital technology. But, in this project, we have taken equal care to create content in those languages also.

All the application's user interface is in Hindi, which most of the stake holders understand.

Green Governance

For conducting an assessment for 30 lakh students in about 6 subjects with an average of 3 pages in a paper format, 5.4 crore papers have to be printed. Department has decided to send those papers for formative and periodic assessments, only through soft copy. Only summative assessment papers shall be printed. This one decision saves about 20 crore papers equal to 1000 tonnes of Co₂emissions.

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Integrated ShalaDarpan

Rajasthan Council of School Education, Government of Rajasthan

Abhishek Bhagotia and Vinod Kumar Jain

Project Overview

Initial variant of Shala Darpan, launched in February 2016, to capture and regularly update information pertaining to schools, teachers/Staff and students information of all Govt. Secondary Schools of Rajasthan. The services offered by Shala Darpan Portal are primarily G2C, G2G for the benefit of all Government schools of Rajasthan & the Department, enabling them to upload data and view the requisite reports as and when required.

Before 2016, the School Education Department was plagued with the following challenges -

- Insufficient data - even for basic student/staff/school details
- Time-taking and complicated data collection processes, which were largely offline
- Lack of a central database, leading to redundancy in data collection efforts
- Most importantly, limited ability to measure and monitor progress on ground and take effective decisions

To tackle all of these issues, Integrated ShalaDarpan was brought into being with primary focus on -

- Accessibility: To serve as a real-time, online and accurate MIS for student, school and staff data
- De-duplication: Reducing duplication and saving time in compiling huge statistical reports, which are required by the department from time to time
- Monitoring & data-driven decision planning: Measurement of performance across levels - School (infra, academics, staffing), Districts (scheme implementation, academics, governance), State (scheme effectiveness, resource allocation, communication)
- Communication: Sharp and swift two-way communication across the state education machinery

Integrated ShalaDarpan captures the complete information relevant to -

- Students - Admission/Transfer, Profile, Attendance, Academic Performance, TC etc.
- Staff - Selection & Posting, Profile with Employment history, Transfer, Joining/Reliving, Performance, Training etc.
- Schools -Opening/Closing/Merging of Schools, Profile, Infrastructure & Facilities, SMC/SMDC details. PTM Monitoring, School Wise Sanction Post/Staffing Pattern

based on enrolment, School inspection, ICT/Vocational education, Remedial classes, Girls Hostels, Program/Schemes Implementation etc.

This centralized transparent data visibility allows the department to keep an eye on critical challenges like the PTR (Pupil Teacher Ratio), Absenteeism, Vacant positions, rationalization of staff, Low enrolment, In-adequate infrastructure facilities, Budget requirements etc. School, district and state staff have a higher accountability of their jobs because it is extremely simple to figure out the bottleneck for any implementation. For example, if a school does not have a playground - the land allocation process, the application status, fund deployment etc. can be completely tracked on Shala Darpan.

The belief in the system and its effectiveness can be gauged from the fact that staff joining/relieving processes have been made mandatory through Shala Darpan, which became possible to show actual school/post/subject wise vacancy in public domain. Today, Shala Darpan staff vacancies report is being used for promotion and transfer of teaching staff as well. Similarly, a student's Transfer Certificate (TC) or Staff Reliving/Joining is valid, only if the same is generated using Shala Darpan Portal.

In short, Shala Darpan has now become a unique, centralized tool engrained in the Department's DNA which is driving Rajasthan towards the Digital Age. It has the following specific features -

- One stop solution for all required information
- Source of monitoring reports to measure work in progress
- Transaction data stored (usage, login etc.)
- Bilingual, workflow base user friendly system
- Modular Implementation (Agile) Approach
- In-House development and expansion leading of cost-effectiveness
- In-house preparation of online know how & user manual

Stakeholders

Following are main stakeholders of the project, right from CMO to the grass root i.e. Gram Panchayat level-

- CMO - Ministry level users
- School Education Department, GoR- Secretariat/Ministry level Users
- Directorate of School Education - Officers of Directorate and DD Office
- Rajasthan Council of Secondary/Elementary Education - RMSA/SSA Project officers of State/District /Block Level
- District Education Office- DEO and other officers of district level
- Block Elementary Education Office- BEEO
- Schools - Principals, PEEO
- School teaching and non-teaching Staff
- Students

In addition to the modules/reports relating to school operations, student academics, staffing, governance and accountability systems, some of the special Initiatives on ShalaDarpan are -

- School and State/District office Dash Board
- District Ranking and Star Rating based on Result info and Infrastructure/facilities availability in Schools
- SIQE (1-5) Result data capturing
- Result Processing (6-10)
- DIET-5th Board - Apply to Result
- Satrank Calculation for 8th, 10th and 12th Board
- 8th, 10th and 12th Board Result integration
- School Allotment for B.Ed/BSTC Internship
- Free Text Book Distribution Monitoring
- Online Pre-Metric Scholarship
- School Wise Staffing Pattern/Sanction Post
- School/Subject wise Vacancy and Staff Rationalization
- Counselling for Posting in Schools
- SMC/SDMC info capturing and Monitoring
- School Alumni Page
- Student Studying Certificate
- Budget Demand from Schools and Approval from FA
- OOSC & Transport Voucher Distribution
- School-Anganwadi Integration
- SIQE Cortication for Schools
- Schemes implementation and Monitoring
- School Visit with Ticket Generation and Monitoring
- Email/SMS from Officers Login to Group of/All Schools with Moderator facility
- Model Schools Website (Auto generated from SD)
- Feedback from Schools
- Help Centre Support module
- School's detail - Infrastructure and Facilities
- Department wise Office Users with Staff Sanction Post
- SJE-Paalanhaar/Labor Department, In-School Certification

Currently, ShalaDarpan is undergoing constant expansion to capture wider and more granular information while bringing-in systems and processes to ensure that the

captured data is validated from time to time and the master datasets are clean from any material error.

Key Aspects

- Widely appreciated as the "Model School MIS", Integrated ShalaDarpan has various info of 85+ lakh students and 4.15+ lakh staff across 65+ thousand govt. schools in Rajasthan which is designed keeping in mind of Govt. day to day requirement for Planning and Decision Support.
- It is a Workflow base system which captures, validates and tracks students, staff and School information in an unique way and enables timely communication, data-driven decision making and streamlined processes within the education department.
- Each staff details are captured against Sanctioned Post only. Apart from schools, system is also capturing, Education department's staff deputed in various offices for the exercise of DPC, seniority etc.
- It covers all management (Elementary, Secondary, Sanskrit, SJE, TADA, etc.) Governments schools, with separate role base state/district level view. Principal Secretary may view all management schools details.
- Integrated ShalaDarpan has become the backbone for the critical processes and decisions of School Education department from school operations (admissions, promotions, results), teacher staffing (recruitment, posting, relieving), fund flow planning to implementation and monitoring of various schemes (Scholarship, Free Books Distribution, Availability of Transport Vouchers, Laptop/Cycle distribution, Balsabha, Mukhyamantri Hamari Betiyan Yojna) etc.
- Apart from capturing of test/exam wise result data, system process result, generates Green sheets and provide schools/class wise merit list/Mark sheet. Result linked with teachers performance too.
- The Agile development approach and implementation methodology, along with its ability to validate nearly 100% data, makes it stand out as a reliable tool for School Education Department as well as the State Assembly.
- Established as feeder system for Board Exams Forms feeding, Infrastructure/Facility Gaps for GyanSankalp Portal, Student's Studying Certifications for SJE Paalanhari & Labour Department, Citizen Centric Info for Jan Suchnaa Portal etc.
- "Integrated ShalaDarpan" is widely appreciated by various states as well as the Secretary MHRD, Govt. of India - because of its ability to largely eradicate offline data processes, redundancy in data collection efforts and effective usage, in regular monitoring, planning & decision support requirement at Govt. End.

Result Indicators Services

Name of e- Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2017-18	2018-19	2019-20
Students- Admission	Automated new admissions against TC, for transaction maintenance and uniqueness	2206210	2086311	1371709*
TC/NSO	Mandatory issuance of Transfer Certificate for transaction maintenance	1952914	2323154	821793*
Staff Joining	Mandatory New/after reliving joining for maintenance Service History	49947	62520	46978*
Staff Reliving		41103	103709	43424*
Paalan Haar Web Service		Not Started	721130	721050*
Cycle Distribution		319444	346185	354706*
Laptop Distribution		20184	11345	0*
Transport Voucher		86549	89501	93547*
Humari Beti Yojana		99	99	99
School Allotment		178921	219027	74284*
Scholarship (10+ types)		1002196	1112342	456699*
Auto-Fill of Board Exam		1685636	1681820	1792285
Exam Result (6-10)		2436298	3188379	0*
5th Board		Not Started	Not Started	1404254
SIQE Certification		5748	9951	0*
Budget Demand		126028	261755	135725*
Teacher Award		Not Started	Not Started	5646
Transfer Application		Not Started	Not Started	37818*

Implementation Coverage

The development and implementation was carried out not in a pilot fashion, but in a phasewise approach, wherein first all critical activities related to students, staff and schools were built, post which reports were designed and released for driving data-driven decisions. From the very beginning, the system has encompassed all secondary government schools of Rajasthan. With time, as and when the need to expand arose, all other schools - elementary schools, Sanskrit, SJE, Tribal Managements etc. were brought on board.

Using Agile methodology modules were launched from low volume to high volume in nature with 100% coverage/data capturing approach. As this system has 100% data passed through validation process, useful at all levels of administration, decision and planning. No report is accepted manually at higher level, of which data/info is available on ShalaDarpan.

Main/primary data is captured at School Levels and it is consumed by accessing various drilled down reports, from Block to State level.

New modules are being developed and launched on regular basis on ShalaDarpan as per field requirement or decision by the higher authorities. As per normal practice Quarterly target has been planned and monitored its progress under PACT chaired by the Additional State Project Director.

New Services / Enhancements

- Using live data availability of enrollment, school infra and Staff posted, number of drilled down reports provided, which are being used for day to day Monitoring, Administrative Processes, Planning and decision support. Repetitive info taken from Schools/districts, -from different corners and duplicate outcome reports are stopped. Anytime, anywhere access to reports and information
- Improvement in quality of Education at Primary and Upper Primary level, as they have been merged with nearby Secondary and Senior Secondary Schools. Now they have access to facilities such as libraries/ computers etc.
- Saving time and money in form of paper printing and postage, as Circular/ Order made available in Public domain and directly in Schools/ Office User login
- Increase in Enrolment, as day to day monitoring was made during enrolment drive
- Improvement in infrastructure facilities such as electricity connection, drinking water facility and Internet connections due to regular follow up
- Subject- wise >1 Lakh Teachers were promoted and posted through counseling

Following are other important usage of ShaalaDarpan by the Govt., which were highlighted at Nation Level..

- Staff info against the Sanction Post
- Staff Posting through Counselling Process by using of live Vacancy
- School Merge / De-merge based on Enrolment counts and other parameters
- Staff Rationalization - Teachers is available in the schools against the sanction only Post/Subject
- Online Result Processing Module along with Green Sheet for Class 1 to 10
- Availability of 100% School Staff details (about 100 Columns) with service history and Photographs
- Online Schemes (RMSA/Govt.) Monitoring with live data usage
- Single Source of Communication Channel from State/District to Schools

- Online Internship Module for School Allotment, huge saving in Transportation by the citizen and live data availability for smooth monitoring
- Huge saving in Transportation (in tour process for Result preparation/Approval, Budget demand etc.), Printing expenditure (All circulars/order directly in Schools/Officers login)
- Online mechanism for teacher transfer application
- Online & transparent mechanism to apply for teacher award
- Free text book monitoring system for management of book flow from depots to schools.
- Staff window and citizen window for G2E and G2C compliance

Major requirement envisaged (for coming year) are as under-

- Result for Class XI & XII and Modal Schools
- GIS Mapping and UDISE through ShaalaDarpan
- Development of Mobile App for School User
- User Role for Teachers/Staff of the School
- Tracking of Uniform Distribution - To provide uniform to all girls, SC, ST, BPL children.
- Monitoring for Students Curricular activities
- Monitoring mechanism for student wise data on School Progression and Outcomes
- Attendance Tracking for Staff and Students
- Integrated Training management
- Assured Career Progression (ACP) for School Staff
- Online Seniority List for Staff of School Education department

Enablers

Process Reengineering

Major innovations were adopted as part of process reengineering in module designing in following three entities:

1. Students
 - Maintain transaction data (from admission to exit)
 - Online Students Transfer (TC) and Exit (NSO)
 - Result Preparation
 - Auto fill Board Exam Form
 - Auto data porting for beneficiary schemes
2. Staff
 - Automated Staffing pattern

- Online Joining and Relieving
- Maintain service history
- Fund Demand and disbursement
- Staff selection & Counseling Process for Posting in Schools
- Teacher award application on portal
- Online teacher transfer

3. School

- Direct message to HoS through Web, Email and SMS
- Infra Data Capturing and Gap analysis for requirements in schools
- School Allotment for Internship
- Fund management through SMC/SDMC
- Online 80G & SIQE certification
- Result analysis under School login

Technologies

Application is developed using .Net 4.0 & MS SQL Server 2016 technology with three tier architecture. This bilingual, workflow based Web-Application uses responsive design using bootstrap 4, enabling it to be easily accessible through PC/Laptop/ Tablet/Mobile devices. NIC SMS services and e-Mail services have been integrated, thus making it possible to send Bulk SMS and emails to Parents/Schools/offices whenever required, using application pages and special module developed for it.

Dashboards at various levels like Schools, office logins have been provided to visualize day to day activities which are rapidly required by the user.

Social media like Face-Book Page and WhatsApp groups on Shala Darpan has become a medium of information exchange.

People

State Govt. is very keen to implement this system. Even they have introduced many new ideas from time to time. Initially to spread awareness on this system, extensive training programs up to Block/GP level were arranged using Video Conferencing facilities/ Satellite Classes and issue communicate directly through circulars/ Order/ Messages in user login.

All teachers were given computer training. As Portal is mobile/tablet friendly, they access the portal, where available.

Field is also updated through social media like Face-Book Page and WhatsApp groups.

Value Indicators

Learnings for Sharing

Need for a think cell to prioritize what needs to be developed: Here, PACT (Process and Application Certification Team) involved initiative leaders from the department, NIC (design+development team) and ShalaDarpan Cell (coordination) to come together in a monthly sitting to have a meaningful dialogue over the system's most critical priorities.

- Clear design linked execution approach enabled that what was expected on the screen was visualized and laid out on paper, brainstormed and duly approved before it reached the implementation pipeline
- Initial top-down push from the Department leadership to drive adoption and fill-rates, beyond which it became a self-fuelled engine driven by the field officers and school principals
- Frequent and structured communication systems set up to drive immediate issue resolution
- Feedback mechanism put in place in order to ensure that data collection never became burdensome for the field officers
- Inclusion of district and block view for most reports in order to drive accountability down to the grass root

Modular approach for development, Frequent module launches (within couple of weeks to a couple of months)

- Changes were welcomed even during late stages of development
- End users and developers work together, Daily meetings and interactions to ensure smooth progress
- Communicate often – frequent interactions with a preference for face-to-face meetings for issue resolutions

Digital Empowerment

Shala Darpan Portal is an integrated bilingual web based system, Hindi and English are adopted as primary languages. As Rajasthan is a backward state and major region belongs to rural Portion, the portal is designed in Hindi as default language and English as secondary language. Timely messages and help are provided in Hindi, SMS when needed are sent in Unicode Hindi also.

Citizen window is provided on Shala Darpan as G2C digital interactions which facilitates the citizen through School search, scheme search and other reports.

Staff window is acting as a bridge between Govt. and teachers for interaction like applying for teacher award, transfer application etc.

Green Governance

- Emails through NIC Email relay services are now being sent to schools from Shala Darpan Portal to counterpart the hardcopy letters that were originally sent.
- Orders, circular& tenders are now being uploaded on portal which where earlier circulated in hard copies.
- Green sheets and results are now online saving lots of papers.
- Data directly pushed for Scholarship & other beneficiary schemes, thereby saving papers.
- Board data directly pushed on board server through Shala Darpan web services.

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TSEP (Telangana State Online Employment Services)

Department of Employment and Training, Government of Telangana

K Y Naik

Project Overview

Context for Developing the Portal

All Employment services viz., Registrations, Renewals, Updations, Transfer of Registrations, Addition of Qualifications, Sponsoring, Employer Market Information and submission of returns were in offline. Jobseekers, Employers and Department faced lot of hardships, inconvenience, loss of wage day, postage, physical strain and delay in delivering the employment services to its stakeholders.

Objectives

To mitigate the hardships faced by the stakeholders and for easy access between stakeholders and employment department for responsive transparent, speedy and an efficient pan India services in order to meet skill needs and placements of a dynamic society.

Stakeholders

- Job Seekers
- Students
- Employers
- Training Partners
- Counsellors
- Employment Department.
- Other Government Departments.

Intended Benefits

- Easy and quick access to the online Employment services Via Home/Meeseva/Net centers at their door step. Effective, Speedy and transparent services to the candidate. Economical and Time Saving to the unemployed youth
- The online portal will be interlinked with the National Career service portal which will enable to have pan India access to all the employment services for all the stakeholders in the state.
- SMS alerts about Employment Card, Employers Returns, JobMelas and Sponsoring details.
- Employers submission of Returns and posting of vacancy notifications

Announcements about various programmes, Notifications and departmental updates in web portal.

Key Aspects

Employment Services are vital for addressing the current unemployment needs of the society, to use the manpower effectively in order to reap the benefits of the demographic dividend. Employment Department with support of ITEC department embarked in developing a new application to have all employment services in one common platform and act as a bridge between the employer and jobseeker.

Employment Related services are developed based on the parliamentary Act i.e. EECNV ACT 1959 which is being followed across the nation. The existing solution (www.employment.telangana.gov.in) can be used as one stop shop for all States employment online services with minimal changes and has additional feature of interlinking with National Career Service portal of Gol(www.ncs.gov.in). The built in solution developed in .NET and SQL Server and provides mobile compatibility.

➤ National Employment Service manuals (Volumes 1 to IV).

COMPULSORY NOTIFICATION OF VACANCIES (CNV) Act, 1959 and Rules 1960.

Result Indicators Services

Name of e- Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Online Registration	Number of candidates registered online	NA	63,232	1,57,279
Online Renewals	Number of Candidates renewals online	NA	39,702	23,690
Online Updations	Number of Candidates updated the card and added new qualifications	NA	13,794	19,747
Restorations of OldCards	Candidates whose old cards are expired and restored based on G.O.	NA	11,687	0
Employer Registrations & Returns	New Employer Registration and Filing ER Returns	NA	NA	4,173
Sponsorships	Employer giving sponsorship requisitions for sponsoring the candidates	NA	NA	9,742

Implementation Coverage

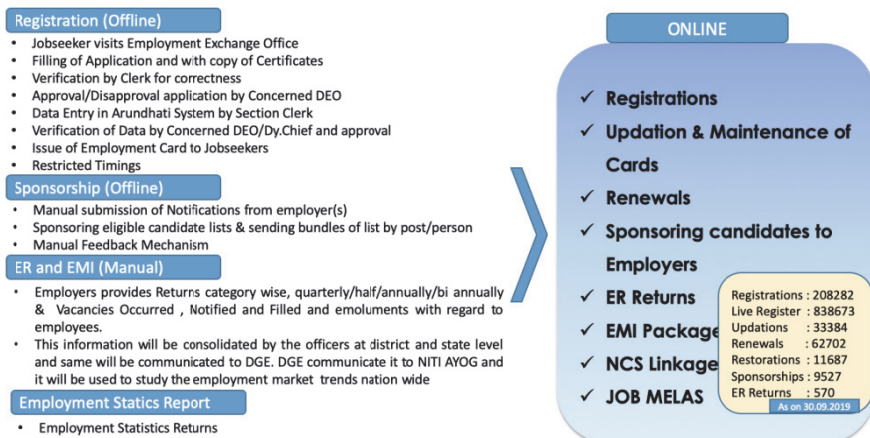
- Studied the COBOL System and understood the requirements.
- Feasibility of data conversion into new data base by the technical team.
- Departmental Review Meetings and suggestions implemented.

- One month pilot project with each module for both the phases (Phase I and Phase II) viz., registration, sponsoring and EMI .
- Go Live

New Services / Enhancements

There are 100+ issues which opened up in last one year and all of them were rectified and made the employment application stable.

The Functional Requirements / Enhancements are rolled out during last one year:



The Enhancements which are planned for next year:

1. Mobile Application Development

Linking with Other Government Department websites.

Enablers

Process Re-engineering

Earlier, The Employment services were carried out through offline in standalone application i.e. Arundathi package which was developed by APTS in COBOL language in which the candidates have to attend to the office from nook and corner of the state facing many hardships by spending their valuable money and time. Even Employers were also facing inconvenience in submitting notifications in person/post and handling bundles of hard copies of sponsored candidates with lot of postage and informing the placement details.

As part of the Digitalization process, the Department of Employment & Training has developed Web portal for online Employment services.

- Arundhati was built in COBOL language in 1990 and there is no centralized database. The data is extracted to the flat files. The data extraction was a herculean task.

- *All flat files data are being read into different tables which are mapped with new data structures of online portal. The mapper was written to smooth transfer of data.*
- The data which was stored was based on 10 nodal districts. The data division into 31 districts and later 33 districts.
 - *DET and Vendor did due diligence of all existing/updated/added mandals into newly formed districts.*
- Architectural/Data structure difference between the Telangana Online portal and NCS portal.
 - *The API was written for data mapping and coordination with DGE technical team for validation and verification. The state portal data was successfully transferred to NCS portal.*
- Introduction of ITDA sub exchanges into Employment Portal.
 - *ITDA agencies have got separate sub employment exchanges for ST candidates apart from district employment exchanges as per G.O. 308 and these exchanges are operated manually according to EECNV Act. All 3 ITDAs are brought under employment online portal with the consent of ITDAs.*

People

State Level Training Program conducted. Employment Department provided user manual in ppt mode & YouTube video for e-Learning on the below activities:

1. How to register candidates
2. How to approve the cards for District Officer & Clerks.
3. How to Renewal & Add Qualification

For Employer's:

1. How to Register
2. How to Notify Vacancies and get the placement details online
3. How to complete Returns Submission.
4. How to submit feedback online.

Digital Empowerment

- After Go-Live, the portal was made available for all the stakeholders. However, there was a section of people who are computer illiterates found it difficult to access them for online services. Employment Department decided to open employment services with Meeseva offices & net centers to bridge the gap.
- There was a drastic change in the productivity levels for departmental staff. Whenever any new application comes to employment exchange it used to take a minimum of 7 working days to dispose it. With online services, the disposal is happening in 24hrs for each case.
- Employers used to visit the offices for enrolment, sponsoring and employer return submission(s). Whenever there is a delay in submission, The Employment Exchange used to send the reminders through registered post. With online services, Employers are able to complete their work online and if they miss any

Return submission(s), Automated Reminders are sent through SMS/Mail thereby ensuring compliance.

- Earlier there was no mechanism to capture the Jobmela which was one of the core activities of the department. With online, Complete Jobmela information is being feed online by each exchange and directorate can monitor the progress of Jobmela online.

Green Governance

Job Seeker

- On an average, Every Jobseeker will visit the Employment Exchange at least once in a year spending @ Rs.200 for travel and loosing daily wage @ Rs.300 aggregating to Rs.500 per visit.
- With over Registered Jobseekers of 8,38,968 an average Total savings of the department is 41.94Cr per Year

# Jobseekers (Registered)	# Expenditure	# Total Savings @ Year
8,38,968	500	41,94,84,000 (Appx 41.9 Cr)

Department

- The Department incurs on an average @ Rs.50 towards Application forms, printing employment cards in dot matrix, Postage and other incidental expenditure per candidate.
- With over Registered Jobseekers of 8,38,968 an average Total savings of the department is 4.19Cr per Year
- Department is providing employment services viz... Registrations, Renewals, Updations, Sponsoring, Online return submissions at free of cost to all Registrants.
- The Department persuaded MeeSeva to collect a nominal service charge of Rs.20 per candidate for all services by foregoing departmental revenue share.

# Jobseekers (Registered)	# Expenditure	# Total Savings @ Year
8,38,968	50	4,19,48,400 (Appx 4.19 Cr)

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Recruitment Processing Application

Meghalaya Public Service Commission

Gulrez Sohliya, Timothy Dkhar and V. R. Syiem

Project Overview

An end to end generic application that caters to the requirements of PSCs, Government

Recruitment Agencies, Semi Government Establishments having various modules such as

- Candidate's portal, a robust back end application that caters to auto and manual scrutiny of applications, venue allocation, download of intimation letters, various reports, and annual reports.

The application though initially intended for use at Meghalaya Public Service Commission, is now implemented at various sites such as Sikkim Public Service Commission, 5 District Selection Committees, Meghalaya Administrative Institute, Meghalaya High Court.

Till date, there are 150046 registered candidates, and 561 various posts advertised have been processed using this application against a total of 342098 applicants.

Key Aspects

A generic end to end application that caters to the recruitment process of the Public Service Commission, District Selection Committees and any other government/semi-government entity, from online submission of application forms, to declaration of results, implemented at ZERO cost.

Result Indicators

Description of various e-Services, benefits and their Volumes				
Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
No of Post advertised.		142	144	42
No of applications received.		100572	127320	55605

Implementation Coverage

Implemented in the state of Sikkim (Sikkim Public Service Commission, District Selection Committees of six districts, Meghalaya Administrative Institute, Meghalaya High Court)

Process Reengineering

- BPR was taken up to a huge extent wherein the input forms were re-designed, and the outputs such as Admission Card, Intimation Letters were also re-designed and standardized.
- Various redundant processes were also eliminated or merged together to ensure that the entire process of receiving of applications, scrutiny, filing of representations, and conduct of exams/interview were streamlined and standardized.
- Input forms were simplified to a great extent and all the parameters that existed previously, and found to be unnecessary were removed.
- The process of publishing a Provisional Rejection List of candidates, and allowing them to file representations, if rejected, was introduced after observing that the same was practiced in Andhra Pradesh PSC, and it was well accepted by the candidates

Technologies

The application is designed to ease and speed up the processing of examination process and also to enable applicants to apply and gather information relating to the examination process of the MPSC. It was integrated with the Meghalaya E-payment (formerly called e-GRAS) that enables the candidate to pay the fees online. Provisions have been made in the software to allow the candidate to track the status of his/her application online. Mobile app has been designed disburse information about the vacant post as soon it is advertised by the Commission. The mobile app has ensured that information is made available to the candidate in a very short time, which in turn has increased the communications between candidates and the Commission.

People

The staff of the MPSC, DSCs were trained in the use of the application, and to also answer queries to the candidates from time to time. Since the application has been standardized for use across multiple offices, any request for change from any office has to come through a proper format, and the request is to be examined thoroughly before accepting.

Learnings for Sharing

- Any office can implement the application at absolutely zero cost, and within a short time, as short as 20 minutes.
- During the course of implementation of the earlier version of this application, it was observed that some offices, particularly, the District Selection Committees, do not have sufficient funds, hence it was imperative that a single application be

designed for all offices, so that they can get on board, without any hardware requirements (servers etc).

- As the application is already integrated with eGRAS or Meghalaya ePayment Gateway, there is also no cost involved for implementation of online payments.

Digital Empowerment

The Online application captures all the details of the candidates – one time- so that for future advertisements, the same candidate need not enter his demographic data but can just select the post advertised and proceed with the submission of the online form after making the requisite payment. The application is Unicode compliance and hence can be made multi-lingual to cater to the various demographic and cultural languages across the country. Being a web based application; candidates can register and apply for any post advertised by the Commission from anywhere in the country and abroad. Mobile app has been designed to empower the candidate digitally. The apps disburse information about the vacant post as soon it is advertised by the Commission. The mobile app has ensured that information is disbursed with in a very short time, which in turn has increased the communications between candidates and the Commission.

Green Governance

With the implementation of this application, there is a drastic reduction in the use of paper. It is estimated that at least 95% of the paper usage has been reduced.

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MANAS-NTPC HR Request Transfer Portal

Government of India

Akhil Raizada and Saurabh Banaudha

Project Overview

To reach out to the employees in an efficient way catering to the personal needs in way that complements the organizational requirements and also shaping our business decision through trends and analysis.

Scope

The system caters to the complete NTPC employee (executive) set distributed and located in various offices/projects in India and abroad in different capacities.

Stakeholders

The stakeholders are the employees, management, external references and employee families at large.

Benefits: System has helped a lot in establishing a network of transparent trust and structured system for request transfer. It not only enhances the decision inputs of an applicant but also that of the management at large. The rich trends and data analysis helps to shape the procedures and policies and measure their effectiveness.

Current status: Running successfully throughout and as intended since Dec'16. It has successfully seen six bi-annual cycles of orders and stands institutionalized now being the only reference point for all request transfer needs.

Key Aspects

The issue of manpower analysis and movement catering to the both i.e. organizational and personal needs is a critical issue for any organization. So was the case in NTPC. It was envisioned to have a transparent system which should cater to the following: -

- Applicant to have access to an insightful rich data to take decision before applying. This includes inputs like no of IN and OUT requests already made for the same set, organizational requirement etc. thereby being able to calculate his probability of being considered and being no more in black box.
- Standardized and structured application system having features of auto escalation, alerts and interactions
- Enhanced transparency in the form of open comments window and dynamic status update of his/her waiting number

- Rich interaction in the form of direct interactions
- Quick delivery as all requests are analyzed, studied and orders issued only twice a year
- Rich analytical reports
- Integration with other systems and processes like promotion/placement interviews
- Availability on internet

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Manpower position	Sanctioned-Positioned data	Real time as a matrix for location and grade	Real time as a matrix for location and grade	Real time as a matrix for location and grade
Request transfer	Applicant page	300 Hits>6000 User base:60%	1450 Hits>8500 User base:85%	1900 Hits>11000 User base:100%
Data analysis	Trends/ graphs	Real time Reports around 5	Real time Reports around 20	Real time Reports around 35
Alerts	SMS/Mails/Escalations/Processing	Around 800	Around 2820	Around 5400

Implementation Coverage

All targets envisioned and planned at the time of launch achieved successfully. The planned coverage of locations and employee base has been met 100%. System is now fully accepted both by internal as well as external and institutionalized

New Services / Enhancements

- Rich analytical reports introduced with feature of due diligence for direct interaction
- Additional data inputs provided in the data set
- Introducing pre-analyzed reports and trends using AI
- Revision of pre-defined options based on data analysed over years

Enablers

Process Reengineering

- Standardization of the process of request transfer through corporate circular
- Simplification of the process replacing all manual process involved earlier
- Add-on of additional inputs as a data point
- Design and development of the integrated system
- Inclusion of well-known terms like 'Waiting No.' and 'Due diligence' as a part of procedure

Technologies

- Internal communication mobile app SAMVAAD decided to be used for circulation and correspondence
- Social media platforms of the company updated with the development and design changes
- Circulation of attractive information leaflets (animated as well graphics)

People

- Promotion at all levels – project/ regional offices and the corporate center
- Standard communication to all employees keeping them updated
- Identified potential areas for handling issues at local level developed and deployed in the form of due diligence

Value Indicators

Learnings for Sharing

- Standardization of a critical process like transfer and placement
- Change management w.r.t. process, model and system and associated automation
- Data analysis of trends and reports thereby leading to the business decisions supported by the facts and figures and not mere experience and paper

Digital Empowerment

- Single integrated automated platform made available to employees 24x7 anywhere anytime
- Rich information set provided to employees to take an enriched decision regarding his/ her application and calculate his probability of being considered
- Deep dive into the data, trends and forecasted models helping business decision
- Rich repository of expectations & decision history etc.
- A lot of man-hour and resources like time saved and available for use in other productive tasks

Green Governance

- Paper process completely replaced by the new system
- Provision to attach or modify attachments with any application replacing the conventional approach
- Conventional correspondences in the form of letter/phone replaced by e-updates

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Leveraging TSGENCO Business Process using SAP- FLM (e-Office) and Analytics (Dashboards)

Telangana State Power Generation Corporation Limited, Hyderabad

Akkala Ramesh and Lalit Mohan Joshi

Project Overview

Brief overview on Implementation of ERP Project TSSHAKTHI in TSGENCO.

The ERP initiative in TSGENCO has been christened as “**TSSHAKTHI**” (**TSGENCO System to Harness Ample Knowledge Transformation for Harmony and Integration**) as it promises to lead into a new era of information management in the organization. TSGENCO identified M/s SAP India Pvt., Ltd, to supply and implement the solution across all its locations. Accordingly, the agreements (EULA and PSA) were signed between TSGENCO and SAP and procured 2000 Licenses, between 2012 and 2015. The core team with the support of SAP consulting team worked and deployed the solution as a temporary approach to meet the immediate requirement of two independent entities operating on single instance (single landscape), bifurcation of the existing Operations of composite APGENCO (One legal entity) into profit centre groups one for residual APGENCO and other for newly formed TSGENCO to ensure business continuity with effect from **2nd June 2014**. Since the business operations were different among two corporations, the common Landscape utilised by both the organisations has thrown multiple challenges to meet the requirements of independent business rules of two corporations. A new landscape was established in TSGENCO and **Go-Live** happened on the existing hardware on **13.09.2015**. The Project Team under post production support availed services from SAP, worked for renaming the Systems and System IDs, including the domain name changes from APGENCO to TSGENCO, only Profit Centres relevant to TSGENCO were enabled for utilisation by the users of TSGENCO.

Scope

Implementation of e-Office using SAP FLM Module

– Objectives and scope of project

TSGENCO under Phase-I has implemented SAP ERP System across TSGENCO plants and Head Quarters and most of the day-to-day Business transactions are being carried out effectively using ERP System since 2013. However, the Note files and other correspondence internal and external initiated and routed through concerned were maintained in manual mode. This lead to considerable time in making changes to the documents and retrieval of the particular subject file. It had also become difficult to trace the file and fix up the accountability. The confidentiality was also at risk with this manual process of File handling. Further the integration of SAP ERP System was also not available leading to redundancy and duplication of works at

Plants and Head Quarters. In view of the above and as a part of continuous development to manage the processes related files in a digitized manner, SAP FLM solution was designed, developed and implemented under Phase-II ERP, with seamless integration with existing SAP ECC System.

To automate the processes related to creation of files and maintenance of Inward and Outward correspondences, FLM implementation commenced with the Project Kick off held on 30.08.2017. In line with TSGENCO's vision to adopt smart solutions, TSGENCO has implemented e-office solution using SAP FLM Module (File Lifecycle Management) with the implementation support from SAP across TSGENCO Plants and its Head Quarters under Phase-II implementation of ERP, and the solution has gone live at Head Quarters as pilot location on 22.02.2018. The project scope covers the implementation for FLM Module at TSGENCO to bring electronic desk in place of legacy file movement system with improved accountability & transparency and minimal consumption of paper in the organization.

Development of CORE and Generation Dashboards using SAP Analytics (BI/BO Module) – Objectives and scope of project

As a part of Phase-II ERP, TSGENCO senior management needs access to critical data on real time basis. To provide strategic information to management, dashboards must be available in such a manner, that critical information is always accessible to top management through these dashboards for analytical purpose and taking real time decisions. Moreover, there is a need to access these dashboards via mobile devices, hence these dashboards were proposed to be enabled on mobile devices as well, so that top management can take informed decision based on the data available through these dashboards. As such, an initiative to design and develop a senior level management dashboard has been christened as CORE Dashboard (CMD Office Real time Exclusive Dashboard) and Generation Dashboard.

Prior to the implementation of the Mobility solutions, the required data for preparation of MIS reports in HR, Material Management, Finance and other areas used to be in completely manual mode. The data collection from different wings across Plants using different methods like, Hard copy by post, Fax, e-mail, SMS, and WhatsApp used to consume lot of time and effort of many stake holders. The data so collected used to be consolidated to report in the form of designated templates for presenting to the senior level management to enable to take better decisions based on the facts and figures. The manual mode of collection, consolidation and presentation often reported mismatch of actual figures due to inadvertent errors leading to huge reconciliation effort. Further, as there is no centralized architecture being available, the data collected used to be available with mostly with the Data owners. Further there is no integration to the real time unit side generation parameters to ERP System to reap the benefit of OT(Operational Technologies) - IT (Information Technologies) integration.

Stakeholders

Development of CORE and Generation Dashboards using SAP Analytics (BI/BO Module) – Objectives and scope of project

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Key Aspects

The Vision of TSGENCO is “To be the best performing power utility in the country, and one of the best utilities in the world with the use of state-of-the-art technology and smart solutions.” The Mission of TSGENCO is “To generate adequate, reliable, cost effective and eco - friendly power by spearheading accelerated power development through the proper planning and implementation of new power projects.

In line with Vision and Mission of TSGENCO to adopt smart solutions, TSGENCO has implemented a state-of-the-art e-office solutions (SAP FLM) and dashboards(SAP BI/BO Module) to provide an innovative approach of file movement on digital platform and displaying TSGENCO critical KPIs on single dashboard for access by senior management through desktop and mobile.

e-Office using SAP FLM Module – key reasons for nomination

- The e-office solution using File Lifecycle Management (FLM) Module has got seamless integration with ERP and thus leading to improved transparency and accountability.
- Thus, the creation of file with SAP object assignment made a digital copy of both 'Note' and 'current' items tagged with one file name.
- The implementation of e-office solution has enabled users/initiator to create a file or daak (inward/outward) running text in paras or with predefined description template using various file types made available in FLM system.
- It is a direct benefit of improvement in cycle time of file creation to final approval.
- Also, in order to meet the specific requirement of TSGENCO, a few developments and enhancements were identified and taken up to fill the GAP while designing and mapping the process in FLM solution.

CORE and Generation Dashboards using SAP Analytics (BI/BO Module):

- The connectivity of the Plant (OT) with ERP System (IT) through MII enabled the unit data in the form of regular reports.
- The CORE and Generation dashboards now provide with real-time unit data to review and take decisions related unit operations and performance.
- Plant On-Line Generation for Thermal and Hydel plants.
- The on-line demand of Telangana State grid and Hyderabad City are captured from the Web service link of TSTRANSCO.
- The reservoir levels data on real-time mode is obtained through web services link <http://cadarsms.cgg.gov.in> and configured on Dashboard to schedule the Hydro Generation depending on Reservoir levels.
- The Real time Biometric Attendance of TSGENCO Employees is displayed on mobile platform.
- The following major critical information is configured and displayed in the dashboards for access through mobile.
 - ❖ TS Load (MW)
 - ❖ TS Demand (MW)
 - ❖ Grid Consumption (MU)
 - ❖ TS Energy Demand (MU)
 - ❖ Reservoir Levels
 - ❖ Coal Stocks
 - ❖ Equivalent Energy projection via Reservoir level data
- The developed CORE and Generation dashboard provides access to the consumption and stock of coal and oil at the Generating Stations.
- The Dashboard depicts the normative reserve coal stock for meeting the generation of 14 days against the current stock enabling the business to coordinate and ensure the Fuel stocks by effective Supply Chain Management.
- The following details are made available in a single dashboard for access through mobile

- ❖ **Generation Details:** The data related to load and generation particulars were obtained from different sources and different devices and made available in a single dashboard **for access through mobile.**
- ❖ **HR details:** All the employee related information through Biometric Attendance Monitoring Machines integrated with SAP ERP System is displayed to dashboard using Design Studio **for access through mobile.**
- ❖ **Finance details:** All the day to day business transactions, revenue particulars, inventory details, budget expenditure integrated with SAP ERP System is displayed to dashboard **for access through mobile.**
- ❖ **Construction Project details:** The construction project analytics like Project Cost and expenditure are displayed to dashboard **for access through mobile.**

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19 (till date)
e-Office using SAP FLM Module - FILES	FLM Module Implemented in TSGENCO to bring electronic desk in place of legacy file movement system with improved accountability & transparency and minimal consumption of paper in the organization	-	13,178	4,355
e-Office using SAP FLM Module - DAAK		-	24,076	13,106
Dashboards using SAP BI/BO Module	Dashboard implementation through mobile to enable Top Level Management to monitor the operational performance and metrics associated in real-time and take decisions instantaneously	-	45 users	55 users

Implementation Coverage

Implementation of e-Office using SAP FLM Module – Plan/Target

Sl. No	Pre FLM Implementation	Post FLM Implementation
1.	Manual tracking of file movements with less transparency and accountability.	Real-time tracking to multiple Stake holders with improved transparency and accountability.

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2.	Physical movement of file from one department to other - More lead time and difficult to trace file	On-line movement: Reduced administrative lead time as the Files are accessed even during out of office / on Camps. Easy and fast retrieval of files
3.	Huge manual effort in retrieving the files and Correspondence.	As it is central repository search facility is provided to retrieve files in short time with less effort and can be viewed by authorized persons only.
4.	Chances of missing file and contents. High efforts to reconstruct the file and contents	File and contents are secured. No possibility of missing and Access on hand sets (E-Mobility thru SAP Fiori App)
5.	No link to existing ERP System resulting in redundancy	Linking of SAP objects to files in FLM
6.	More Printing of hard copies by multiple stakeholders in the processes	Printing of hardcopies considerably reduced

Implementation of e-Office using SAP FLM Module – Plan/Target

S.No	Pre FLM Implementation	Post FLM Implementation
1.	Manual tracking of file movements with less transparency and accountability.	Real-time tracking to multiple Stake holders with improved transparency and accountability.
2.	Physical movement of file from one department to other - More lead time and difficult to trace file	On-line movement : Reduced administrative lead time as the Files are accessed even during out of office / on Camps. Easy and fast retrieval of files
3.	Huge manual effort in retrieving the files and Correspondence.	As it is central repository search facility is provided to retrieve files in short time with less effort and can be viewed by authorized persons only.
4.	Chances of missing file and contents. High efforts to reconstruct the file and contents	File and contents are secured. No possibility of missing and Access on hand sets (E-Mobility thru SAP Fiori App)
5.	No link to existing ERP System resulting in redundancy	Linking of SAP objects to files in FLM
6.	More Printing of hard copies by multiple stakeholders in the processes	Printing of hardcopies considerably reduced

New Services / Enhancements

Development of CORE and Generation Dashboards using SAP Analytics (BI/BO Module)-Plan/Target

S.No	Specific Project Goals envisaged at start	Specific Project benefits achieved
1.	To connect the real-time and critical data of Units (OT) with SAP so as to enable Top level management with necessary reports and dashboards using SAP ERP System.	The connectivity of the Plant (OT) with ERP System(IT) through MII enabled the unit data in the form of regular reports configured thru automated mails triggering in BI Server. Further, the CORE and Generation dashboards now provide with real-time unit data to review and take decisions related unit operations and performance.
2.	To facilitate Senior level management to have access to real time KPIs of TSGENCO and other PSUs/Departments, on Mobile platform for effective scheduling of Generation.	The following critical real-time mode data is configured on the dashboards for quick access through SAP BI Mobile APP. 1. Plant On-Line Generation for Thermal and Hydel plants is configured on Landing page in CORE and Generation dashboard 2. The on-line demand of Telangana State grid and Hyderabad City are captured from the Web service link of TSTRANSCO and is configured to monitor the demand to schedule the generation. 3. The reservoir levels data on real-time mode is configured on Dashboard to schedule the Hydro Generation depending on Reservoir levels. 4. The Biometric Attendance of TSGENCO Employees captured in Real time mode is depicted as X-Y line graph to show the no.of employees reported versus the time of reporting to enable HR and Admin wings to monitor the attendance profile of the employees.
3.	To provide strategic information to top level management using B-B integration .	The following major critical information is configured in the dashboards for access through mobile at any point of time. 1. Grid Demand 2. TS Energy 3. Coal Stocks 4. TSGENCO Generation 5. TSGENCO Load 6. Reservoir Levels 7. Finance -Budget Vs Consumption, Inventory levels 8. HR-Attendance and Head Count 9. Construction Projects status 10. Equivalent Energy projection via Reservoir level data 11. Total No. Employees and other employee details. 12. PLF (Plant Load Factor) 13. Total Generation (Actual Vs Target) 14. Coal / Oil consumption 15. Other KPIs a. Auxiliary power consumption b. H2 Gas Cylinder Consumption

Contd...

		c. Loss of generation in Mu d. DM water consumption (MT) and % of Make up
4.	To improve the Supply Chain Management of Fuels (Coal and Oil) to the Thermal Plants	The developed CORE and Generation dashboard provides access to the consumption and stock of coal and oil at the Generating Stations. The Dashboard depicts the normative reserve coal stock for meeting the generation of 14 days against the current stock enabling the business to coordinate and ensure the Fuel stocks by effective Supply Chain Management
5.	To have a unified view of important organization's data from the verticals such as HR, Finance, Construction and Inventory in the CORE and Generation Dashboard to enable to focus on the most important KPIs.	1. Generation Details: The data related to load and generation particulars were obtained from different sources and different devices (Manufacturing Integration and Intelligence, URL provided by I&CAD Department, MIS reports being published by various departments of TSGENCO and TSTRANSCO (SLDC) etc.) and made available in a single dashboard i.e CORE Dashboard for CMD and Generation Dashboard for top level management of TSGENCO for access through mobile. 2. HR details: All the employee related information available in the HCM and Payroll Module in SAP ERP system and Biometric Attendance Monitoring Machines integrated with SAP ERP System is integrated with BW Module and Processed and displayed to dashboard using Design Studio. 3. Finance details: All the day to day business transactions, revenue particulars, inventory details, budget expenditure and allocation captured in FICO & MM module in SAP ERP system integrated with SAP ERP System is integrated with BW Module and Processed and displayed to dashboard using Design Studio. 4. Construction Project details: All the business transactions captured in Project System module in SAP ERP system integrated with SAP ERP System is integrated with BW Module and Processed and displayed to dashboard using Design Studio

b. Indicate improvements/ enhancements specifically rolled out during the last oneyear and those which are planned to be rolled out during next one year.

Other Implementations taken up in addition to the above Phase-II ERP:

- Governance Risk and Compliance(GRC):
 - ❖ The configuration of GRC AC module i.e., roles assignment through workflow, risk analysis and mitigation of roles were developed.
 - ❖ Various Training sessions were conducted to the ERP core team members on mitigation of roles and assigning roles as per the workflow through GRCModule
- Real time Attendance is captured through Biometric Attendance Monitoring System (BAMS) and attendance reports and the percentage of employees present are automated to the respective managers and senior management respectively through e-mails and Short Message Service(SMS).

Implementations proposed to be rolled out for the next 2 years:

- ❖ Implementation of Open Text, SSO and BPC Modules
- ❖ Integration of OT & IT through MII to further level
- ❖ Build of Data Centre (DC) and Disaster Recovery (DR) Centre
- ❖ Upgradation of ERP System – SAP HANA Implementation
- ❖ Biometric Attendance Monitoring System - Payroll Automation
- ❖ Implementation Support to other PSUs/Govt. Depts

Enablers

Process Reengineering

Benefits of the deployed FLM Solution in TSGENCO

- (i) The FLM Solution has automated the processes related to File creation and Inward/Outward (DAAK) in line with the requirements of TSGENCO.
- (ii) Tracking of files by the respective processors has become easy. The Solution also facilitated easy and efficient interdepartmental communication.
- (iii) The work flow is mapped in the system according to TSGENCO's legacy requirements. As such, Workflows are streamlined.
- (iv) The FLM solution implemented led to improved transparency and accountability in the organization, and improvement in cycle time
- (v) The FLM solution has incorporated the technological advancements in performance management, security aspects, tools for configuration and configuration management with the UI5 interface.
- (vi) The solution has enabled the secretary/assistant/experts to record their views/comments using the sharing feature of FLM.
- (vii) Seamless integration with the implemented business functions in the ERP, link & access to the required documents & information in the ERP was also enabled.

- (viii) Implementation of FLM solution in TSGENCO has brought phenomenal change in work environment with minimal consumption of paper.
- (ix) File pull activity is enabled in FLM system to the authorized users to pull the long pending/emergency files in the inbox of users, on need basis.
- (x) FLM can be accessed using the FIORI tiles configured in the browser that can be run on desktop and mobile applications. This e-mobility feature enabled the FLM users to access and approve files from anywhere using mobile application

Benefits of the Developed CORE and Generation Dashboards in TSGENCO

- The top level Management could easily have access to the data/reports through smart phones to get business related information on faster mode without waiting for preparation of manual reports. The CORE and Generation dashboard have access to the mobile view, which enabled the senior level management of TSGENCO to view, analyze with any data, on any device - all in real-time. The developed CORE and Generation dashboard provides access to the entire organization data in a single application for connecting, analyzing and visualizing any data, from virtually any data source, on any device. As the data is made available on the single platform, the source of data from different devices such as Manufacturing Integration and Intelligence, URL provided by I&CAD Department, MIS reports being published by various departments of TSGENCO and TSTRANSCO (SLDC) etc. A full view of your organization's data in the CORE and Generation Dashboard enabled to focus on the most important KPIs and align business processes with goals of the organisation. Graphical Visualization enabled to analyze deeper, serving as an effective solution to the overwhelming amount of data that end users of TSGENCO experience every day.
- These analytical & graphical dashboards have enabled the senior level management to monitor and measure performance and metrics in real-time. Using CORE and Generation data is quickly accessible and actionable by the senior level management of TSGENCO. Decision Making and good utilization of data available in the dashboard. With quick self-service access users can have access to the various graphical trends made available in the existing dashboards. It enabled to analyse key data more quickly and thoroughly, improving the performance in each functional department when utilizing the well-designed CORE and Generation dashboard.

Technologies

Training Programs and Demonstration Sessions:

- Overview and Demo on FLM Functionality' sessions were conducted to the Functional Heads at Head Quarters, user nominees from Functional wings and Peshis at Head Quarters.

- The 'Feel Good Workshop Cum Training on FLM solution was conducted to all the Functional Heads at Head Quarters on 28.02.2018.
- The User Acceptance Testing was conducted on Quality system by the end users in two batches at Head Quarters and Plant Locations from 09.01.2018 to 10.01.2018 and 18.01.2018 to 19.01.2018.
- The End User Trainings on FLM solution were conducted by the FLM Core team members at Head Quarters in 18 batches and at various plant locations in 53 batches.

ERP Help Desk:

- Post Go-Live Support was extended to the end users at Head Quarters to enable creation of files using FLM system and for creation of BI mobile app in the mobile of senior management.
- Continuous assistance through mails and phone was extended to the end users till the users were able to effectively work on their own.

Training Manual in ESS Portal:

- The FLM User Manual is prepared and made available in ESS Portal for access of end users.
- The CORE and Generation dashboard is prepared and made available in portal for access to the top level management and peshies of their offices.

Usage of Workforce Performance Builder Module:

- (i) The processes were recorded and readily made available to the end users in the e-learning portal in the form of Audio-video content.
- (ii) The accurate documentation with context-sensitive help is being provided to end users with this module.
- (iii) The change management efforts were made through this module.
- (iv) The minor developments/system improvements made by the core team in the processes was also made available to the users immediately.
- (v) The end users could refer back to the points covered during trainings even after the training sessions by the videos developed and made available in ESS portal through this module.

People

- **The Management:** Unstinted support in Selection of Product & implementation partner, Selection of Core Team, Timely approvals for Process changes, Procurement of Hardware and Networking etc.
- **The Core Team:** Enthusiasm to learn, develop and implement was very high. They demonstrated their highest skills in all phases and coordinated as a bridge between Process owners, End Users and the Consultants.

- **The SAP Consultants:** SAP Consulting India has deployed their best, experienced team for training, development and implementation. At times they also provided Global resources, where ever needed.

The End Users: Though the organisation moved from totally manual, Semi Automated process to a totally automated system, with little bit of training their sincere hard work and enthusiasm to learn and work made the system successful.

Value Indicators

Learnings for Sharing

Best Practices and Key Learnings from FLM Solution in TSGENCO

- Real-time tracking to multiple Stake holders with improved transparency and accountability.
- Reduced administrative lead time as the Files are accessed even during out of office / on Camps. Easy and fast retrieval of files through search option in the Online movement of files.
- As it is central repository search facility is provided to retrieve files in short time with less effort and can be viewed by authorized persons only.
- File and contents are secured. No possibility of missing and Access on hand sets (E-Mobility thru SAP Fiori App).
- Integration was established to the existing ERP System by Linking of SAP objects to files in FLM.

Best Practices and Key Learnings from CORE and Generation Dashboards in TSGENCO

- Integrated all relevant KPIs into one display to support executive decision-making.
- Display reports on mobile devices and in Web browsers to increase productivity.
- Help ensure decisions are based on real-time data to preserve organizational agility.
- Guide smart choices about when to purchase outside power and replenish coal stocks to reduce expenses.
- Collate attendance data enterprise-wide to improve HR processes.
- Establish transparency around revenues and expenses to clarify the organization's financial position.

Digital Empowerment

- The 'IT' initiatives in TSGENCO have brought phenomenal change in the work culture of organization with sustained commitment. The people from top level management processes and organization are immensely taking benefit of conversion into digital platform by building robust solutions with IT applications using Mobile Technology as well. The digital journey in the organization is a continuous one which is enabling the organization a digital empowerment.

- The User Acceptance Testing was conducted and Major developments/enhancements were requested to be made by the end users.
- The standard SAP solution was not supporting the enhancements and additional developments required by the stake holders.
- Business Blue print was signed off by the stake holders after conducting User Acceptance Testing (UAT).
- Major developments/enhancements were taken up to the existing FLM solution and Dashboards to meet the specific process requirements of TSGENCO, with the support from SAP Consulting team.

Green Governance

The usage of e-office (FLM) enabled considerable reduction of Hard Copy prints thereby the reduction of resources for printers, copiers and scanning devices, which is paradigm shift from conventional Files/papers to a digital platform.

As there is reduction in MFPs, the disposal of old and unused printers also became easy and help establishing less e-waste generating company.

Many circulars were issued by the management for usage of the developed e-office solution which has considerably reduced printing of hardcopies.

The top level Management could easily have access to the data/reports in the dashboard through smart phones to get business related information on faster mode without waiting for preparation of manual reports, thereby reducing the hard copies of the manual reports.

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End-to-end Computerization of Public Distribution System in Kerala

Commissionerate of Civil Supplies, Government of Kerala

T. Mohana Dhas, Ajith Brahmanandan and Narasimhugari T L Reddy

Project Overview

1. Ration Card management System

1.1 Digitization of Beneficiaries

As part of the implementation of National Food Security Act in the state of Kerala, it was essential to identify the beneficiaries in Kerala based on various socio Economic parameters and the government of kerala has decided to go in for the fresh enumeration of the entire beneficiaries of Kerala. The digitized database available was taken as the base data and the ration cards in Kerala were renewed during the period of 2014-2016. Approximately 80 lakhs ration cards were renewed in the State. The ration cards were to be categorized into Andhyadaya(AAY), Priority(P), Non Priority Subsidy(NPS) and Non Priority Non Subsidy(NPNS) cards as per the rules and criteria laid down in National Food Security Act (NFSA).

1.2 Categorization using ranking Software

The State government had to ensure that the intended beneficiaries received the AAY and Priority cards, for which distribution of ration commodities were issued free of cost. The government also had to ensure that 595800 AAY cards were issued in the State and total priority population was 12922826 which were the limits set by the Central government for the State. The NPS card holders were to be issued with ration on subsidy charges. For implementing the card categories, Ranking software for ranking the ration cards were developed and implemented in the State. The ranking software used the basic parameters that were captured in the ration card data and identified the 'inclusion' and 'exclusion' criteria for including card holders within the 'priority' status. Based on the ranking, the cards were categorized into four types and distributed to the citizens. During this period, the State had suspended all activities related to the Ration Card management System and that included the issue of new ration cards and modifications in existing ration cards. Hence after the distribution of the renewed ration cards, there were approximately about seven lakh citizens' applications pending in Taluk Supply Offices/City Rationing Offices for card related activities. Apart from it, there was a huge demand from the citizens who require carrying out changes in the ration cards as and when the situation arises.

1.3 E-Services of Ration cards

Ration card holders and citizens were to be given the services such that they do not have to approach the TSO/CRO offices in the State for submission of their applications. They should be able to view their ration card details and application

status online and to be informed on completion of the processing of the application. The entire process of identification of beneficiaries and issuing of ration cards needs to be transparent, accountable.

Adhaar seeding of the beneficiaries and authentication of the ADHAAR stored in the database were essential for identifying the beneficiaries who purchased the ration commodities. The facility for seeding the Aadhaar numbers was to be made available for the citizens. Card holders who do not require the ration commodities were to be given the facility to surrender their ration commodities so that the Government can divert the commodities accumulated through surrender to the deserving beneficiaries.

FPS Automation

14300+ Ration shops in the state was automated using the NCI developed software. As the entire beneficiary data was digitized and almost 90% of the beneficiaries are ADHAAR seeded, the [process of FPS automation become simpler. The Supply chain management system also was introduced along with the same.

Public grievance portal

A separate portal for the public grievances regarding the PDS related grievances was also developed and implemented.

Transparency portal

To provide complete transparency of the department a portal has been developed and implemented.

Mobile App

A mobile application named 'Ente ration card' also has been released to provide the ration card related information to the beneficiaries.

Scope

Stakeholders

Key Aspects

- With the launch of e-Services , the major achievement is that citizens/card holders can apply for the ration card activities from anywhere at any time. Initially before the launch of the services, the card holders/citizens had to stand in long queues for submitting their applications. It has helped to minimize the interactions of the citizens/card holders with the TSOs/CROs. Officials of the TSOs/CROs are able to speed up the processing of the submitted online applications. The citizens are able to view the application status online. Online verification of ration cards enables the officials of the government and private sectors to easily verify the ration card details. Card holders are able to electronically transfer the ration card or members from one TSO to another TSO, thereby reducing the number of visits at the 'source' and 'destination' TSOs/CROs. Citizens can also avail the assistance of nearest service community

centers like Akshaya for submitting their application forms. This totally eliminates the need for data entry of the applications at TSOs/CROs.

Another important e-Service delivery was the issue of duplicate ration cards to the flood affected victims. 2786 duplicate ration cards were issued in the State. The ration card documents have been integrated with Digi Locker. The RCMS data is being effectively used during Calamities and for Relief Management.

The RCMS eServices are offered through Public Portals, Akshaya or CSCs and in Offices. Integration with VAHAN and SARATHI eliminates bogus cards. Integration with Calamity and Relief Management would facilitate auto identification of farmers.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
New Ration card	Various ration card related Services		411375	276993
Addition of Member			559178	488989
Reduction of Member			131399	284624
Change of Ownership			35893	79797
Name Correction			83488	95354
Surrender of Cards			2211	4425
Issue of Duplicate Ration Card			15104	19938
Address Change			50319	45883
NRC/NIC			9747	3
Change Residence Status			28627	39684
General Details			65057	85713
Transfer of Cards			26622	12815
Add Transferred Cards			8794	23298
Transfer of Member			285101	139399
Add Transferred Members			388	660
Profession Change			107116	164354
Bank A/C			1454	1677
LPG Details			1010	4657
Change ARD			15921	15841

Implementation Coverage

- (a) Implementation Coverage achieved in comparison to the plan / target
- The beneficiary data digitized for the entire state
 - All the ration card related services are delivered on-line through Taluk Supply Offices, AkshayaKendras and Also on-line by Citizen in the entire state.
 - The entire 14300+ Ration Shops in the state automated
 - All the grievances are accepted and monitored through the Public grievance portal
 - All the PDS information is made transparent through Transparency portal

New Services / Enhancements

- (b) Indicate improvements/ enhancements specifically rolled out during the last one year and those which are planned to be rolled out during next one year.

Improvements made

- The facility to scan and upload and submit the supporting documents online
- The facility to apply for ration card from any TSO or any Akshaya and get the final card from any Akshaya centre
- LPG Give Facility
- Ration Commodity Give up facility

Planned features/improvements

- Online payment option
- e-Ration Card
 - One Nation and One ration card implementation in progress
 - Integration with State and Central DBT Portal for DBT Kind Services in progress
- Integration with Calamity and Relief Management Portal in Progress
- Integration with Agriculture Calamity Relief Management - in progress
- Mobile app with entire service services through Mobile

Data Analytics

Enablers

Process Reengineering

E-Services (RCMS) intend to provide services related to RCMS to citizens and ration card holders through Common Service centers and through Citizen e-Services portal. e-Services for RCMS consists of 23 services related to Ration Card Management activities. Some of the important services are issue of new ration card, Addition/deletion of members in existing ration cards, splitting of ration card from two or more existing cards to form a new card, transfer of card from one TSO/CRO to another TSO/CRO, transfer of member (s) from one TSO to another TSO and issue of bilingual ration cards. Citizens/card holders are able to submit their applications using one of the following channels:

- (i) Through Common Service Centers (Akshaya centers)
(<http://ecsc.civilsupplieskerala.gov.in/>)
- (ii) Through citizen services (<http://ecitizen.civilsupplieskerala.gov.in>)
- (iii) Through Taluk Supply Offices (TSOs)/City Rationing Offices(CROs)
(<http://etso.civilsupplieskerala.gov.in/>)

Applications submitted by CSCs/Citizens are processed using the work-flow based web enabled e-services at the Taluk Supply Offices/City Rationing Offices in the State. e-Services utilizes backend computerization to e-enable the delivery of services and ensures transparency and uniform application of rules. It helps in minimizing time and effort to provide prompt and effective service to the public.

The salient features of e-Services(RCMS) are as follows:-

- (i) A unique application number generated for each application submitted by the citizen
- (ii) Citizen can find out the status of his application using the 'View Application status' available on the public portal.
- (iii) SMS alert send to the card holder on submitting the application.
- (iv) On approval of the application by the Taluk Supply Officer, an SMS message is sent to the card holder alerting that the application has been processed.
- (v) Card holders can register in the citizen's portal and avail all the services related to RCMS.
- (vi) Citizens are able to view all the application details submitted by him on the home page.
- (vii) Card holders are able to electronically transfer the ration cards from one TSO to another TSO, thereby reducing the number of visits at the 'source' and 'destination' TSOs/CROs.
- (viii) Card holders are able to electronically transfer the members in card from one TSO to another TSO.
- (ix) A 'Front office' module available for TSOs/CROs for entering the applicant's name, mobile number and card service. On submission, an SMS message will be sent to the card holder. This facility enables the citizens/card holders to avoid standing in long queues for submitting the applications.
- (x) TSOs are given a 'Card history' module to view all the card related activities carried out on a card.
- (xi) Akshaya centers' entrepreneurs able to view applications partially entered or those pending for by TSOs.
- (xii) Dashboards displaying various statistics available on the home pages of the Commissioner ate/Director logins, District Supply Officers and taluk Supply Officers.
- (xiii) Provision given on the public portal to view the ration card owner's name, family details and the card type.

Technologies

Social media accounts are available to publish the details and also to get the feedback of the stake holders. Data analytics is used for the analysis of monitoring of the project. ELK stack is used to analyse the logs and find anomalies and in the development stage.

People

Regular Capacity building programmes are organized for all the stake holders. Regular publicity and ease of use of the facility and availability of the services in their door steps are announced through SMS and various media.

Value Indicators

Learnings for Sharing

- Well planned strategy with Top management Support and involvement of all stake holders will deliver the results. Even though it was a slow starter, the robust database designed and the accurate data entered created a very authentic master database of the state. This enabled the easy implementation of Fair price shop automation.
- The 2500+ Akshaya kendras in the state are used for the delivery of the ration card services and was enabler.
- The State Data centre infrastructure was used to collocate the servers The State Wide Area network was used for the connectivity to all the Civil Supplies offices.

The regular awareness and Capacity building programme to all stake holders also played a major role in the smooth implementation.

Digital Empowerment

Some of the border districts bi-lingual cards are issued and the same service is provided in the local language, the databases are created with Unicode and there was no issue in use of any of the Indian languages.

Green Governance

Completely eliminated the use of physical documents and in the origination itself the documents are scanned and sent and no physical papers are moved.

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Planning Digging & Monitoring System (PDM)

Government of National Capital Territory of Delhi

Sandeep Kumar, Anish Sinha and K Murugan

Project Overview

The Planning Digging & Monitoring System (PDM) application is accessible to all stakeholders i.e. road owning agencies, road cutting/digging agencies and citizens. All authorized persons within agency can access the PDM application through their computers / mobile devices, apply online with details and make online payment through the e-Payment Gateway of State Bank of India. All stakeholders / citizens of Delhi can see the status of their projects on the portal.

There is no physical delivery center. Access to the agencies is made available after registration on the portal. All Districts, sub-divisions / areas are covered under the PDM application.

The GIS based PDM Application is hosted on URL <http://gsdl.org.in/pdms>. The software application enables the Nodal Officer of the road digging agency to log into the website and mark the road of the concerned road owning agency on the map which needs to be cut/dug up. The length of the road to be cut is calculated automatically by the system and displayed. The stake holders can refer to the user manual which is also available on the website. The applicant can mark for different kinds of road cutting namely, trench, trenchless and composite. The request of the applicant is automatically transferred to the concerned engineer of the road owning agency along with a PDF file containing the map of the location where road is proposed to be cut. A Unique ID is generated, which can be used for future references by all stakeholders. The date of site inspection is fixed through the system by the authorized person of the road owning agency and all stakeholders including utility owners and Traffic Police are automatically informed through email so that they can be present at the inspection site. The information available from various GIS layers (including depth of underground utilities) is utilised for taking decision regarding grant of road digging permission.

Once the Competent Officer clears the digging operation after inspection, payment of fee is made by the applicant through an online payment gateway mechanism. Thereafter, permission is generated online through the system.

Stakeholders

Stakeholders can see on the website, details of

- (a) Project and location,
- (b) Road digging agency,
- (c) Road owning (permission granting) agency

- (d) Start date,
- (e) End date and
- (f) GIS based map of the location.

There is a provision for

- (a) Giving feedback by citizens
- (b) Uploading of images in each project.

The citizens can submit their feedback anytime including after the restoration work has been carried out by the Road Owning Agencies.

Key Aspects

PDM system is an innovative model, providing facility of single-window, online, transparent and end-to-end approval for road digging permissions.

With help of the system, authorized officers for road cutting / digging agency can submit their online applications with details, while each approving authority viz Nodal Officer can grant permissions online.

Road cutting agencies can access the PDM application through mobile devices in responsive mode, apply online and can make online payment through the e-Payment Gateway.

The system is presently maintained by Geo Spatial Delhi Limited, a 100 % body of Delhi Government. Policy directions are issued by the Government, while service delivery is ensured through the PDM and online payment gateway which is integrated with this system.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2017 (Jan-Dec)	2018 (Jan-Dec)	2019 (till date)
Application for Road cutting Permission	Applying new road-cutting request online for provision of a high resolution GIS map of the road patch to be dug followed by inspection request with utility owners.	4472	6940	5531*
Period for grant of Road Cutting Permission		122 days (initially)	30 days	7 days
Cumulative Users Registered for GIS Map service.	The Registration is required by user to access the GIS Data for making plan layout.	156	403	643

Implementation Coverage

(a) Implementation Coverage achieved in comparison to the plan / target

- A transparent system of road digging permission is available to the road owning & road digging agencies.
- The system is hassle free. Multiple visits to the office of road owning agencies are avoided.
- All stakeholders can share their requirement as well as decision on a standardized format.
- Geospatial Information of various utility layers available in the geo-portal helps in deciding grant of permission for road digging as well as makes it reliable.
- Lot of time /effort is saved due to availability of geospatial information & avoidance of visits.
- Allegations regarding loss of files / bribery are no longer there as applications submitted online can't be lost.

Top Management can review the status of various roads digging project.

- Joint Survey Inspections (JSI) are now conducted on an average, within 2 to 3 days from the receipt of online applications as compared to average 1-2 months earlier.
- A total of 16,885 requests have been processed online till now.
- This system now gives the option to Road Cutting Agencies (RCA) for selecting various policies like 'Dig and Restore policy' and 'Dig and Deposit policy' through which, RCA can undertake road cutting and road restoration both.
- Other specific quantitative indicators are given in Table at 4.1

New Services / Enhancements

(b) Indicate improvements/ enhancements specifically rolled out during the last one year and those which are planned to be rolled out during next one year.

100% permission is granted through PDM Application; no manual process is required for Road Cutting Permission. (Data given in table at section 4.1)

The following have been identified for enhancement for next one year:

- Business continuity documentation will be completed and implemented.
- Source Code versioning and backup system will be implementing for safeguarding the source codes. A mechanism for step-wise retrieval of source code will be implemented.
- GIS and Mapping: GIS and mapping are being up-graded with new boundaries and streets. Street name layer is being made active, so that users can see the milestones easily. Zoom facility will be provided in the map so that users would be able to zoom while drawing, more precisely.

- Redundant Payment Interfaces: Additional payment gateways are being integrated in order to strengthen the existing e-payment utility. Cancellation and Instant Refund will be facilitated.
- Departments / Agencies of Government of India like Indian Railways, NHAI etc will be persuaded to integrate their processes with PDM system.

Enablers

Process Reengineering

Criterion	Before PDMS	After PDMS
Business Process Reengineering	• GIS maps having information of utility layers were not used. • Applications were submitted manually & multiple visits were required to the offices of road owning agency. • Inspections were fixed manually. • There was no system of e-payment. Approval process was completely manual.	• GIS maps are now used. • Applications are submitted online & the system allocates it further to the concerned authority in the road owning agency. • Inspections are fixed through the online application • Payment is made online by road cutting agency. Approval letters are generated online.

Technologies

Delhi Geo Portal is based on Open Geospatial Consortium (OGC) standards. There is no vendor lock-in w.r.t. the geospatial system. Since there are common standards in the base system, it is easy to share data, apply thematic layers on maps.

People

Initially, meetings were held in CM office / IT Department to devise strategy for simplified process of approvals and to understand the problems / requirements of various stakeholders. Software was designed as per the functional requirement of engineers of road digging agencies and road owning agencies. After testing the system, the concerned persons were sensitized. Comments of the stakeholder agencies were sought before introducing a Cabinet note in the matter. The Council of Ministers decided on 06.06.2016 decided that all requests for road cutting permissions shall be processed online on an integrated platform. This indicated the resolve of the Government to simplify the entire process. A Nodal officer was appointed in IT Department, PWD and GSDL etc.

The two agencies of IT Department, Delhi Government i.e. Geospatial Delhi Limited and Delhi e-Governance Society (DeGS), were tasked to design and develop a web

based application which would bring together the two major stake-holders i.e. road cutting agencies and road owning agencies onto a single online platform. The software was developed in-house after consulting stakeholders.

Meetings at the level of Chief Secretary / Secretary are held to iron out inter agency issues. Updated Maps are procured from NRSA. Attribute data is updated by the departments mandatorily under provisions of the Governing Act. Trainings are held from time to time. Manpower resources are engaged in-house to avoid vendor dependency.

Value Indicators

Learnings for Sharing

Key learnings are as follows:

- A system backed by the top gets implemented faster
- Inter-agency agency issues can be sorted out if meetings are held at the top level
- Transparency helps in avoiding allegations of discretion / corruption
- Involvement of stakeholders/people is important at design stage
- Good broadband connectivity is crucial for online services

Digital Empowerment

PDMS has facilitated digital empowerment and promoted good governance. Earlier road cutting agencies faced following problems:

1. The agency that required permission for road-digging was required to visit multiple offices of different road owning agencies and submit applications manually with details of work, proposed dated of start and completion of the work and the estimated cost thereof. The process involved lot of paper work and time, and multiple visits to the concerned departments.
2. Sometimes the file submitted in hard copy was lost by the road owning agency leading to allegations of corruption.
3. Disputes regarding the rates applicable as adopted by agencies for different types of roads occasionally emerged.
4. GIS map / data of underground/over ground utilities was not utilized.
5. There was no time limit specified for disposal of the application.

This led to overall delays and project cost and time over-runs for both Road Owners and Utility Owners. It also led to inconvenience to the general public as dug up roads / delayed road improvement projects would occasionally result in accidents, traffic jams and loss of precious man-hours in longer commuting time.

In PDMS, all the activities and related processes including registering on the portal, putting requests, usage of GIS maps, inspection and e-pay approvals have a predefined workflow with respect to specific users. All the activities and process execution can be tracked with time stamping in its backend resulting in efficiency and effectiveness.

Green Governance

- Paper less system has been implemented
- Multiple visits have been eliminated thereby saving on fuels and reduction in pollution
- Cloud storage implies no separate hardware procurement / e-waste

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Vahan 4.0

Ministry of Road Transport and Highways, Government of India

Priyank Bharti and Joydeep Shome

Project Overview

The application provides a complete range of services related to Vehicle Registration, Permit, Taxation, Fitness and allied processes. Developed under the auspices of Ministry of Road Transport & Highways and customized for each state's requirements, this application is currently implemented in 31 states and UTs across the country.

Vahan 4 is the latest version, which is deployed on a centralized cloud environment and accessible through web to all RTOs, Dealers, Citizens, Transporters and various other stakeholders. Data from legacy versions of Vahan distributed applications have been migrated and consolidated to this centralized system.

Through web to all RTOs, Dealers, Citizens, Transporters and various other stakeholders. Data from legacy versions of Vahan distributed applications have been migrated and consolidated to this centralized system.

Scope

Key Objective:

- To enable real-time data availability on a national scale
- To enhance scalability and data integrity
- To ensure transparency and efficiency
- To facilitate enhanced application features and functionalities

Features/Functionalities:

- Architected on a centralised, multi-tenanted, web-enabled platform and deployed on NIC cloud infrastructure, which provides high security, availability and data integrity.
- It comprises a single database and single core application having an intelligent configuration option to address inter-state variations in the processes, tax structures, formats, payment modes and so on.
- It is well integrated with various ancillary services (Fitness centres, driving schools, Dealer Points, etc.), its ecosystem (NCRB, Transporters, Manufacturers, CCTNS, Banks, etc.), along with government schemes/ services (Digilocker, UMANG, e District, eMitra, e Sign, etc.)
- Some of the features planned to be introduced in near future:
 - More Digital Payment Options

- Enhanced Integration with all stakeholders
- Adoption of Big Data in Advanced Analytics, Dashboards and Reporting for Decision Making, Forecasting etc. purposes
- Emerging Technology Interventions like IoT, AI, etc. in Vahan 5

Stakeholders

A large number of Government Departments (Central and State), Police & Security Agencies, Banks, Insurance Companies, IRDA, CCTNS, Transporters, Manufacturers, Citizens, Retro fitment agencies, DigiLocker, etc., apart from the core user base of RTO/ Transport Department staff, Dealers, and others have been provided data access on the Transport National Register through API.

Current Status:

Implemented in 31 States/UTs, 1186 RTOs and ~20,000 Dealer Points

Key Aspects

Vahan 4.0 is a flagship application under the larger eTransport MMP

- It was already running in distributed mode across the country, by the latest version (version 4.0) has been redesigned to become web-enabled version and re-launched through a centralised portal – <https://parivahan.gov.in> to enable a full set of G-G, G-B and G-C services. In other words, the delivery platform has been completely shifted to centralised, web enabled infrastructure.
- It comprises a single database and single-core application having an intelligent configuration option to address inter-state variations in the processes, tax structures, formats, payment modes and so on.
- Is a true embodiment of Digital India vision, with ~1200 RTOs (close to 90%) already on boarded to the centralized application, across the 31 states & UTs.
- Almost 100 online citizen-centric and trade-centric services have been launched with facilities like e-payment, online appointment, document upload etc. – convenience to users, transparency & efficiencies in the system

Well-connected/integrated with multiple Payment Gateways, IRDA, NCRB, Banks, CSC, UMANG, Digi-locker and various other stakeholders in the ecosystem- enabling easy data sharing & error free system.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
• Vehicle Registration: ○ New Vehicle registration &	Various citizen and trade centric services, aimed at:	3 Lacs	40 Lacs+	1.85 Crore+

Contd...

- Renewal of registration ○ Change of Address, Transfer of Ownership, Issue of NOC ○ Duplicate RC, Renewal of Temporary RC, Change of Name in RC ○ Cancellation / Surrender of RC ○ RC Release ○ RC Particular ○ Reassignment ○ Add / Continue/ Terminate - Hypothecation ○ Vehicle Conversion & Vehicle Alteration ○ Auction & Retention of vehicle nos ○ Dealer Registration & Trade Certificate ● Permits: ○ Change of Address & Replacement of vehicle in Permit ○ Issuance of Interstate & Duplicate Permit ○ Transfer, Surrender / Cancellation of Permit ○ Issuance and Renewal of Main Permit ○ Issuance of Short Period Permits	● Automating the process of availing various RC related services- primary activities like service request, appointment booking, document upload, fee payment, etc. prior to visit to RTO, are completely online. ● Removing inefficiencies from various processes- the overall timelines and errors, while availing a service, have considerably reduced Bringing transparency in the system- the completely online, workflow-based processes, have helped in preventing leakages and malpractices in the system			
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(Special/ Temporary) ○ Surrender of Permit – transfer/ surrender, etc. ○ Endorsement of Permit ○ Renewal of Home Authorisation for AITP and NP • Fees & Taxes: ○ Tax collection ○ Transfer of Taxes ○ Tax default Notice ○ Pay Balance Fees • Enforcement: ○ Issue of Challan ○ Settlement of Penalty ○ Disposal of Challan ○ Release of document / Vehicle • Fitness: ○ Fitness Backlog entry ○ Issue, Renewal, Cancellation of Fitness Certificate ○ Issue of Duplicate Fitness Certificate				
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Implementation Coverage

- Implemented in 31 States/UTs, 1186 RTOs (~90% of total)
- 20,000+ Dealer Points on boarded
- Countrywide data in National Register (NR) comprising more than 26 Crore Vehicle Registration records and all other relevant information have been consolidated in a central database
- A large number of Government Departments (Central and State), Police & Security Agencies, Banks, Insurance Companies, IRDA, CCTNS, Transporters, Manufacturers, Citizens, Retro fitment agencies, DigiLocker, etc., apart from the core user base of RTO/ Transport Department staff, Dealers, and others have been provided data access on the Transport National Register through API.
- Other Key Implementation Areas under Vahan 4.0:

- Homologation (for type approval of vehicles) - integrated with inventory of 11 Cr+ vehicles
- Permit (Online + Offline) ~20 Lacs (2018-19)
- National Permit - 88 Lacs+ Permits issued
- PUC (Pollution under Control Certificate)- implemented in 15 states/ UTs. 65 lacs+ PUC already issued
- Online Checkpost- implemented in 14 states/ UTs
- Fancy Number- implemented in 21 states/ UTs
- Vehicle Location Tracking Device (VLTN)- implementation in 14 states/ UTs (underway across the country)
- Speed Limiting Device (SLD)- implementation in 1 state/ UTs (underway across the country)

Data Sharing with Business - 98 Businesses (across Banks, Insurance Companies, Manufacturers, NBFCs & Transporters)

New Services / Enhancements

- 1186 RTOs have already shifted to the new Vahan 4.0, along with complete migration of legacy data.
- Almost 100 online citizen-centric and trade-centric services have been launched with facilities like e-payment, online appointment, document upload etc.
- Launch of SLD (Speed Limiting Device) Maker
- Launch of VLTN (Vehicle Location Tracking Device) Maker
- mParivahan mobile App rolled out nationally, facilitating Virtual RC, on-the-go RC related services, etc.
- National Permit Dashboard
- HSRP made mandatory for all vehicles
- Introduction of a uniform, secure Smart Card for Registration Certificate, across the country. Ministry has already issued notification in this regard, stating the timelines, and other T&Cs for implementation of the same by the states/ UTs
- Analytics Portal made more robust and dynamic by employing new tools (Tableau) and technologies like Big Data, etc.

Improvements/ Enhancement planned for roll out in near future:

- More Digital Payment Options
- Enhanced Integration with all stakeholders
- Adoption of Big Data in Advanced Analytics, Dashboards and Reporting for Decision Making, Forecasting etc. purposes

Emerging Technology Interventions like IoT, AI, etc. in Vahan 5

Enablers

Process Reengineering

- Transition from distributed to centralised web, enabled application
- Vahan 4 application with its emphasis on online RTO operations and focus on citizen-facilitation, has implemented substantial process re-engineering in various aspects of RTO operations and the interfaces with citizen and trade.
- A number of process reforms have also been taken up to ensure more reliable application delivery, improvement in data quality through adoption of web enabled, centralized approach for various applications, and other initiatives. E.g. 1. Online appointment booking, document upload, payment, etc. features during vehicle registration. 2. Completely Online permit availability and payment for goods carriages 3. Online border tax, online fancy number bidding & booking, and plethora of other process reforms.
- Standardisation of RC smart card across the country, and a number of other documents/ steps
- Through API based data sharing and process integration with various stakeholders, the application has streamlined and modernized a large number of processes and protocols within the existing framework of rules and acts.

All this has resulted into better customer experience and convenience, together with the overall improvement in system transparency & efficiency.

Technologies

- Adoption of Big data, Data Analytics and visualisation tools like Tableau, R, etc. in Dashboard, MIS for Advanced search, forecasting and analytics- facilitating informed planning, decision making and monitoring by Apex authorities and other stakeholders alike.
- API based access/ data sharing with to various internal/ external stakeholders.
- Mobility solution in the form of mParivahan mobile app, providing on-the-go availability of various RC services related information, RTO location guide, Virtual RC, facility to share RC with someone else, etc.

People

- One of the major change has been the transition from the standalone Vahan system running in various states to one centralized Vahan, which is essentially Vahan 4.0.
- The transition included the migration of data from the existing system and the digitization of legacy data, while addressing the data quality issues.
- During this activity, Change Management was a major challenge owing to:
 - The resistance shown by RTOs to learn a new system
 - Vested interests, as the roll out of the new system would bring in transparency and curb malpractices, leading to difficulties in smooth implementation of the project. However, through:

- Support & intervention from leadership
- Involvement of Departments, Ministry, in key decisions/ matters
- Dedication and perseverance from the team, for time bound implementation of the project
- Workshops, Training & handholding of RTO officials, state departments and various other stakeholders, most of the challenges have been addressed-effecting roll out of Vahan 4.0 in almost 90% of the RTOs, across 31 states/ UTs.

Value Indicators

Learnings for Sharing

Vahan 4 application has evolved through a process of learning, changes and enhancements in the last four years.

The process of implementation in different states, various new requirements, situations, issues etc. has provided a rich learning experience and multiple opportunities – which have made the product more robust and richer in terms of features, functionalities and security.

Key Challenges encountered and overcome during the project implementation, are as follows:

- Transition from the standalone Vahan and Sarathi systems running in various states to one centralized Vahan and Sarathi system. This included the migration of data from the existing system and the digitization of legacy data- while addressing the data quality issues.
- Change management was a major challenge due to resistance in RTOs to learn a new system, vested interests posed challenges in implementation and roll out of the new system which would bring in transparency and curb malpractices.
- Meeting continuous & high demand to deliver more applications, modules, services
- Customisation of applications to state specific rules/ processes/ policy
- Handling infrastructure sizing/ number/ model (cloud/ hardware) issues, on-the-go, to avoid performance bottle-necks in the system.

Digital Empowerment

- Renewed focus on the increase in the transparency and accountability in the system. Although there is a lot of ground yet to be covered, in most cases, citizens are facing less hassle in getting their services. Leakages in government revenues have substantially reduced and overall environment in most of the RTOs has become more transparent and citizen-friendly.
- Citizen, Transporters and all other stakeholders' concerns have been incorporated in the system to make it more user-friendly. E.g. Parivahan Portal available in Hindi as well as English languages. The portal follows other accessibility guidelines, font size adaptability, etc. as well, in an endeavor to be all inclusive.

- Option to citizens to carry out a major part of the transactions involved in all processes from the comfort of their homes and need to visit RTOs only for essential functionalities such as appearing in learner or driving tests, authenticating documents, getting physical fitness of vehicles done etc., and that too, as per pre-scheduled online appointments.
- A large bouquet of digital payment options (multiple options like Net Banking, Card Payment, PoS Payment, Challan Payment and other innovative modes) have been incorporated in Vahan 4 as per state's requirements. Specific payment gateway/ Integrator/ Cyber-Treasury as per state's specification have been integrated to facilitate payment-enabling anytime, anywhere payments
- Integration with various stakeholders in the ecosystem, to facilitate easy data sharing. E.g. availability of RC & DL documents through Digilocker.

Green Governance

- Vahan 4 is a completely work-flow based application, leading to:
 - Less paper work in RTOs due to automation of processes and availability of all the information online – resulting in substantial reduction of paper-work.
 - Availability of online MIS Reports, dashboards which has ensured that inter-departmental and intra-departmental paper usage has been curtailed considerably.
 - New facilities for uploading of documents (required for proof of address, identity, purchase, transfer, etc.) which ensured further reduction in the need to take and store paper documents for statutory purpose.

The application is deployed in Cloud environment (VM provisioning from the National Data Centre of NIC) with minimal requirement of dedicated infrastructure/ hardware, and thus ensuring reduced carbon footprint.

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PUC 1.0

Ministry of Road Transport and Highways, Government of India

Priyank Bharti and Joydeep Shome

Project Overview

The application provides a complete range of services related to PUC Station Registration, Renewal, Issue of PUC for the Vehicles, collection of online/counter fees, SMS services etc. Developed under the auspices of Ministry of Road Transport & Highways and customized for each state's requirements, this application is currently implemented in 13 states and UTs across the country.

PUC is a web enabled application, which is deployed on a centralized environment and accessible through web to all RTOs, PUC Stations, Citizens.

Scope

Key Objective:

- To promote and enforce compliance of pollution norms for vehicles
- To ensure PUC certification for vehicles as per standard and transparent process.
- To enable real-time PUC data availability on a national scale
- To enhance scalability and data integrity

Features/Functionalities:

- Architected on a centralised, web-enabled platform and deployed on NIC cloud infrastructure, which provides high security, availability and data integrity.
- It comprises a single database and single core application having configurable options to address inter-state variations in the workflow, fees structures, output formats, payment modes and so on.
- It is well integrated with various ancillary applications (Vahan 4.0, eChallan, mParivahan).
- Some of the features planned to be introduced in near future:
 - More resilient system, enabled by identification of forgery through AI
 - Enhanced Integration with all stakeholders
 - Adoption of Advanced Analytics, Dashboards and Reporting for MIS, Decision Making etc.
 - Emerging Technology Interventions like IoT, AI, etc.
 - Development of a single API for all device integration

Stakeholders

The main stake holders are ARAI, Device manufacturers, PUC stations, Citizens, VAHAN, mParivahan, eChallan, DigiLocker, etc., apart from the core users of RTO/Transport Department staffs.

Current Status:

- Implemented in 13 States/UTs, 8223 PUC Stations, 22 device manufacturers
- ~50 models certified
- 70 Lacs+ certificates issued

Key Aspects

PUC is one of the key applications under the larger eTransport MMP

- This is a centralized application designed to connect all Vehicle Pollution Checking Centres which issues Pollution Under Control Certificates to vehicles as per Motor Vehicle Act.
- It facilitates mandatory linking of PUC status of vehicles with the Centralized Vahan Database for vehicles as per Supreme Court Guidelines.
- The web enabled application is running in 13 states through a centralised portal – <https://vahan.parivahan.gov.in/puc/>.
- All measuring devices and APIs are certified by Authorized Type Approval Agencies.
- It comprises a single database and single-core application having configurable option to address inter-state variations in the work flow, fees structure, output formats, payment modes and so on.
- It is a true embodiment of Digital India vision, with **~8223 PUC Stations already on-boarded to the centralised application, generating more than 70 Lacs certificates.**
- Integrated with Transport National Database for verification of technical parameters.
- Citizen can avail the PUC Certification process in a transparent and tamper-proof manner. Certificate is stored in Central system and status is reflected in National Register, DigiLocker, mParivahan etc.
- Malpractices involved in manual process replaced by automated reading, analysis, approval and certification by machine.

PUC Operators can register online, pay fees through ePayment mode. Transport Department can approve and monitor centres –**convenience to users, bringing transparency & efficiencies in the system**

Result Indicators**Services**

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
No. of PUC issued (~70 Lacs, as on date)	Completely online certificate issuance process ensures compliance with current emission norms, data accuracy, transparency as well as efficiency.	NA	NA	7,863

Contd...

	The certificate is issued only after real time data fetching from Vahan (vehicle RC) database.			
No. of PUC centre (8223, as on date)	Completely online centres, in which are in sync with Vahan database, facilitating accuracy in data, efficient system, and minimal manual interventions/ entries, thereby reducing scope for errors.	NA	NA	99

Implementation Coverage

- Implemented in 13 States/UTs, 8223 PUC Stations
- 22 manufacturer and 50 devices are registered
- 13 states data in centralised repository comprising 82 pollution related smoke parameters of Vehicles
- A large number of stake holders like ARAI, Device manufacturers, PUC stations, citizens apart from the core user base of RTO/ Transport Department staffs.
- Other Key Implementation Areas under PUC:
 - Integration of PUC with device through API
 - Getting vehicle data from VAHAN/NR through services
 - Online application and payment through multiple payment Gateway
 - Download of PUC certificate by the citizens.
 - Data Sharing with VAHAN, mParivahan, eChallan etc.

OTP based owner authentication process

New Services / Enhancements

Improvements/ Enhancements rolled out recently:

- PUC implemented in 13 states and 4 states are in the process to shift to web enabled PUC application.
- 56 configurable parameters to meet inter-state variations
- 22 manufacturers device integrated
- About 50 PUC models integrated
- Introduction of a uniform, secure QR coded based PUC Certificate.
- Analytics Portal and Dashboard is under development.

Improvements/ Enhancement planned for roll out in near future:

- More Digital Payment Options

- Enhanced Integration with all stakeholders
- Adoption of Advanced Analytics, Dashboards and Reporting for Decision Making, Forecasting etc.

Emerging Technology Interventions like IoT, AI, etc. in PUCC version 2.

Enablers

Process Reengineering

- PUCC application with its **emphasis on online operations** and focus on citizen and other stake holder facilitation, has implemented substantial process re-engineering in various aspects of operations and the interfaces with citizen and trade.
- There is a **centralised , automated system** which enables real-time pollution data availability
- **A number of process reforms** have also been taken up to ensure more reliable application delivery, improvement in data quality through adoption of web enabled, centralized approach. E.g. 1. Creation of a tamper-proof process and system 2. Implementation of standardised smoke parameters, as per guidelines
- Introduction of a **uniform, secure** QR coded based PUC Certificate

Technologies

- Adoption of MIS for facilitating **informed planning, decision making and monitoring** by Apex authorities and other stakeholders alike.
- API based **access/ data sharing** with various internal/ external stakeholders.
- Analytics Portal and Dashboard, based on data analytics related insights for informed decision making, to be rolled out soon

Planning on usage of AI for identification of fraudulent practices, forgery

People

- One of the major changes has been the transition from the distributed PUCC stations to one centralized PUCC system.
- Also, the earlier system was manual, with scope for malpractices by the PUCC operator and other stakeholders.
- The transition to the new, online system included the device integration of various manufacturers, system-based Pass/Fail of vehicles during PUCC issuance, and implementation of standardised smoke parameters, as per guidelines
- This new, fully automated system, facilitates real-time pollution data availability and is tamper-proof.
- The adoption of new system, aimed at targeting the has seen resistance from the stakeholders.
- Change Management activities were taken up to ensure its effective implementation, which included handholding and training of the stakeholders including Device manufacturers, PUC Stations, RTO officials, state departments

and various other stakeholders

- Awareness was increased around the features, along with the objectives like transparency, efficiency, convenience, etc., to be achieved through the application.
- Garnered support and timely intervention from departments, Ministry and various senior officials
- Most importantly, the dedication and perseverance from the team, for time bound implementation of the project

Majority of the challenges have been addressed- effecting roll out of PUCC across 13 states/ UTs.

Value Indicators

Learnings for Sharing

PUCC application has evolved through a process of learning, changes and enhancements in the last 10 months.

The process of implementation in different states, various new requirements, situations, issues etc. has provided a rich learning experience and multiple opportunities – which has made the product more robust and richer in terms of features, functionalities and security.

Key Challenges encountered and overcome during the project implementation, are as follows:

- Transition from the distributed PUC stations to one centralized web enabled PUCC system
- Change management - resistance in PUC stations for adopting new system, as it implied investment of efforts. Also, there would be compromise on vested interests, as its implementation would bring in transparency, helping curb malpractices.
- Meeting continuous & high demand to generate certificates efficiently
- Customisation of application to state specific rules/ processes/ policy
- Handling infrastructure sizing/ number/ model (cloud/ hardware) issues, on-the-go, to avoid performance bottle-necks in the system

Digital Empowerment

- Renewed focus on the increase in the transparency and accountability in the system. Although there is a lot of ground yet to be covered, in most cases, citizens are facing less hassle in getting their services. Leakages in government revenues have substantially reduced and overall environment in most of the RTOs has become more transparent and citizen-friendly.
- Centralised monitoring of individual PUC stations and PUC devices.
- Citizen, and all other stakeholders' concerns have been incorporated in the system to make it more user-friendly and transparent.
- Option to citizens to carry out a major part of the transactions involved in all

processes from the comfort of their homes and need to visit RTOs only. No foot fall at RTO office is required.

- A large bouquet of digital payment options (multiple options like Net Banking, Card Payment, PoS Payment) have been incorporated in PUCC 1.0 as per state's requirements. Specific payment gateway/ Integrator/ Cyber-Treasury as per state's specification have been integrated to facilitate payment-enabling anytime, anywhere payments
- Integration with various stakeholders in the ecosystem, to facilitate easy data sharing.

Green Governance

- The genesis of PUCC application is principally based on ensuring the movement of only environment friendly/ pollution compliant vehicles on the roads.
- It has facilitated a robust and efficient pollution control mechanism, aiding green environment.
- PUCC is a completely work-flow based application. Less paper work in RTOs, as well as availability of online MIS Reports, have further warranted curtailing of inter-departmental and intra-departmental paper usage.
- New facilities for uploading of documents (required for proof of address, identity, purchase, transfer, etc.) will ensure further reduction in the need to take and store paper documents for statutory purpose.
- The registration and renewal process are completely online. So are the payments, being done through ePayment modes.

The application is deployed in Cloud environment (VM provisioning from the National Data Centre of NIC) with minimal requirement of dedicated infrastructure/ hardware, and thus ensuring reduced carbon footprint.

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Department of Transport Portal

Government of Goa

Rajan Satardekar, Satesh Redkar and Prashant K. Thete

Project Overview

Department of Transport, Govt. of Goa has revamped their portal in April 2018. Accordingly new services are offered for the convenience of the citizens.

Following tax/fee payment services are offered to the citizens registered through portal.

1. Road Tax Payment
2. Passenger Tax Payment
3. Check post Tax Payment
4. Counter signature Fee Payment
5. Bulk Road/Passenger Tax Payment
6. New Permit Fee Payment
7. Cess Fee Payment
8. New Rent a Bike/Cab License Fee Payment

Besides these, various online services with respect to Vehicle Registration, Driving License and Permits has been linked through the portal. Hence now this portal is common point for availing all Transport Related Services in Goa.

Additionally, information disseminated through portal includes Notifications/ Circulars, Acts/ Rules, Citizen Charters, Court Orders/Judgment, Tender & Schemes, Fee and Penalty details, Download Forms etc.

Also in order to monitor the implementation of Vahan4, Sarathi4, eTransGoa& Portal Payments department authorities has been provided with Dashboard to view the statistical information.

Besides these, tailor made Content Management System (CMS) has been developed for the portal, so that department Web Administrators can dynamically update the Web Contents. CMS provisions include New Addition to website Sections/Tables. Modifying the existing Contents and Enabling/ Disabling or Reordering/Shuffling.

Benefits of Portal

1. Public can now download and share various forms free of cost from the portal.
2. Online tax payments help citizens in making hassle free and secure payments.
3. Various online services linking helps public to apply for services online. This has further resulted in remarkable reduction of public crowd at RTO office premises.

4. Flexibility in payment of passenger tax from a period of 1 month up to a year helps transporters to make payment in advance.
5. Counter Signature and Check post Tax payment facility helps Other State Vehicle transporters to pay online without needing to visit the Regional Transport Office or border Check posts.
6. Easy and safe bulk road/passenger tax payments feature for bulk vehicles helps bus/travel & tour operators to do the payments through single payment.
7. 20+ categories of new permit applications can be submitted online with end to end service integration.
8. It is possible to track all payments transaction history anytime.
9. With the use of CMS, department can now dynamically add/update circulars, notifications, govt. schemes, tenders, fees & penalty etc to Web Portal.
10. Through “Dashboard”, Department authorities can view and monitor transactions related to Vehicle Registrations, Permit and Payments.

Key Aspects

Online tax payments are 24x7 services with increase transparent, security and convenience to the general tax payers.

Online tax payments triggered remarkable reduction in public visiting the Regional Transport Offices for making various payments. This in turn has helped the department to use its employees to perform other vital tasks.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Yearly road tax for commercial vehicles	Yearly road tax payments of commercial vehicles plying on road in Goa	-	-	Count: 5280 Revenue: ₹2,62,62,724
Monthly passenger tax commercial passenger vehicles	Monthly passenger tax commercial passenger vehicles	-	-	Count: 2529 Revenue: ₹ 83,29,703
Bulk road/passenger tax for commercial vehicles	Road tax/passenger tax of commercial vehicles paid in bulk	-	-	Count: 41 Revenue: ₹ 1,88,99,020
Other online tax payments	Counter signature & check post tax payments	-	-	Count: 60 Revenue: ₹ 2,30,263

Implementation Coverage

As planned all primary requirements were achieved before the re launch of Department of Transport portal on 09th April 2018.

New Services / Enhancements

Improvements in last one year: In addition to bulk monthly passenger tax payment, bulk road tax payment feature also is implemented on the basis of public demand. Admin dashboard is integrated for department officials to track online payments & to generate MIS reports. Besides these pendency related to Vehicle Registration, Permit, Prosecution Challans can be monitored using the portal dashboard. Also Content Management System (CMS) is also integrated with portal to dynamically update the website content by the Portal Administrators.

Action plan for next one year: Development of mobile app which will offer handy payment services to the citizens.

Enablers

Process Reengineering

Prior to the launch of dynamic portal by Department of Transport in April 2018, tax payments of all the commercial vehicles were only allowed at RTOs. These had resulted in chaotic situation at RTO tax payment counters. With the introduction of tax payment services through portal, tax payers has the convenience to pay the taxes online without visiting the RTO Offices.

Flexibility in payment of passenger tax from a period of one month up to a year helps transporters to make payment in advance. Besides these Counter Signature and check post tax payment facility help Other State Vehicle transporters to pay online without needing to visit the Regional Transport Office or border Check Posts. Also it is possible to track payment transaction history anytime.

Technologies

The application development was taken up by a very small team and the requirement varied drastically during the initial days of discussion and development. The timeline was strict and target to achieve was more. If not for IoT, it wouldn't have been possible to achieve the target in time. The challenges during the software security audit could be tackled with online knowledge base available.

People

Director of Transport, Goa with the help of NIC Goa planned to revamp their official website. The aim of the department was to mark them first in Goa to go completely paperless and less of public contact. Setting out with the web portal towards this, the management of change was mostly looked after by the department technical officials. During the re launch portal publicity was done through various media's and public were informed to avail online payment services offered through the portal. Hence with confidence of a fool proof web-app and 24 * 7 support during the initial period, public widely accepted the portal in short time due to the ease of use and

convenience of doing transactions. Now the system is fully stable with many tax payers preferring to pay online which has helped in achieving the target set.

Value Indicators

Learnings for Sharing

Gathering and finalizing the software requirements is always a challenge given the administrative and management changes that occur more often than not in most state departments. Being proactive and having the department known about what potential the product can have if built the right way is major to any application development. This project intensely depends on the central system of Vahan and Goa's very own government online e-Challan payment gateway. The close coordination, communication, data and document sharing and round the clock support were key factors in conceptualizing this system.

Digital Empowerment

The targeted stakeholders of this application are the commercial vehicle owners, transporters & public sector companies of Goa and neighboring states who enter the state of Goa. With the rising number of website visitors and online payments it is understood that the primary stakeholders are highly active in the system. As a next milestone Department of Transport is planning to set up Transport Service facilitating centers throughout the state.

Green Governance

Being an online service with end to end integration, the primary step towards Green e-Governance is achieved by cutting down on the payment receipts printed. All the receipts can be viewed and downloaded at any given time and various tax paid details are updated with the primary vehicle details on hourly basis without needing the individuals to visit RTOs carrying the payment receipts.

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Litigation Management System

Punjab & Haryana High Court

Baldev Raj Mahajan, Himmat Singh and Deepak Bansal

Project Overview

Key Focus Areas

Number of cases are pending before the Hon'ble Supreme Court, High Court and other District Courts and Tribunals etc, wherein State of Haryana is either party (respondent or petitioner). All the departments are required to monitor their respective cases from time to time and need to file reply/counter in Court wherever required. On passing of an order/judgment by the Hon'ble Courts, the department is required to comply with the directions, so issued, within the given time frame.

In case, the order or judgement is not complied with by the department or if petitioner is not satisfied with the action taken by the department, the petitioner approaches the Hon'ble Court by way of filing Appeal or Contempt proceedings against the department. Non-compliance of orders passed by the Hon'ble Courts within the time prescribed by the Courts is the major cause of filing/increasing Contempt petitions against any department. With a view to curtail the filing of contempt proceedings, the State of Haryana identified some of the key/grey areas inviting unnecessary delay in in complying with the directions of the Hon'ble Courts, as follows:

- Sometimes receiving of notices by the departments just before a few days from the date fixed, creating problems for the department in preparing for appearance and filing reply.
- Departments were not facilitated with the online monitoring mechanism for Court cases in the absence of which it was very difficult for the department to categorize and identify the nature and status of court cases, resulting in non-filing of timely reply by the departments, further resulting in delayed decisions by the Courts. Moreover, court cases were not disposed in an expeditious and efficient manner.
- Departments had no online mechanism for monitoring the compliance of Court Order/Judgment . Due to lack of proper monitoring, on occasions, the department misses the compliance deadline, resulting in generation of contempt proceedings.
- A centralized system was missing, lacking co-ordination and monitoring at Branch level/Department Level/ACS Level.
- It was very difficult to identify the actual respondent without going through the paper book (Copy of Petition).
- Departmental officials were required to approach the Court personally requisitioning paper book (Copy of Petition). It was also a time consuming process.

- Departmental officials were required to approach the AG Office personally for vetting process. It took number of visits for a final vetting.
- Department was not getting any reminder via SMS or Email or any other online mode for filing of reply or complying with the directions issued by the Court.
- Before LMS implementation there were constant hindrances and laches in the Litigation Management due to which Justice was delayed.

Scope

Stakeholders

- **Top Level Management (Hon'ble CM /Advocate General Office/State Nodal Officer Etc.):**
 - Assigning cases to all departments.
 - Creation and Management of Admin Users of all departments.
 - Monitoring of Data related to all departments.
 - Master Data Management related to Courts.
 - Dashboard Monitoring
 - Hon'ble Court-wise
 - Department-wise
- **Chief Secretary and Additional Chief Secretaries :**
 - Assigning cases to respective departments.
 - Creation and Management of Admin Users of all assigned departments.
 - Monitoring of Data related to all assigned departments.
 - Master Data Management related to Courts.
 - Dashboard Monitoring
 - Hon'ble Court-wise
 - Department-wise
- **Departmental Nodal Officers :**
 - Assigning cases to respective branches / Sub Users.
 - Creation and Management of Branch Users of all departments.
 - Monitoring of Data related to their respective branches.
 - Helpdesk for complaint / requirement / technical issue / suggestion / paper book request / any others.
 - Dashboard Monitoring
 - Hon'ble Court-wise
 - Branch-wise
- **Branch Level User:**
 - Entering the Cases related to the respective department.
 - Entering the Proceedings for each case.
 - Entering the Judgment Details for each case.
 - Entering the Contempt / Appeal related data in LMS.
 - Helpdesk for complaint / requirement / technical issue / suggestion / paper book request / any others.
 - Court-wise Dashboard Monitoring at Branch Level.

Key Aspects

Litigation Management System is only of its kind of application for Government of Haryana which provides the regular monitoring and alert regarding court cases related to the Government departments/Boards/Corporations.

It is automated module which is integrated with Punjab and Haryana High Court for cases updation.

This application provides a single platform for monitoring of departmental court cases across the state of Haryana which helps in reducing unnecessary delay in departmental action in such cases.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise
		2019 (till date)
Case Uploading	No. of Case Uploaded during the Year	Hon'ble Supreme Court-5964 Hon'ble High Court-110993 Trial/Tribunals/Distt.Courts-248762
Alerts regarding Court Case	Timely SMS & Email Alerts for Reply Filing, Judgement Compliance and Next Hearing	No of Email Alerts-348403 No of SMS Alert-491928
e-Vetting Transactions	e-Vetting of reply reduces the no of visits to the AG Office	5213
Paper Book (Copy of Petition) provided	Online Service for availing Copy of Petition	2693

Implementation Coverage

- Daily 2200 + Logins are made, which ascertains that how much LMS is useful for the departments
- So far 2693 High Court Case Paper Book (Copy of Petition) Requests have been made through LMS in Last 10 Months.
- LMS Users get Timely intimation through SMS/Email for reply filing and judgment compliance (Starting 15 Days Before due date) which leads to reduction in contempt cases.
- LMS has reduced no of unnecessary visits to court only for Paperbooks.
- 5213 (79%) vettings done so far through e-Vetting module.

New Services / Enhancements

Features Provided

- Automatic Case Status and Next Hearing Date Updation from High Court Server.

- Reports and Dashboard Department Wise/Branch Wise/Court Wise for all cases related to Government Of Haryana.
- Direct Case Marking from the AG Office to the concern Department.
- Availing Copy of Petition on just a online request by generating online ticket.
- e-Vetting Module of LMS Application allows departments to complete Vetting process online without repeated visits to Advocate General Office which in-turn saves time and money.
- LMS has devised an online mechanism via which the disposal of litigation has become more efficacious.
- Categorisation and proper monitoring of litigations of all departments/ boards/corporations.

Future Plans

1. Integration with Hon'ble Supreme Court.
2. Integration with District Courts of Haryana.
3. Integration with Jails for Generating online custody certificates.
4. Provision for Advocate Engagement/Empanelment with Court Cases for Board & Corporations.
5. Provision for Payment Monitoring for each Advocate by all Board & Corporations.
6. Change in User Interface for Mobile View.

Enablers

Process Reengineering

- Increased transparency for the departments.
- Ensure Effective Management
- Help in Speedy Justice Delivery
- Avoid Unnecessary Litigation
- Ensure Implementation of Litigation Policy
- Reduced the number of visits by or to the departments.

Technologies

Application is developed using Open Source Web Technologies and Programming Language. NIC SMTP and NIC SMS Gateway are used for Email and SMS alerts sent to the Departmental Users regarding Court Cases entered in Litigation Management System.

People

All stakeholders got categorized for accessing Litigation Management System in different tiers .These users has different type of accessibility through their logins based on their roles.

1. **TIER 1 Users:** Hon'ble CM, Chief Secretary, State Nodal Officer are the users, who can view/monitor the status of Court Cases Related to All Departments of Govt of Haryana.

2. **TIER 2 Users:** All Administrative Secretaries are these type of users who can view/monitor the status of Court Cases related to Multiple Departments of Govt of Haryana.
3. **Tier 3 Users :**
 - (i) Each department has its nodal officer, who manages and monitors the respective departmental branches/office users across the state.
 - (ii) Each District has one District Attorney (DA), who monitors the Court cases related to each department in the respective districts. All DAs are required to reports to Director, Prosecution and Deputy Commissioner in their respective districts.
4. **Tier 4 User:** All Branches or Office Users, who can enter and monitor the cases related to their respective Branches or office only, comes under this Tier.

Value Indicators

Learnings for Sharing

Benefit to Government & Public

➤ Government

- Supervision of all the pending cases help in taking timely corrective steps.
- By reviewing the case status, proper categorization and monitoring; the pile up of pending litigation can be effectively reduced and the problem of pending litigation can be nipped from bud.
- Facilities like- Online case details, reply filling and compliance alerts via SMS, Online vetting, etc. saves the valuable time, energy & funds of the State Government in repetitive and wasteful activities.
- Coordination among Office of Advocate General, various departments, boards and District Court, High Court and Supreme Court have increased on various level like data sharing & monitoring.

➤ Public

- It is truly said "*Justice Delayed is Justice Denied*" but LMS have proved to be a boon not only for the Government but also for the General Public by propagating efficacious litigation management under a single online portal.
- This has fostered public faith in the justice system. The laches in the litigation is consistently monitored which results in streamlined efforts towards expeditious disposal of cases. This way general public gets timely justice.

Digital Empowerment

Litigation Management System is the online mechanism through which legal data can be acquired, assembled and stored under a single portal which makes the access more centralized and efficient. These are the ways via which LMS has proved to be a boon for the litigation management-

1. Organizing data

A Litigation Management Software allows users to keep all of this important information in one centralized place, which can be accessed instantly. Details like Updation and Processing of case status, Integration and data acquisition from

High Court database and making available Information on demand pertaining to court cases of all departments.

LMS is a Generic, integrated workflow based system which is implemented across Haryana Govt. The User Departments of LMS enter their cases to them in the system. This software is integrated with High Court for fetching out the data for cases related to the different departments.

2. Better communication

No crucial information is missed out since Litigation Management System help to bridge the gap between legal and other departments. For compliance SMS alerts are sent to the concerned officials. Moreover, there is mechanism for e-vetting which has significantly reduced frequent visits of department officials and which ultimately saved a lot of time & resources of the government.

In addition to this, important information, documents, notes, reports, etc. could be shared with other legal users to ensure minimum dependency and maximum time utilization. The system shall be web based and accessible over the net.

3. Case Monitoring & Categorization

The LMS is designed for departments, corporations, boards and other state bodies to monitor the status of the case related to them. It helps in marking the court cases to the multiple departments / branches / sub-departments.

Dashboard Reports for each individual Department Administrator/Branches as well as Monitoring Users is consistently maintained. Contempt Cases are entered and monitored by each department. This increases the transparency for the departments.

Statistical analysis/bar diagram of the cases entered, proceedings entered, judgments entered and contempt cases etc. is displayed at the home page. There is coordinated monitoring and data sharing between all the district courts, High Court and the Supreme Court.

4. Retrieving documents

When it comes to organizing a case, Law Officers usually need to start collecting all the information from various sources. Notes and contracts maybe in a folder on your computer, pleadings and briefs in a file on your desk, and all emails on your email system.

A Litigation Management Software allows users to keep all of these documents in one centralized place, which can be accessed instantly. From notices to replies, appeals, pleadings, orders, related judgments, other research material, important emails, etc. All these files and documents can be neatly stored within the matter and can be accessed from any location to help Law Officers.

5. Working mobile

A legal database is created online which could be accessed from anywhere and by the person who have the user name and password. This provides accessibility from any place and makes the litigation management efficacious.

Green Governance

Litigation Management System reduces the unnecessary replication/duplicate of data or court orders which minimizes the space occupied. No additional hardware or

equipment is required for using Litigation Management System. In fact LMS reduced the cost by e-Vetting process and also by providing paper book online.

Before LMS Implementation

No. of officials visited for Paper book	19200-21000 (Approx.)
No. of officials visited for Vetting	19200-21000 (Approx.)
Expenditure	1-1.5 Cr. (Approx.)
Expenditure Now	Nil

After Implementation

No. of officials visited for Paper book	Nil
No. of officials visiting for Vetting	2880-4200 (Approx.) (15-
Expenditure came down to	14.4-21 Lacs (Approx.)
Total Saving	81.6-84 Lacs (Approx.)

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India Code Information System
*Digital Archiving and Management Division,
National Informatics Centre, Government of India*

S. B. Singh and Surinder Kumar

Project Overview

Objective: As a constitutional democracy, State is bound to provide authentic, complete and relevant legal information, including transcripts of all laws to its citizens, free-of-cost and in easy-to-use manner with the following objectives:

1. All Acts and Subordinate Legislations passed by the Central Government, States/UTs Government, including rules, regulations, notifications and circular etc. should be made available on this portal
2. The data uploaded on the portal should be available in machine readable PDF format.
3. Navigation on this portal should be such that the complete law-making chain, right from the parent act to the subordinate legislations, is clearly visible
4. Created Nodal officer of respective ministry/departments of Central, State and UTs to upload and up-to date, authentic data on ICIS.
5. India Code Portal should be mobile friendly.

The Legislative Department, which works under the aegis of the Ministry of Law and Justice, has launched a mammoth exercise to make aware all Central and State Ministries to upload their legislative data to India code portal on regular basis.

The application URL is <https://indiacode.nic.in>

Scope

Geographical and Functional Scope

All Central and State Acts have been mapped with their corresponding subordinate legislations such as Rules, Regulations, Circulars, Orders, Ordinances, and Statutes. Further, subordinate legislations are mapped with the sections of the Act. India Code Portal can be accessible throughout the globe.

The salient features of ICIS are given below:

- User friendly search
- Metadata search
- Browse on various fields
- Filter Search
- Facet Search
- Highlighted Text Search
- Search subordinate legislation with Acts as well with each sections of the Act
- Generation of various kinds of reports

- Dashboard
- Mobile Friendly

Stakeholders

Stake Holders: Cabinet Secretariat, Delhi High Court, Amicus Curiae, Legislative Department, Ministry of Law and Justice, All Central/State and UT Governments Ministries/Departments.

Key aspects

India is the largest democracy in the world and has a powerful mechanism of law making. “Ignorantia juris non excusat” (ignorance of law is not an excuse) is a fundamental principle of Indian Legal jurisprudent. Each year numerous legislations related to different context in favor of nation and its citizens are passed by the legislature. To access authentic, updated, relevant acts and its related subordinated legislation is a herculean task for judiciary, lawyers as well as citizen of the country.

A natural corollary of this principle is that the State is duty-bound to provide legal information, including transcripts of all laws, to its citizens. However, there are number of private publishers and organizations who exploit the lack of access of updated such legislative document and publish all these as their copyrighted work. To overcome this lacuna, NIC has developed India Code Information System (ICIS), a single point digital repository of all existing Central and State Acts and their corresponding to Subordinate Legislation such as Rules, Regulations, Notifications, Circulars, Orders etc. with the coordination of Legislative Department, Ministry of Law and Justice, Government of India.

India Code Portal has become the backbone for the Executive, Judiciary and Law Enforcement Agencies which provides authentic, relevant and complete legislative documents. This is an important step in ensuring legal empowerment to its citizens.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Provide Act Searching Service	User can search central acts on the respective page. This service provides auto complete feature to help the user in search.		890	865
Provide State Wise Act Searching Service	User can search state acts on the respective page.		554	6683
Provide Subordinate Searching Service	This service provide the features to search central acts related subordinate legislation and related data.		9775	18209

Implementation Coverage

- Uploaded 100% Central Acts which are enforced and 98% related subordinate legislations (rules, regulations, notifications, circulars) have been uploaded to ICIS.
- Hundred percent extractions of Section wise data of all Central Acts has been completed.
- Around 85% sections are mapped with subordinate legislation data for those Acts having subordinate legislation.
- It was planned to upload machine readable PDF files to ICIS, around 95% of files are in machine readable format.
- The website has been designed mobile friendly.
- Navigation has been designed to meet the criteria of law making chain right from the parent act to subordinate legislation is clearly visible.
- All ministries/departments of Central Acts have a nodal officer for uploading and maintaining data on ICIS whereas in case of State Acts, it has around 95% Nodal Officers.

New Services / Enhancements

- In last one year, there is significant improvement in terms of UI/UX. All central acts are visible section-wise along with mapping of subordinate legislation data.
- Around 80% Central Acts have been put into Parts and Chapters to display sections belonging to selected part/chapter to the User.
- Enhanced the searching capability of the ICIS. User can search section and subordinate legislation. Search has been designed in such a way that related mapped content will be displayed.
- We are planning of providing hyper linking to the various sections occurred in the text of section and will give a rich user interaction experience to the end user.

We will soon integrate the state amendments of Central acts in ICIS

Enablers

Process Reengineering

The legislative documents of the ministries and departments belong to Central and State Governments maintain the act and related subordinate in form of hard copy. As any act is being created or amended that part has to be added or deleted, that copy should be signed by the Hon'ble President of India. Then after when it comes to Legislative Department then changes are added to or delete from the original copy and new updated content will reprint and publish. And most important is that this content was not easily available to the public and judiciary related bodies. It was hard to find or related act related subordinate legislation because acts are belonged to Legislative Department while subordinate legislation belongs to respective ministries/departments.

The format of the data holding by the Ministries and Departments was totally in hard copy, it was the first major challenge in first development phase of ICIS. Another challenge was unavailability of acts related subordinate legislation at one place. And the most important challenge was how to make possible the easy availability and accessibility to the public.

ICIS standardized the format of persisting the data in machine readable PDF format as well. All uploaded act files on ICIS are properly section wise indexed and in machine readable format PDF file, so that a complete act can be accessible to the public in one file only.

Act and related subordinate legislations are now available at one place on ICIS, so that public must not to bother from where the act related content has to filter out or search.

Earlier, people were not getting updated act (e.g. amendments in act) after so many days of changes. ICIS makes a policy to update the modified/updated data on ICIS portal after 15 days of changes in act and upload related subordinate legislation with 15 days of releasing.

To make this process sustainable, two teams have been created, one at Legislative Department for checking, updating and maintain the consistency of the data and other at NIC HQ to provide technical support.

Technologies

ICIS is a search engine for all law related documents such as Acts, Rules, Regulations, Orders, and Ordinance etc. Process to develop a search engine for a specific context related data is a complete process of analysis of the requirement of end user and designing of the view that facilitate a smooth navigation throughout the content. It maintains the transparency to the public from its architecture. The architecture of ICIS consist of two components, one is responsible to update the data for ICIS and another component used by the public as search engine. As searching is the core feature of the D Space repository software package, therefore it has been customized, designed, developed in such a way that users may able to search Act, Rules, Regulation, Section etc. in user friendly way. There are number of challenges to develop ICIS a robust system. These are:

First major challenge was reformatted Acts in such a way that it should be more readable and easy to use for the public. Act files available in hard copy have been converted to machine readable PDF format.

Second challenge was to show act in section wise format so that public, judiciary body may able to see section content instead of PDF file. Therefore, all sections and related content has been extracted from the properly indexed PDF file.

Third major challenge was to upload, display of subordinate legislation related to Act. Therefore, module has been developed and integrated with ICIS application for uploading of subordinate legislation. This work of uploading the subordinate legislation is the responsibility of the concern Ministry/Department.

Fourth major challenge was to render section with related subordinate legislation. Whenever a section data is being rendered then related subordinate legislation is also being displayed, it will give ease use to the public and judiciary body. To avoid users not to go through individual subordinate legislation, a module was developed and integrated for subordinate mapping with section.

Using different types of available technology techniques and features, ICIS is equipped with the following functionalities:

- ICIS provides different filter to search more specific relevant content as per the requirement.
- Auto suggests is significant features of ICIS, which help to end user complete a search they are intended to do. Auto complete is striking useful features for handheld device users, making it easy to provide complete a search on small screen where typing is hard and time taken process. It's a time save all around.
- Data analytics provides statistics about the ICIS, number of new users, number of hits, number of page view, most viewed act, devices used, request from various search engines, countries wise hits etc.

People

As there is wide range of users and stake holders of ICIS. As per the software development standard, manuals were prepared and uploaded on ICIS application for the end users responsible to upload the data. To facilitate the further, a Help-Desk was set up to provide day to day help. To have interaction with end users, number of workshops, trainings conducted, in which hands-on sessions were given at NIC New Delhi and Legislative Department. Whenever new functionalities are being added in ICIS, provides awareness to the Ministries/Department officials. We conducted some training session to train the trainers as well to make them more knowledgeable with domain, functional and technical knowledge. In context of sustainability of the ICIS user's engagement, the afore-mentioned activities would be on continuous basic.

Value Indicators

Learnings for Sharing

ICIS has a different orientation in terms of domain, type of data, and presentation of data to the end user. It has given significant learning during the first phase of the project in handling the data stored in the PDF file; therefore, data can be easily available, readable, and searchable to the end user. To ensure that application contains only machine readable PDF files, a new feature has been added to restrict the user to upload improper file format. The content has been divided in hierarchical

structure up-to the level of section, schedule and subordinate legislation that will help the user in search and read any entity directly and also get related data.

Digital Empowerment

- ICIS has the collection of Central and all States/UTs related Acts, Rules, and Regulations etc. On ICIS State specific page has been designed where only that state related legislative documents will be available and also can be searched, so that the user may not face any kind of dilemma during the searching as all results will be related to that state only.
- If any user wants to see the State amendments in central of any other states, then user can get those details easily by searching the act related page.
- ICIS provides the facility for uploading content in other regional language. Some content is available in Hindi. User can also see ICIS home page in Hindi language as well.

Green Governance

- Paper less officer, less use of paper or reduce the user of paper is a significant step towards Green e-Governance.
- 49.8% of users using mobile and tablet, that emphasis on the use of less energy that reduce the power consumption.

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Integration of Police Patrols with Passenger Cab Services

Telangana State Police – HAWKEYE Mobile Application

Government of Telangana

M. Mahendar Reddy, K. Srinath Reddy and Navin Prabhat

Project Overview

Telangana State police is pioneering in terms of providing safety and security to the people of the state. It has excelled in the utilisation of technology in e-Governance initiatives and in introducing varied new-fangled ideas in providing safety and quality of life to its people. By leveraging the latest technology in providing safety and security to its people, Telangana State stood ahead of other states in the country.

The services of Ola, Tora, Prydo, Move & Synck, 112, Telangana tourism have integrated recently with the police services in providing safety to the people of the state. The main purpose of the police working in collaboration with the cab service providers is to discourage the occurrence of untoward incidents, subdue the crime with an iron fist, and to be easily accessible to the commuters in trouble/distress.

One of the major areas of concern in the society is safety during travel and especially for getting required help/support to prevent untoward happening/incident. The Telangana State police are at the forefront not only in utilising the technological services for monitoring & supervising the services of the cabs but also in protecting, providing safety and security of the people during the travel.

The travellers of the cab can connect directly to the police by using '**Emergency button**' in the cab services application which links to the HAWKEYE app of the Police. Once the Emergency button (SoS) is pressed, the latitude & longitude details and vehicle location of the traveller is passed not only to the police resources but also to the cab operators, and registered family members and friends. Once information is received, the police will respond immediately to protect the traveller in problem by continuously tracking the path of the vehicle. By this, not only the offender will be caught well before the occurrence of crime but also protect the traveller.

Backdrop for this Service Enhancement

The backdrop behind this integration is the emergency response system made available for the users of Hawk Eye Mobile app through the means of SOS option – Save Our Soul.

The prime objective of Hawk Eye Mobile app, to power public to be a citizen police by facilitating them to report any untoward happening, then and there without visiting the police station. – Evidence based reporting facility.

Besides the above said purpose, HawkEye mobile app provides, two key emergency police services for the women while they move outside, especially for working women. In order to ensure safety and security while they commute at any odd hours of the day, or at any instance when they suspect any immediate threat or emergency.

I. Women Travel Made Safe

The purpose of this feature is to ensure safe travel to women. The App provides the user

- Has an option to capture vehicle details while boarding
- The App automatically picks up the police station based on the location map to link
- Simple & Ease of use SOS button in case of any emergency / distress situations, initiates SOS process based on victim's current location with high priority alerts / alarms to the aforesaid police network

II. SOS

To the registered mobile numbers and more importantly send it to multiple points into the police network for tracking the mobile location and press into action.

User registers five (5) contact numbers to send standard emergency messages in case of any distress/panic situation.

SOS button is generated on the home page of the mobile menu. On a click of SOS button by a person, the app initiates the backend steps:

- Automatic standard emergency message sent to registered contact numbers
- Auto pickup of location (Lat/Long) with map link and emergency message information delivers into police network to the following officers to reach out to the incident spot:
 - Nearest GPS enabled Police Patrol Vehicle and field officers on their map enabled smart devices
 - Instant alerts to concerned Police Station Officer, ACP, DCP and Main control room
 - Status Update with Action taken to complete the SOS process
 - The Apps keep tab on the person movement and repeats the aforesaid process in case it crosses the police station jurisdiction.

Inspired by this idea of notifying the right concerned and the nearby police, when the commuters press the emergency service button. In an industry first, Move In Sync app was successfully integrated with Telangana State Police's Hawk Eye Mobile app, for one of the customers. When raised, the SOS alert reaches the nearest the Police Control Room and patrolling vehicle. The client confirms the initiative is proving beneficial owing to immediate action from Police. Move In Synch which was

founded with the intention of bringing technology to the employee transport process and addressing the demand for safe and reliable shared transport options.

Synchrony Financial in Hitec-City, Madhapur uses 'MoveInSync', a transport security solution which provides a GPS tracking and security alarms app for their transport service. In this regard Telangana State Police and Synchrony Financial have integrated both the applications to enable police to get immediate alerts and ensure prompt action to safeguard employees in need of help. Where the targeted beneficiaries are Hyderabad Living and operational area is limited to Hyderabad City Police Jurisdiction.

As soon as an employee in distress presses the SOS alert button, a simultaneous notification will be sent to the nearest patrol mobiles, concerned areas Police Inspectors, Assistant Commissioner of Police, Deputy Commissioner of Police and the Police Control Room. A predefined escalation matrix will be set by the in-house Security Team at Synchrony Financial. The application will also notify a three level escalation through SMS and email, if no action is taken on the complaint within the stipulated time.

Scope

Demographical scope:

An interactive Mobile based app which can be downloaded across the globe through respective.

App Stores – this is with respect to Hawk Eye app – to empower public to be a citizen police.

Now, the Move In Synck, OLA, TORA, PRYDO commuters have joined with Hawk Eye emergency response system, to make their journey much more safer.

– Integration of Hawk Eye Emergency Services – with the Cab Service Provider apps - regd.

Key Aspects

- A Freely Downloadable Interactive and Secured Android & IOS Mobile App for Citizens to directly contact Police Officials
- Can be downloaded from Google Play and IOS App Stores
- Innovative Solution for Instant Information Exchange and Immediate Response.
- Streamlined Work Flow Mechanism for internal Monitoring

- Apart from the above emergency response services, Aadhar Integration for checking Tenants and Utility service providers credentials

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
WOMEN TRAVEL MADE SAFE REQUESTS	A citizen friendly initiative to ensure safe travel to women. The following options to effective and ease of use of this Service by the User as: • Option to capture Vehicle details while boarding • Automatic pickup of police station based on Area selected • Simple & Ease of use SOS button in case of any emergency / distress situations, initiates SOS process based on victims current location with high priority alerts / alarms to the police net	3820	5475	8260
SOS alerts	User can create SOS button on home screen to use it on emergency. Once user clicks on SOS button Police Officials get the user location to track make a quick call to user registered mobile number. As on today 18980 SOS alerts were received from citizens.	5475	8030	10220
CRIME AGAINST WOMEN	Is the feature provided under Report a violation tab. To provide a hassle free platform to report the crime against women, directly to the polices	1896	2091	1388
REPORT VIOLATION	Report an incident, traffic violation, suggestion, or a request under this Service with a touch of a button, a Service Request (SR) is generated.	5866	12556	18909

Implementation Coverage

Initially when the project was launched: the targeted citizens were – Hyderabad Living. In terms of Women Travel Made Safe and SOS service options.

Later the results and impact that has been witnessed, laid a road map towards bringing these services available for the citizens of entire Telangana state.

By year 2018, the 9 Commissioner ate citizens have been facilitated with the citizen-centric services through the means of Hawk Eye Mobile app.

Now for the project is under review to set a uniform icon for police service delivery across the state. In the coming years the citizens of remaining 20 police headquarters can get this mobile service to opt.

Till date Downloads – Hawk Eye Mobile app: 22,38,467

New Services / Enhancements

Rollled out: To serve the current needs of citizens, in order to smoothen the way they approach the police to file a complaint, to make a suggestion, to verify about the suspicious objects noticed, to share it with the policing system and to notify the police officers about any immediate threat or emergency they face while travel.

***Vehicle and Mobile Search – In the year 2016**

This feature helps the citizens, especially when they are about to purchase a pre-owned mobile handset /vehicle.

To make the Citizen aware of the Crimes or Complaints associated with the article they want to verify. In order to make them impeccable and socially responsible, as the user searches for the data, user gets the dialogue box, describing the status of/ the ownership data of the article. Through the SHARE option provided, when the user Shares it, the Notification will be sent to the Police Station where a complaint might lodged against the article LOST / THEFT, by denoting the user details who made this search.

- To make the user a SOCIALLY RESPONSIBLE in tracing out the LOST /THEFT article, found to be suspected by the user.

***Job Connect – In the year 2017.**

Job Connect is a Community Policing Initiative by Telangana State Police for winning Hearts and Minds of the Community. Job Connect is a unique Process that connects and matches the skill set of unemployed youth to employment opportunities in the Micro, small and medium enterprises in Private Sector on a daily basis round the year under the auspices of A Joint Partnership of Telangana State Police and TMI Group. Is a Community oriented Policing approach – launched based on the felt needs identified.

***Lost Report: - In the year April, 2018**

Complaint on stolen or lost articles

Lost report is the service where users can raise complaint or a query on stolen or lost articles like mobile phones, cameras or documents etc. And Police will contact the user if the lost or stolen articles are found. And user can also check the status of the query with unique LR Number.

Earlier this service was delivered through a separate application, later this has been incorporated into HawkEye mobile application in the year 2018.

*** Integration of police patrols with passenger cab services (ola,tora,prydo). - on the 7th october of 2019.**

This service has been incorporated in the CAB Service Provider's application, by integrating the Hawk Eye SOS mechanism within their app through the emergency button service.

The main purpose of the police in working with coordination, collaboration of the cab services is to snub & control the crime with an iron fist and to be easily accessible to the Travelers.

The travellers of cab, in case of any issue shall connect directly to the police by using 'Emergency button' in the cab services application which links to the HAWK EYE app of the Police and adds more to operational work flow. Once the Emergency button (SoS) is pressed, the latitude & longitude details and vehicle location of the traveller is not only passed to the police -nearby patrol mobile, concerned area SHO, concerned ACP/Dy.SP, concerned DCP/SP but also to the cab operators control room and registered family members and friends. Once information is received, the police shall slog to protect the traveller in problem by continuously tracking the path of the victim. By this, not only the offender is caught well before the crime but also the traveller is protected.

Enablers

Process Reengineering

Number of processes- re engineered

- Streamlined Communication Process through Police Communication Network
- Emergency Responsiveness through continuous alerts; tracking and monitoring

Top three process changes effected:

Prompt responsiveness for an emergency situation

Assimilation of information for bias for action on violations reported by Citizens

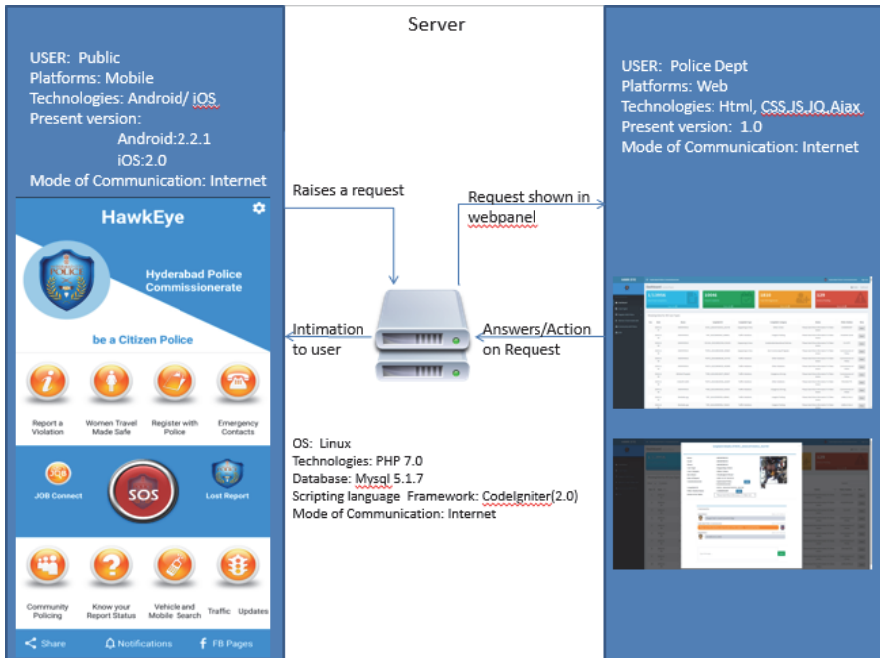
Streamlined and Transparent Policing

Technologies

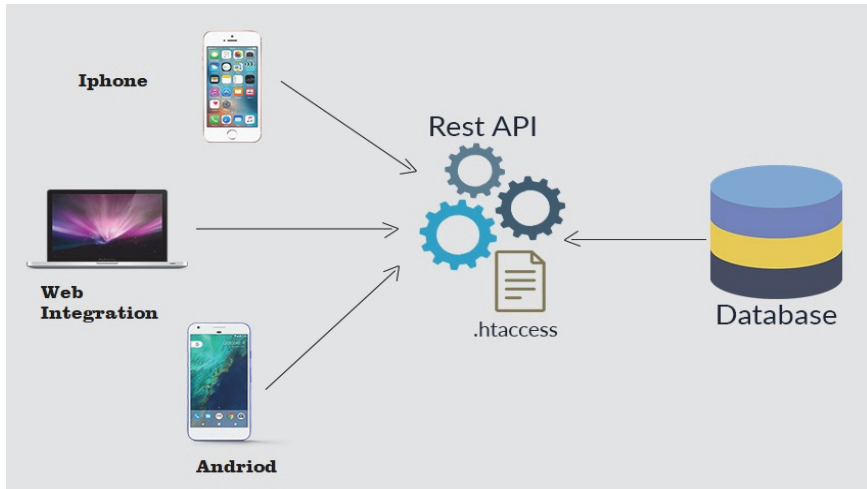
SOS (Save Our Soul) feature– Operational Flow :



High Level Architecture of HawkEye



How Mobile App Data and Third-party Integration Is Processed on Server End



People

(a) Description

- (i) Leadership support for capacity building, visibility of actions with current status
 - Project envisaged by Chief of Telangana State Police, Telangana State Police
 - Around 12000 Police Personnel have been trained on this initiative including all SHOs, Supporting Staff of all Police Stations, ACP, DCP offices, and District Unit Heads, SHE Teams, Patrol Mobile Staff and other direct / indirect staff involved in operation
 - In addition to the above, Telangana State Police have organized and been organizing various Community-Awareness training programs on using this APP at different Colleges, Private Organizations, work places etc.
- (ii) Change management and Capacity building strategy defined and status thereof
 - Regular Training to staff and conducting Awareness Campaigns on changes and modifications of this initiative.
- (iii) Project management & Monitoring adopted [whether full or part-time program management teams in place, roles and responsibilities of department officials/consultants etc]
 - A Team of 12 personnel deployed to work on full to monitor the complete work flow
 - Periodical review on the outcome and performance evaluation by higher officials
 - Response / Request Model analysis with respect to the efficiency and transparency

- A front end team for handling User Queries and extending Support to General Public
- (a) Financial model adopted [Source of funds, description of PPP if any, Total cost of ownership etc]
 - In-house, Department funds
- (b) Special efforts to ensure sustainability of the e-Governance initiative[s] [including but not limited to carrying out of third-party assessment[s] and implementation of their recommendations where feasible etc].
 - Monitoring of Citizen Feedback
 - High level analysis by Higher Officials in taking up some good initiatives mentioned by Citizens.
 - Regular feedback sessions and quality control checks
- (c) Challenges faced in Change Management and Capacity building
 - Initial resistance from the staff in adoption of the technology
 - Technology Fear factor was an impediment
 - Perception among the staff and fear-factor of Hawkeye App brings transparency and visibility of their own weaknesses
 - POLICE SERVICE QUALITY MANAGEMENT UNIT: As part of its endeavour to become a competitive and citizen friendly force, Telangana State Police has cast its focus on holistic development of its personnel by way of training, capacity building and knowledge dissemination. Laying out an outcome-based training mission to shape up the skills and persona of the force aligning with Global City standards. Also, in the wake of the deluge of technological initiatives, it becomes imperative to orient the force in the right direction.

The training and capacity building programmes have been modelled on international practices bringing the heady mix of pedagogy and practice. A concerted approach has been devised to identify and deliver proactive and need-based training sessions for the police force.

These will cover:

- ✓ Soft skills
- ✓ Man management
- ✓ Technological orientation
- ✓ Global and peer practices

Telangana State Police brings top-notch and professional trainers of high repute and has set up excellent support systems at State Police Headquarters to impart interaction-based training for all the verticals from the District Unit Heads till the Front-line Police officers of Station House.

- (a) The Lessons learnt from Change Management and Capacity building exercise[s]
 - Any initiative should have 100% commitment from the Top Executive as Project Sponsor to drive further down in the organization
 - Tracking and Monitoring the project by the Top Executive and Operational Management would help minimizing the delays

- Identifying the risks and mitigation plan under the guidance of the Project Sponsor and track them
- Define and measure Accountability at all levels in the organization for its success

Value Indicators

Learnings for Sharing

(i) Challenges faced in implementing Process changes

- Change Management is always a challenge for any process initiatives in an organization. Anticipating, the following challenges well in advance, Telangana State Police was successful in achieving the Process Change.
 - Choosing the Right Team
 - A Careful Step by Step Planning and identifying phases
 - Reality Checks
 - Going Live
 - Information Sharing and Creating Awareness among Common People to effectively use this APP
 - Training and Use of Innovative ICT Technologies among Department Staff
 - Timely Communication and resulting response.
 - Post Conversion
- A careful step by step planning and understanding of the process changes with a well-executed plan, proper communication and information sharing across the Department and envisaging the importance of using ICT tools to improve performance and provide timely and efficient citizen services, has made Telangana State Police to successfully implement Process Changes.

(i) The Lessons learnt from the Process re-engineering exercise

(ii) Training in BPR and teamwork are as important as technology training

(iii) Organization structure with Role & Responsibility has been defined

(iv) Awareness sessions and knowledge transfer programs organized to understand the responsibilities and process involved is the key factor for institutionalization of the App at a broader level

(v) Executive support is critical

Digital Empowerment

- The App is in English and most of the users comfortable in using this app. No cultural or language differences have been raised by any of the user till date.
- By the year 2018, the app services were made available for targeting the citizens of 9 Commission rate's.

Green Governance

- The objective is to achieve paperless office by minimizing the paper consumption without entry any content.
- The adoption of ICT equipment that preserves eco-friendly environment and reviews the power consumption.

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Third I: Enhancing Policing, Preventing Crimes using Digital Technologies

Commissioner of Police, Pune City

Bachchan Singh and Kovid Sawla

Project Overview

Third I Initiative started (since 2016 in Nashik City) with an aim to provide Innovative, Smart and Advanced Digital solution for “Real Time Crime Detection & Prevention” along with Pune City Police.

During the Initial phase, we performed Primary and Secondary research which included meetings with Police Officials, Police Inspectors, Control Room Operators, Patrolling Personnel, numerous field Constables and citizens while keenly observing work & practices in Police Commission e rate, Police Stations, Control Room, Crime Branch, Special Branch, Reader Branch, Cyber cell, etc.

With the mentorship from Police Administration, Third I Platform was co-created, piloted and deployed in the field and validated.

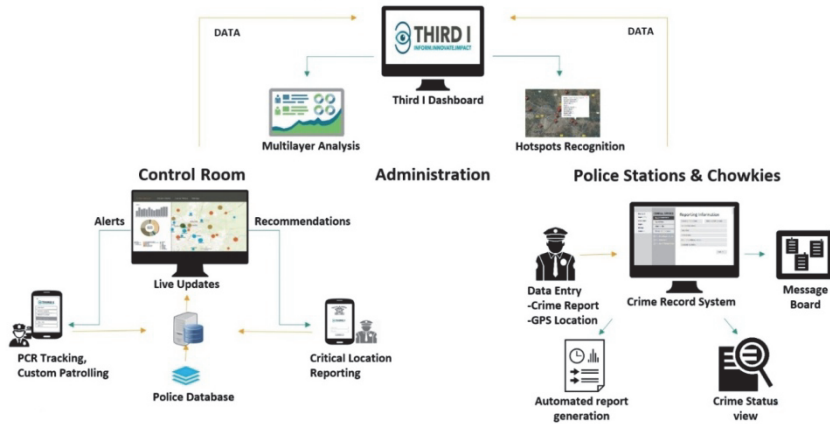
1. The most commonly visible issues are repetitive and heavy paperwork in the Police operation and the difficulty arises in sorting and retrieving them for different purposes. From these numerous registers, multiple reports, statistics, etc. are prepared and sent to different departments.
2. Apart from these, the most vital need & requirement of Policing is Rapid & Accessible Information Transfer & Retrieval, which is what we had kept in mind while designing Third I to provide an easy to use centralized platform which would cater to all the needs.

Users & Beneficiaries

Police Stations, Traffic Division, Reader Branch, Police Control Room & Administrative Offices PS/ACP/DCP/Other Senior Officers

- (i) Third I Information Management for Various Crime Forms & Reports for Police Stations of & Traffic Branch
- (ii) Statistics & Analytical Dashboard for Reader Branch, PS/ACP/DCP/Other Senior Officers/Headquarter for Senior PI and above Ranks (100+ users)
- (iii) Mobile Application for IOs, Administration, Office In-charge, Traffic writers
- (iv) Administration Panel for 1-2 Admin user to assist in user management at Police Headquarter

Based on the requirements and applications, technology & different user base we’ve created a solution architecture which depicts the flow of information of Third I platform



Scope

Stakeholders

Key Aspects:

'Third I' is aiming to solve the redundancies in regular Police Proceedings, the Information & Technological gap present in the current Police Administration, lack of Data Centralization & Analytics which subsequently hampers their ability to take Real Time Informed decisions. Third I also aim to improve and enhance Citizen Police Relationship by providing various communication channels.

Following are the value propositions and benefits of Third I

Automation & AI

1. Automated Processes & Report generations such as DCR, MCR, and around 15+ other reports, etc.
2. Alerts & Notifications of each FIR, AD, Missing and Incident on Mobile App
3. Directed Action, Optimal Allocation, and utilization of Police Resources (like the routing of Patrolling vehicles, establishing Chowkies at crime-prone locations, etc.)
4. Auto-identification of Potential Criminals based on place of crime and previous history
5. Considerable **Man-Hours Saved** (equivalent to 15+ people per unit) on a daily basis & Removal of Repetition of reports
6. **Tracking of unsolved cases**, prioritization & Enabling Informed Decision Making
7. Instant background check of any suspected person from e-courts connectivity feature

Information Management & Data Visualization

1. Centralization of all Data, easy retrieval & maintenance of crime reports
2. Real-Time Crime & Incident Reporting

3. Visual display of all the crimes on Google maps, Google Earth and other mapping services
4. Digitalization of duties in the form of QR Code/Custom Duty feature available in Android App
5. Convenience in Crime Meetings and further investigations due to Crime Detection feature
6. High standard profiling and geotagging of known criminals, accused and missing person
7. Tagging, Tracking & Monitoring of all the Muddemal (Logistics) using smart phone application & QR Codes.

Improved Communication

1. Secured Messaging Platform for Officers, Senior PI, and IOs.
2. Important Static Information and Contacts facilities in Mobile Application
3. Enhancement of working of Control Room, Receiving & forwarding Actionable information

Data Analytics & Predictive Policing

We've incorporated **multiple techniques and algorithms** for various analytics, prediction and recommendation based on past crime data to generate various Charts, Statistics and assessment, generate heat-maps, identify Crime/Accident Hotspots, Patterns, Recommendations, auto alerts system etc. which can greatly help decision makers to take directed and insightful action.

Following are the evaluations the system performs over the already filled data:

Crime Assessment

- Assessment & Prediction of Different Crimes based on different locations, Time & Duration wise occurrence, patterns, modus operands', the reason of crimes etc.
- Predicting Vulnerabilities in areas which are likely to be affected in future based on past crimes data, the population of the area, presence of police station, and personnel etc.

Victim Assessment

- **Identifying groups or individuals** likely to be a victim like crimes against women, crimes against children, Caste-based offences etc. based on repeated complaints and other factors
- **Identifying factors responsible** for vulnerabilities (like Caste, Socio-Economic Status etc.)

Criminal Assessment

- **Identifying Individual at risk of offending** based on past acts, profiles and records like repeat offenders or criminals on parole or freed
- **Digitization of all the known Criminals:** A digital repository can be maintained via Third I App & Dashboard in which all the relevant info of History Sheetter, Chain Snatcher, Various KCRs can be traced along with their photo and locations

- **Assessing factors responsible for criminal activities** such as unemployment, drugs, socio-economic conditions, incitements etc.
- **Keeping an eye** on all the criminals & Suspects

Improved Police Citizen Relationship

1. Visitor Management System for all the visitors in every Police administration offices like Police Stations, Zonal, Divisional offices and headquarters
2. All visitors receive SMS and email on entering consisting of a digital pass, and feedback form link, digital copy of FIR/Crime Report via link/email and Crime status in case he/she is complainant or victim.
3. Summons, Warrants and Digital system for Court activities Monitoring helps with better connect with citizens
4. Awards & Punishment based on citizen ratings will improve services and compliances of Police Stations
5. Citizen feels more empowered and connected

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
THIRD I MIS & Analytics	Automated Reports, Crime Data Analytics, Auto Alerts & Recommendations,	NA	NA	All 30 Police Stations, Control Room, Reader Branch with 100+ users
THIRD I Logistics management	Digital marking, tracking & monitoring of all the PS logistics (called Muddemal) in all the Police Stations, Courts and other administrative departments	NA	NA	All 30 Police Stations of Pune, Central Muddemal Department, Major Courts with 100+ Users
THIRD I Court Monitoring System	Digital & Automated Reporting of all the Court related information such as summons, warrants, judgements, acquittal, pendency etc.	NA	NA	All 30 Police Stations of Pune, respective Courts and Administration with 70+ Users

Implementation Coverage

In Pune City, THIRD I has been implemented in all the 30 Police Stations, Control Room, Crime Branch, Reader Branch, CMS & other relevant branches within the

Department as targeted in April 2019. Right now 3000 Police Personnel are on boarded with this system and we're targeting to include most of the proceedings & police participation in it to make most optimal use of this technology.

Overall THIRID I has been implemented in 4 Cities and 4 Districts in Maharashtra as listed below

- (i) Pune City Police
- (ii) Nashik City Police & Traffic Branch
- (iii) Palghar District
- (iv) Mumbai Railways
- (v) Raigad District
- (vi) Ahmednagar District
- (vii) Nagpur City
- (viii) Nagpur District

Currently, more than 9000 Police Personnel across 4 cities and 4 districts as mentioned above are using Third I and other modules.

New Services / Enhancements

1. Another Scenario of Control Room gives different concern, where Police operators have 3 very critical responsibilities:

- Keeping track of Patrolling Vehicles
- To attend emergency helpline calls
- Directing Patrolling and Police Personnel to attend emergencies and perform rescues

But doing all these tasks takes a lot of manual efforts and have other limitations. It's not real-time and other pain points exist like getting exact location of incidents, verifying authenticity, as information is generally provided orally. Therefore, a lot of manual guesswork is being carried out. Hence it is the right place where Technology can make a considerable difference.

The proposed Application for police will not only help the Control Room whose scenario is mentioned earlier but also the cops who patrol, file Panchnama, Custom Patrolling, GIS Information capture, analyzing traffic offences etc.

Enablers

Process Reengineering

- (i) Due to THIRID I, more than 15 of the daily/monthly proceedings has been transformed, and enhanced the system due to which work of more than 50 people is being saved on a daily basis. (e.g. Crime Reporting, Court monitoring, Smart Patrolling, Analysis etc.)
- (ii) The accessibility and retrievability of data has become very robust and easy thus enhancing overall system
- (iii) Due to visibility of all the Data, the decision making is now based on lots of Data and Analytics thus technology combined with human intelligence

Technologies

With THIRD I, we use Data Analytics, Data Visualization in our regular meetings & decision making, it has components of Automation & AI for helping the whole system work in a much better & robust manner.

People

THIRD I is being used by Detection branch officers of Police Stations to DCPs as part of their duty, it's creating a centralized system as well as redefining team work to create a positive change.

Value Indicators

Learnings for Sharing

The Third I Project conceptualized and planned with all the Sr. Officers, In-charges and number of field personnel jointly. Step by step training and refreshing those training sessions in regular interval was the key for successful implementation of this initiative. Also modification based on actual ground feedback enabled us to improve at every level.

Digital Empowerment

The THIRD I Initiative has been started as an umbrella project to combine each and every initiative and moving forward with complete digital and smart transformation. We are aiming to make Pune Police as Paperless, Citizen friendly as well as most tech savvy department.

Green Governance

- (i) Paperless operation of the THIRD I modules has an objective to make Pune City completely paperless.
- (ii) Saving of paper in quantity of more than 1 lakh of A4 sheet per annum per unit due to procedural transformation.

Minimum Infrastructure requirement (only smart phone & desktop).

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PuneTrafWatch.com
(Pune Traffic Police's Data-Based Citizen Engagement Initiative)
Commissioner of Police, Pune City

Pankaj Deshmukh and Navrisham Kaur Grewal

Project Overview

Pune Traf watch collects thousands of images internally and processes them using a mix of techniques:

- (a) Maps every possible data set including live images, status, location, authority, date and time stamp for : Traffic Signages (Parking, Turn, Warning, Other Signages), Road Markings (Zebra Crossing, Parking, Speed breaker, Other Markings), Traffic Signals (Current, Proposed), Parking Spots (2 wheeler, 4 wheeler, PMC & Private Parking Lots), Traffic Violation Spots (Jaywalking, Signal Breach, Wrong Turns, Wrong Lane Entry, BRTS breach, Wrong Parking) and Civic Issues that directly or indirectly affect the Traffic Operations (Footpath Encroachment, No/Broken Dividers, No/Broken Footpaths, Bad Roads, Illegal Banners, Water Clogging)
- (b) Maps daily challans along with the geotagged location and images
- (c) Gives live information on maps containing roads closed, diversions, parking and no parking spots in case of events like Ganpati, VIP Visit as well as Flood situation like what recently happened in Pune in the year 2019.
- (d) Visualizes entire city's Live Traffic, Chronic issue spots in the form of a heat map and Accident black spots
- (e) Auto Suggests spots where Signages, Constables, Subway and Towing Vehicle required based on algorithms using data from points a and b above.

Ground data is the most important pillar around which traffic operations should be managed and till now, there was complete unavailability of ground data that maps all assets and issue spots along with their status and brings accountability of various city governmental departments in resolving issues that directly or indirectly plague traffic operations

No standard metrics existed before Pune TrafWatch for arriving at various indices to aid decision making and this is the reason why this project is paramount for all cities.

Citizens feel totally disconnected and feel a total lack of ownership in Traffic Operations which lead to a lot of criticism of city governmental bodies on social media platforms and media.

Key Aspects:

PuneTrafWatch.com, a one-of-its-kind Ground Data Analytics Dashboard with Map View, Image Gallery and Analytics section both for internal use by Pune Traffic Police and public consumption related to city traffic related operations has received

overwhelming response from the citizens. The first month post its public launch, it received 3,44,385 visitors and 17,56,004 page hits. It has received unanimously positive coverage from the media since its public launch.

Pls visit www.PuneTrafWatch.com for a live demo.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services for 2019-20
Challan Analytics	Geotagged entries of every single challan issued against the data and otherwise is available on the project url which when clicked leads one to the challan image and all other details.	60,000 per month challans issued and data displayed on the site for live result sharing and transparency to citizens
Event Diversion	The Event diversion button keeps changing depending on which event is there which hampers traffic movement for the citizens, say Ganpati, VIP visit, Floods and so on.	All 30 Police Stations of Pune, respective Courts and Administration with 70+ Users

Implementation Coverage

We started with key chowks and signals and moved coverage to all of Pune city limits within 2 months of the project launch.

We added new functionalities including challan i.e Action Taken mapping within 2.5 months of the project launch to establish high credibility for PuneTrafWatch.com. Due to high response received for Floods and Palkhi we ensured all the events small or big including Annabhau Sathe Jayanti, Dahihandi celebrations etc data of diversions, closed roads, parking and no parking spots were made live with detailed planning days before the scheduled event. We are in the process of mapping every data to the respective Traffic Divisions (you can check this feature work in progress by clicking on the Traffic Divisions button on punetrafwatch.com. We are adding a very important feature that will be restricted to internal planning by HODs, like Bandobast live planning to ensure visually the bandobast can be plotted to make the process seamless and effective.

We will be soon mapping Digging NOS onto this project to create an accountability matrix and ensure transparency in operations.

Enablers

Process Reengineering

Challan mapping was automated to ensure the citizens have access to the 'Action Taken' geotagged data on their fingertips to achieve credibility for Pune Traf Watch.

We made a standard process to map Event related diversions which included process flow chart, information sharing formats, assigning SPOCs internally and ensuring a proper social media plan to intimate the same to the citizens.

Technologies

Social media especially Twitter played a huge part in getting the citizen buy-in for Pune Traf Watch. Once the citizens saw the consistency with which the project was being executed, they started talking about the features and suggesting enhancements through product feedback instead of baseless criticism that had become order of the day.

Data processing is a complex process due to certain data categories that are being tried for auto tagging specifically traffic violation categories like wrong parking, wrong entry and so on. The learnings are being used to refine the process further to ensure the system becomes as effective as possible gradually..

People

Leadership support for PuneTrafWatch.com has been immense and the main reason why it got the traction that it got in a short time.

Capacity building is a likely challenge that will be addressed now as the systems get stabilized. We need to ensure sections like event diversions, digging NOC among others are fully automated to ensure scale.

Value Indicators

Learnings for Sharing

For one of its kind E-Governance projects such as Pune Traf Watch, it is imperative that a detailed study to understand key Citizen Pain Points is first undertaken and continuous feedback mechanism is developed to refine the features of the project.

Digital Empowerment

From our pre-launch study, we understood that for an effective public launch, it is very imperative to include regional languages of the city to ensure inclusion. While the internal platform was in English, we launch the public version in Marathi and Hindi as well.

We understand the following points are very critical to ensure digital empowerment in a meaningful way for Pune Traf Watch:

1. Openness Accessible and understandable language that can reach the general public and improve confidence in complex institutions.

2. Participation Quality, relevance and effectiveness depends on wide participation throughout the stakeholder chain.

Integration Policies and actions need to be effective: Objectives should be sent in a timely manner and they must be easily understood.

Green Governance

Implementing Green e-Governance is top of mind for the team while executing the project. A small example: We ensured some press notes during the media launch were given digitally wherever possible. For executive features such as event diversions, we ensure press notes are converted into digital notes that are then communicated through online mediums.

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Component based Web-HALRIS

Department of Revenue & Disaster Management, Government of Haryana

S. Vijayendra Kumar and Ghan Shyam Bansal

Project Overview

The **objective** of the project was to establish a component based Cloud enabled Integrated Land Records Information System in Haryana with real time internal & external Linkages.

Brief Overview

- The system of land titling in India is presumptive in nature and subject to challenge. The land title is not conclusive. Even if a plot of land or immovable property is registered in the name of a person, it is not sufficient proof that he or she is the actual owner. Registration means only a registration of a deed or contract, without implying anything about the legal validity of the transaction. A registered sale deed is not a government guarantee of land ownership. This implies that even bonafide property transactions may not always guarantee ownership as an earlier transfer of the property could be challenged. During such transactions, the onus of checking past ownership records of a property is on the buyer, and not the registrar.
- At present, in a number of Indian States, there is no single dedicated agency to handle property records and land records. The revenue department usually prepares and maintains the textual records, the survey and settlement department prepares and maintains the maps and the registration department does registration of documents, transfer, mortgage etc. Merging and integrating these functions is one of the principles for moving towards conclusive land titling.
- Haryana has carried out this administrative reform and has merged all these functions to a single agency. The Director Land Records in Haryana also holds the charge of consolidation, survey & re-settlement department and also the Inspector General of Registration Haryana. At the sub district (Tehsils) level, the Tehsildar functions as CRO (Circle Revenue Officer) when dealing with Land Records, He/she functions as Sub Registrar when dealing with property registration and also functions as Survey/re-survey officer when dealing with cadastral maps. He also holds the revenue Courts to settle the land disputes.
- Innovations in technology can help in making it easier to map, document and maintain records of land rights with greater transparency and at lower costs, backed with appropriate governance & legal reforms. In Haryana, as a technological mile stone, the web based integrated Land Records and Deed Registration software (named as Web-HALRIS) was developed, which covers integration of Jamabandi, Mutation, Nakal, Administration, Khasra Gridwari, Deed Registration, Deed Scanning, and Mutation Scanning.
- The pilot implementation of Web-HALRIS was started in Indri Tehsil of District

Karnal during June 2017 and the results were shared with NITI Ayog. The NITI Ayog appreciated Haryana's efforts and vision and Sh. Amitabh Kant, CEO NITI Ayog sent a DO letter to Haryana government on 2nd November 2017, which says, "NITI Ayog appreciates the initiatives undertaken by your State to improve the land governance in the state. Some of the states including your state are in advance stage of conclusive land titling, utilizing the DoLR (Department of Land Resources), Govt of India scheme of Digitalization of Indian Land Records Modernization Program"

- The Web-HALRIS has been rolled out in 65 Tehsils/Sub Tehsils w.e.f. 2nd April, 2018. The roll out across 100% Tehsils/sub-Tehsils has been planned by January 2020.
- The Web HALRIS has been integrated with a number of internal and external components, which are discussed below in the subsequent sub sections.
 - The State has implemented e-Registration system for online appointments, like in Passport/Visa Seva across the State. This system facilitates Issuance of Appointments for Deed Registration, online appointment through Internet, appointment through CSCs (Atal Sewa Kendras), and a provision of Tatkal Appointments. The implementation of RTSA (Right to Service Act) and FIFO (First in First Out) in registration of deeds has helped in bringing greater transparency and same day, time bound delivery of registered deeds. Now the average number of days for delivery of registered deeds in the state is less than one day.
 - The e-Stamping in registration of deeds has been mandated for all registrations across Haryana, with effect from 1st March 2017, having stamp value more than Rs. 100/-. State has also notified e-Stamping Rules 2017. The uniqueness of the system is that the property registration system verifies & fetches the details of e-Stamp and Government Receipt Number (GRN) number from Treasury server. After the deed registration, the e-Stamp and GRN number are defaced automatically, a unique facility of Haryana.
 - **e-Girdawari Mobile App has been developed**, which operates in integration with the Web HALRIS Software. User profile, login-based features for Patwaris provided in the App. The App requires minimum typing and can be easily used by Patwaris. The Training has been provided to Patwaris and other Revenue Officials. The Tablets has been given to all Patwaris for conducting e-Gridawari using these Tablets in all villages across the State. **The innovation quotient of the e-Girdawari App is that it captures GPS coordinates & image of Crop of field location, thus verification possible (Unique App).** The App ensures, actual physical presence at the field, this will help in reduction of compensation disputes.
 - The state has notified **e-KYC Rules 2017 for Aadhaar based e-Authentication** of buyers, sellers and witnesses. The State E&IT department is AUA (Authentication User Agency) of UIDAI. The CSC-SPV and BSNL of Govt of India were used as ASA (Authentication Service Agency). The e-KYC was started in all Tehsils across Haryana. The roll-out of project is now on hold, for want of policy decisions on Aadhaar Act. Once the Aadhaar Act & policy

are finalized by Gol, with e-KYC of Buyers and sellers, the state shall initiate the process of removing the mandatory requirement of 02 witnesses

- **Capturing PAN and on-line verification of PAN during Deed Registration:** The deed registration component of Web HALRIS has been enhanced to capture PAN. For online verification of PAN, state Revenue department has tied up with NSDL (National Securities Depository Ltd.). The document signer and DSCs (Digital Signatures Certificates) has been got procured and registered online on the NSDL Portal for availing online verification of PAN. After receiving the approval from Income Tax Department, login-Ids and passwords provided to SROs for online PAN verification. The online PAN verification service has started in all Tehsils.
- **Integration of Area Under Section 7A of HD&R Urban Areas Act, 1975:** The Software developed in consultation with state Town & Country Planning Department, as per the Haryana Development & Regulations of Urban Areas Act, 1975 and integrated with Web HALRIS, to meet the requirements of obtaining NoC under section 7-A of the Act, *“purporting to transfer by way of sale or lease any agricultural land having an area of less than two kanals in an urban area, as may be notified specifically by the Government, from time to time for the purposes of this section”*, before the deed registration. The department has entered all Khasra numbers, falling under the Act. The Web HALRIS, seeks NoC, before proceeding further for all such registries. The service has been rolled out in all Tehsils of Haryana.
- **Linkage with Revenue Courts for land disputes:** State has implemented a comprehensive Revenue Court Cases Monitoring System across all revenue courts, in the State. The court cases involving land disputes have been linked with the land records details.
- **Linkage with Civil Courts:** The system has also been linked with the judicial / civil courts for the cases involving land & property disputes, as a part of the recommendations of Ease of Doing Business.
- The System has also been **linked with urban properties systems** of HUDA, HSIIDC, and Municipal Corporations.

Scope

The **scope & geographical** coverage included entire State of Haryana and entire population above 18 years of Age. The coverage extended to the globe for the persons/businesses interested in sale/purchase of Land & properties in the State of Haryana.

Key Aspects

The manipulation of revenue records hurts both rich and poor alike. The fact that this concern affects citizens very deeply and almost universally increases the importance of the management of land records and property transactions with utmost accuracy. To a large extent, the maturity of e-Governance in a state hinges largely upon the performance of land revenue administration, which is facilitated

by state revenue department through maintenance of land records, registration of property transactions, updating of records through mutations and Cadastral maps.

The Department of Revenue and Disaster Management, Government of Haryana deals with maintaining and updating of revenue records, transaction by way of sale, mortgage, collection of revenue, consolidation of holdings, etc. The department also operates a large number of Acts and Rules, which have a direct bearing with the public. The department plays a crucial role in matters fundamental to the existence of the citizen. Any citizen can't be more concerned about anything other than land because it is his source of income, valuable immoveable property or a place of dwelling.

Haryana's Vision is to migrate from the existing presumptive land titling system to the conclusive land titling system, where the government gives guarantee of the land title. Innovations in technology can help in making it easier to map, document and maintain records of land rights with greater transparency and at lower costs, backed with appropriate governance & legal reforms. With this vision in mind, Haryana Revenue department has developed a complete integrated end-to-end solution Web-HALRIS, with NIC-Haryana as software development and technology partner, which includes registration of documents, Mutations, maintenance of Jamabandi records, e-Khasra Girdawari, issuing of copies of RoRs and integration with internal & external entities.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
e-Appointments	Issuance of online Appointments for Deed Registration. a provision of Tatkal Appointments. Hassle free Queue Management. Citizen can book appointment from anywhere.			7,68,393
e-Registration (Registration of Lands & properties)	Implementation of RTSA (Right to Service Act) and FIFO (First in First Out) in registration of deeds has helped in bringing greater transparency and same day; time bound delivery of registered deeds.	483559	580589	646733
e-Stamping in deed Registrations	Uniqueness of the system is that the property registration system verifies & fetches the details of e-Stamp and			4,22,894

Contd...

	Government Receipt Number (GRN) number from Treasury server. After the deed registration, the e-Stamp and GRN number are defaced automatically, a unique facility of Haryana			
e-Mutations Incorporated	For Hassle free Mutations, the RTSA time lines have been defined and implemented. The Patwari, posted at Web-HALRIS centre authorized to incorporate the Mutations through workflow process. The chasing of Halqua Patwaris time and again has been minimized.			4Lakh+
Issuance of certified copies of Records of Rights /Mutations/Khasra Girdawari	The citizen can apply online and receive the certified copy through speed post or on the counter at Web-HALRIS centre. The RTSA time lines have been defined one day.			10 Lakh+

Implementation Coverage

- **Roll out/implementation model:** The System was developed in house, through NIC - Haryana, by providing few software developers. The system has been hosted in the Haryana State Data Centre. The implementation model is in-house. The State of the art e-service delivery centres have been established in all Tehsils/sub Tehsils and all district mini secretariats.
- **Geographical Area Coverage:** There are 142 Tehsils/sub-Tehsils in the State. The earlier running client/server software has been migrated onto Web-HALRIS for 65 Tehsils/Sub Tehsils. The state wide roll-out shall be completed in next 3-4 months time. The components like e-Appointment, e-Registration, e-Stamping, e-Girdawarietc, have been implemented across the State.
- **Service delivery channels:** The e-Appointment, e-Stamping, Access to registered deeds, Mutations and Records are right are accessible through Internet. The eMail and SMS service has been integrated. There is also a provision for sending the registered deeds through speed post, similar to Passport Seva.
- **Stake Holders:** All Government departments in G2G domain, all citizens of the State above 18 years of age. The coverage extended to the globe for the persons/businesses interested in sale/purchase of Land & properties in the State of Haryana.

New Services / Enhancements

Haryana is front runner state in integration of Property Registration with internal and external entities to facilitate EoDB (Ease of Doing Business), enhancing authenticity and security of data and bringing utmost transparency in the system. Delegations from other countries and other States of India visited Haryana to Study the Web-HALRIS and e-Service delivery.

1. The uniqueness of Haryana's Integration is that the e-System on-line verifies the ownership and share of the seller. It is not possible to sell a same piece of land, multiple times, without sanctioning mutations.
2. The system has improved the quality of service in Tehsils by reducing the total time taken by the Tehsils staff for registration. Now documents are returned same day to the public earlier sometimes it took weeks/months to get a registered deed.
3. e-KYC of witnesses along with the sellers and buyers has reduced the incidents of wrong identity.
4. On-line availability of Updated Nakal of ROR (Record of Right) to the public helps in reduction of litigations and frauds, as now it is not possible to sell a same piece of land to multiple parties/peoples.
5. The system has also reduced the 47-A cases to a considerable extent. It was a common practice to register an undervalued deed then the parties were getting it impounded by the Tehsildar. Later on people were able to get the deed back by paying bribe or small amount of fine.
6. System has also reduced the mutation pendency to great extent as in online environment one cannot sell the land without doing the mutation. So this has stopped the practice of doing the deed registration on the basis of registered deeds.
7. System has also helped the patwaris in the preparation of new Jamabandis, earlier it takes months to prepare and check the new Jamabandi now it is the matter of 10-15 days only.
8. There has been very significant increase in revenue collection, due to the close monitoring of the system implementation, even though, during last two years, there has not been any significant increase in number of transactions and on the other hand there was stagnation & a declining trend in real estate sector.

Enablers

Process Reengineering

Extent of Process Re-engineering: Following Processes reengineered

- Prior online e-Appointment for Deed Registration, like in Passport/Visa Seva, Provision of online Tatkal Appointments
- Standard Deed Templates provided online for 22 type of deeds, User can self-prepare deed or can get deed prepared through licensed Deed Writers
- Draft deeds can be uploaded online. Same day delivery of Registered Deeds as per RTSA

- Online PAN Verification
- e-Authentication (e-KYC)
- Integration of Area Under Section 7A of HD&RUA (Haryana Development & Regulations of Urban Areas Act) Act 1975 & amendments 2017 with Deed Registration.
- Structured Collector Rates , Segments wise, Prime Khasra numbers integrated in Deed Registration
- Integrated work flow for automation of Jamabandi (RoR) & Mutation processes.
- Dynamically integrate Deed Registration and Land Records for Agriculture Land.
- Tablets based e-Girdawari
- Tie-up with CSC- SPV for Citizen Services
- Integrated with Antyodya SARAL Platform for citizen service s
- Integrated with Revenue and civil Courts for cases having land Disputes
- Services notified under Right To Service Act

Technologies

The architecture of integrated Web-HALRIS is shown in Figure 1 below

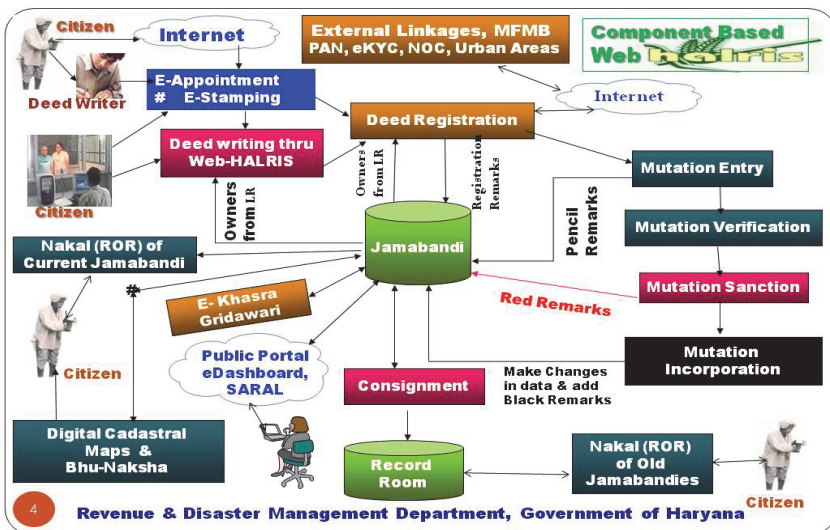


Figure 1 Architecture / Workflow of Integrated Web-HALRIS

The e-Dashboard for data Analytics and MIS provided to all DCs, SHQ and Revenue authorities. A web portal has been implemented for reporting system related complaints & grievances. The Citizens can raise their complaints/grievances through Antyodya SARAL Platform, e-mail and messaging services, CM Window and on CM Twitter also. Regular reviews through Video Conferencing. The external projects/applications like PM Kisan Samman Scheme, Meri Fasal Mera Byora,

e-Kharid, e-Bhoomi, Govt land Portal, Revenue & Civil Courts, e-KYC, PAN verification etc. have been linked through open APIs for data sharing.

People

- **Communication and dissemination strategy and approach used:** Trainers training at SHQ. The revenue officers were trained through DIOs of NIC and using Video conferencing. Real time dashboard was developed. All communications are through e-Mail and messaging. The regular Patwaris, clerks, Revenue officials were trained. The computer operators and technical supervisors were hired through out-sourcing by District IT societies.
- **The project is owned by the top leadership.** The data generated to share on CM's e-Dashboard. The Administrative Secretary Revenue takes regular reviews with Divisional Commissioners, Dy. Commissioners and District revenue Officers through Video Conferencing. The physical divisional reviews are also taken with revenue officers.

The e-stamping has been mandated, there is no manual registration of deeds, and manual interventions have been removed in the workflow processes. The Photo of Sub Registrar is also captured along with the buyers and sellers,

Value Indicators

Learnings for Sharing

- Challenges Faced
 1. The earlier system was running in distributed mode across 142 Tehsils/Sub-Tehsils and hence was difficult to maintain/support. The Software based on client/server technologies, were not very efficient, in current cloud based scenarios. Multiple databases were being maintained at Tehsil Centres. Security/ reliability/ maintenance of databases in distributed scenario were a big concern. Data quality issues like duplicate records, invalid/blank field values, inconsistent parameter values were a major concern.
 2. Although replication of data to HSDC was happening on periodic basis, it was not fool-proof and not real-time. Any modification in database or application logic was to be distributed across more 142 sites, which was difficult and error-prone.
 3. Tehsil - based staffs, particularly in remote/small places were not adept in taking backups or carry out regular maintenance. Distributed nature of a system, makes the maintenance and version control process a huge and costly proposition.
 4. There was no Single Sign On facility or common user management facility. There was lack of a cohesive, unified platform which can provide all services from a common platform. Common on-line facilities like MIS reports, general information, up-to-date real time dashboard etc were limited.
 5. Data migration from earlier client/server based system to Web-HALRIS, with 100% integrity and accuracy was a big challenge

- **Strategy Adopted**

1. **Details of base line study done:** The recommendations of Ease of Doing Business (EoDB) related to Land and deeds registrations were studied. The existing systems of Urban Areas (HUDA, HSIIDC, ULBs, Town and Country Planning), Agriculture and Revenue Courts were also studied, so as to establish linkages with Web-HALRIS
2. **Problems identified:** Earlier the System was running in client/server distributed mode. Although replication of data to State Data Centre was happening on periodic basis, it was not fool-proof and not real-time. The integration with external entities for facilitating EoDB was not easy.
3. **Roll out/implementation model:** The System was developed in house, through NIC - Haryana, by providing few software developers. The system has been hosted on Virtual Machines in the Haryana State Data Centre. The regular Patwaris, clerks, Revenue officials were trained. The computer operators and technical supervisors were hired throughout sourcing by District IT societies. The implementation model is in-house. The State of the art e-service delivery centres have been established in all tehsils/sub Tehsils and all district mini secretariats.
4. **Communication and dissemination strategy and approach used:** Trainers training at SHQ. The revenue officers were trained through DIOs of NIC and using Video conferencing. Real time dashboard was developed. All communications are through e-Mail and messaging.

Digital Empowerment

- **User Convenience (Improvement In Efficiency, Productivity / Reduction In Waiting Time)**

1. **Impact on effort, time and cost incurred by user:** The e-Services are notified under RTSA (Right To Service Act) Haryana. Escalation matrix implemented. Real time dashboards. Service delivery is as per RTSA. The service charges are defined, documented and displayed. No extra cost is incurred by users.
2. **Service delivery channels:** The e-Appointment, e-Stamping, Access to registered deeds, Mutations and Records are right are accessible through Internet. The eMail and SMS service has been integrated. There is also a provision for sending the registered deeds through speed post, similar to Passport seva.
3. **Completeness of information provided to the users:** Same day on the counter delivery of registered deeds. Mutations notices generated and issued along with the delivery of registered deeds. Complete work flow, service charges, registration fee and standard deed templates, documentation are provided in public domain.
4. **Accessibility (Time Window):** The Internet based components are accessible 24X7. The deeds registration components are accessible during 9.00 AM to 5.00 PM on all working days.

5. **Distance required travelling to Access Points:** Atal Sewa Kendras (CSCs) are functioning in all Gram Panchayats and all Towns. The Tehsil IT Centres are functioning at each Tehsil/sub Tehsil in the state. The distance travelled is up to 1 KM for CSCs and upto 20 KM for Tehsil IT centres.
 6. **Facility for online/offline download and online submission of forms:** The e-appointments and payments of stamps duty, registration fee are online. The e-Service requests and submission of forms are facilitated online and on the counter also (to facilitate the rural masses, farmers, labourers etc).
 7. **Status tracking:** Through Real time dash board, SMS, State's SARAL Portal
- **Efficiency Enhancement**
 1. **Volume of transactions processed:** During 2018-19; 7,68,393 e-Appointments were issued; 6,46,733 deeds were registered, out of these, 4,22,894 deeds were eligible for e-Stamping (99.9% deeds were registered through e-Stamping); 100% registered deeds were delivered. 4 lakh+ mutations were incorporated, 10 lakh+ copies of Records of Rights /Mutations/Khasra Girdawari issued from the IT system. The Registered deeds trend is shown in **Figure-2** below.

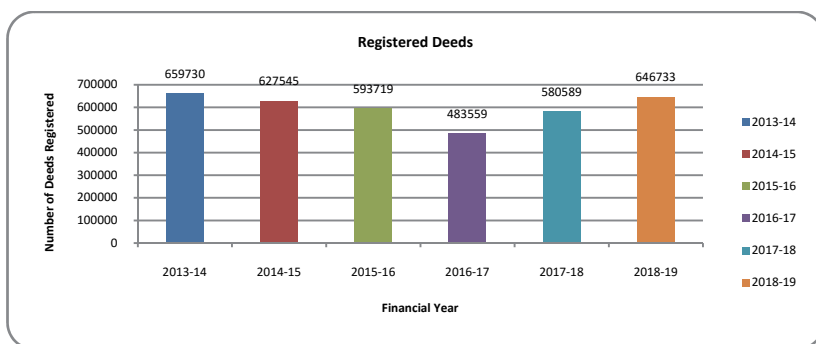


Figure 2 Registered Deeds during FY 2013-14 to 2018-19

2. **Coping with transaction volume growth:** The system is hosted on VMs (Virtual machines) and shared storage in Haryana State Data Centre. Keeping the future volume of transactions in view, high end compute and SAN storage has been procured and installed in HSDC, exclusively for Web-HALRIS.
3. **Time taken to process transactions:** The Transactions/Service delivery has been notified under RTSA (Right to Service Act) as one day. The registered deeds are returned same day. The average time taken is less than one day. The year wise average time taken to deliver a registered deed is shown in figure 3 below.

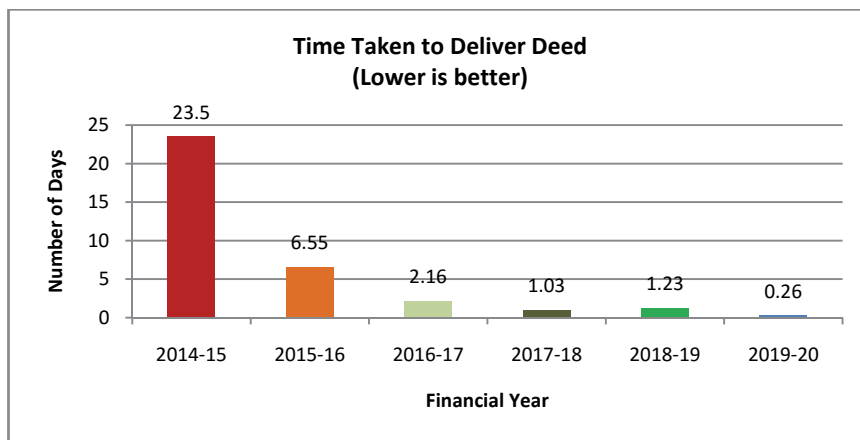


Figure 3 Year wise average days delivering registered deeds

4. **Accuracy of output:** All the documents delivered like registered deeds, Mutation, Records of Right, Revenue court cases judgments, Khasra Girdawari etc have legal sanctity in court of law. The accuracy level of delivered documents is up to 100%.
5. **Number of delays in service delivery:** Average days for delivery of registered deeds are less than a day. More than 97% delivery of the services are within the RTSA (Right to service Act) time lines. Most of the remaining 3 % are “under processing” category.
6. **Cost Effectiveness:** The solution design, development, testing, hosting and implementation is being done in-house in a highly cost-effective manner. There has been no out sourcing. Existing staff has been put on implementation. The e-services are delivered through a service charge / fee model. The Opex costs are incurred from the collected service charges.
7. **Financial Savings:** The collection of registration fee & stamp duty in the year 2017-18 was Rs. 4265.18 Crores, as compared to collection of Rs. 3260 Crores during year 2016-17, which is Rs. 1005.18 Crore higher than that of 2016-17. The collection in year 2018-19 is Rs. 5679.45 Crores which is Rs. 1414.27 Crore higher than 2017-18, even though there has not been any significant increase in the number of transactions and there has been stagnation and a declining trend in the real estate sector. The year wise Revenue collection is shown in Figure-4 below.
8. **Organizational Sustainability:** The trainers training are organized at SHQ, for the identified trainers from each district in person and through Video Conference. The further training to the operational staff, Revenue officers and officials from Sub Divisions, Tehsils, Sub Tehsils and district are organized at concerned district mini secretariat by the trainers. Regular capacity building through Video Conferencing has been introduced. The NIC-Haryana, as technology partner to the Revenue department, has deployed dedicated IT professionals for the design & development of IT solution. The department

has appointed a full time IT Advisor (Consultant) to guide the teams. The solution is hosted at Haryana State Data Centre. The regular staffs Patwaris and Clerks have been trained at field level and they are doing the implementation. All e-Services are being delivered under service fee self-sustainable mode. There is no dependency on State Finance department for the OPEX activities of the project. Therefore, there is long term organizational sustainability of the project.

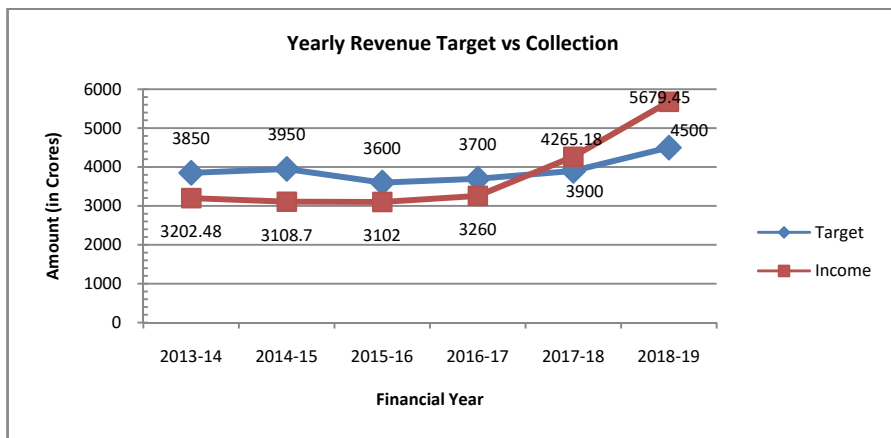


Figure 4 Revenue Collection during 2013-14 to 2018-19 v/s Targets

- Accountability:** The system defines workflows. The Revenue officers and officials at designated levels have been assigned clear roles and responsibilities. Role based user authentication and authorization has been implemented.
 The documents delivered have legal sanctity. The project implementation and eService delivery is the responsibility of Revenue officers/officials at various levels. The clear accountability has been defined under the RTSA Haryana. Real time dash boards and escalation matrices are monitored at the level of SHQ. For any delay in the delivery of service, in time, the responsibilities are fixed on the service delivery authorities and their operational staff. Appropriate action is taken.
- Adaptability and Scalability:** The system uses local language of State, which is Hindi. The system has been hosted on Haryana SDC infrastructure. The standard policies of SDC, as provided by NIC-HQ, MeitY are implemented. Some components of the project have been extended through Atal Sewa Kendras (CSCs), which are functioning in all Gram Panchayats and towns. Awareness campaigns, dashboards, display boards at each Tehsil/sub Tehsil. The system is component based and scalable. To integrate with any heterogeneous system, only web services / APIs are required.
- Replicability:** The system has capabilities of replication in each Tehsil/sub Tehsil as such. The system is developed in-house through NIC-Haryana; it

can be easily implemented in other states, through their NIC units, with some state specific customization. There are no restrictions in replication and/or scalability, even individual components of the entire system can be replicated and scaled up. The system has legal backing and it has been made mandatory to deliver the e-Services through this system only. The system is a centralized, web enabled and hosted at SDC Haryana with its DR at NDC Pune.

Green Governance

- Earlier System was running in client/server mode. The local servers were installed in a LAN at all Tehsils/Sub-Tehsils. After implementation of Web-HALRIS, these local servers and allied equipment's become redundant. The Hardware, which had lived its life, was replaced through e-Waste policy, buy back.
- Online submission of applications and scanned copies of documents helped in reducing the physical files volumes.

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PEARL
(Package for Effective Administration of Registration Laws)
Department of Registration, Government of Kerala

T. Mohana Dhas and A. Alexander

Project Overview

- PEARLSUITE is a web-based open source application for the department of Registration, specifically meant for the Sub Registrar and related offices of the department that offers various registration related services to the public. It deploys a public interface for citizen centric online service delivery, a content management web portal for Department of Registration and a web application as intranet for SRO functionality

PEARL is integrated with

- E-Treasury for all government receipts, enabled for over 25 Banks through Net banking, Credit/debit Cards, Rupay card, UPI card and integrated e-POS machines at SROs
- ReLIS Revenue Land Information System - Revenue web portal to automate mutation process after document registration
- Bhu Naksha Portal for updation of FMB post document registration
- UNNATHI CM Portal & DARPAN DM Portal - for projecting service delivery statistics and status

Major Citizen Services

- E-Stamp generation
- E-Submission of Document on e-stamp
- e-payment for Online services
- Fix appointment at SRO for document registration
- Automatic mutation on registration
- Online submission of applications for Encumbrance Certificate, Marriage Certificate, Certified copy, List Certificate.
- Online Gehan filing and release
- Online delivery of digitally signed Encumbrance Certificate (Cashless, Paperless, faceless)
- Online delivery of Certified Copies. (Cashless, Paperless, faceless)
- Auto generation of under valuation cases
- Decision Support System for Government
- Data sharing for Audit & Accounting
- Data sharing with Treasury Department
- Scanning of registered documents enables Village Officers for verification of document to update land records
- Document download enabled as part of Ease of Doing Business
- SMS services
- E-POS Facility

- Unicode based localization support
- Other features
- Automatic Document Generation & Endorsement at SRO with digital signature
- Online Registration of all Types of Documents
- Online Document Storage
- Accounts and reports
- MIS Queries
- Integration with Revenue Recovery Portal for under valuation cases

Major Stakeholders include

- General Public
- Advocates and document writers
- Banks/Co-operative societies
- Registration Department
- Taxes Department
- Finance
- Stamp vendors and scribes
- Department of Survey and Land Records
- Department of Revenue

Outcome of the Project

- Cashless Sub Registrar Offices
- Elimination of Physical Stamp Papers
- Online delivery of digitally signed Encumbrance Certificate
- Online delivery of Certified Copy
- Public need not approach Sub Registrar office to submit applications since online submission of application enabled for Encumbrance certificate, Certified copy, marriage Certificate, Gahan Filing
- Anywhere Stamp generation
- No intermediaries
- No service charge
- Credit to Government on T+1.
- Online verification & stamp defacement
- Prevents fake e-stamp
- Eliminate loss of revenue to government
- Any denomination
- No stamp paper scarcity
- Caters to general financial discipline
- Eliminates the complex logistics in Security printing, storage, distribution, delivery, accounting, management, monitoring, stock taking, demand projection etc for physical stamp papers
- No gap in information flow between different departments

- Electronic trail ensures non-ambiguity and transparency in e-transactions
- Revenue accounting is automatic and transparent
- Centralized transaction data acts as a decision support system (DSS)
- E-Stamp Vs Physical Stamp Paper

SI No	Characteristics	Physical Stamp Paper	e-stamp
1	Security	Security thread, multicolor printing, serial number control and security paper but verification almost impossible- Tampering risk with franking machine.	System generated e-stamp with QR code, water mark, Unique identification Number, online Verification/ Defacement/ Locking facility.
2	Revenue	Leakage possible	Fool proof and amount directly credited to the Treasury account
3	Certificate	Pre-printed Paper or franking Based.	Preprinted stationary not required. E-stamp generated with built-in security features.
4	Document Verification	Almost Impossible.	Online and instant through integrated application PEARL
5	Processing time	Limited-Based on stock and machine- loading.	Unlimited and can be printed anytime.
6 .	Availability	Limited-Based on stock and machine- loading	Unlimited and can be printed anytime
7	Denomination	Fixed denomination. Scarcity of required denomination leads to excess payment for available denomination	Flexible. Any amount rounded to the next ten rupees.
8	Mode of payment	Only cash payment at SR office	Net banking/direct cash payment at Govt. Treasury. Cashless Sub Registrar Offices. No cash transaction at at SR office
9	Additional Payment	Commission to the vendors	No additional payment as commission.
10	Credit to Government	Leakage due to fake stamp paper	Direct to treasury account
11	Outside Agency	No (in Some states SHCIL)	No
12	Additional work for SRO for locking the e-stamp.	No locking	Additional work not required

Key Aspects

The project has vastly improved citizen services for Department of Registration by enabling online delivery of certificates, Online document submission, e-stamping, e-payment of fees, integration of e-POS machines at SROs, integration with Revenue for automatic mutation, electronic generation of document and endorsement after registration with digital signature etc

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Encumbrance Certificate	Online delivery of Digitally signed Encumbrance Certificate	2316231	2555219	2574883
Online Document Registration	Online Document Registration with	870209	878948	878294
E-stamping	Physical stamp replaced with E-stamp against e-payment of Stamp duty	-	36311	53619
Certified copy	System generated certified copies	591538	672211	569635
Marriage Registration		14818	16745	11791
Chitty Registration		-	60	9035

Implementation Coverage

- Implemented in all 315 Sub registrar offices in Kerala

New Services / Enhancements

Last year:

- Workflow based undervaluation system
- E-POS integration enabled Cashless, Faceless, Paperless office
- Digitally signed certified copy from scanned document images
- Workflow based Gahan filing and release enabled for co-op societies/banks
- Complete online chitty registration integrated with NRI chits run by KSFE under KIIFB project

This year

- Electronic endorsement generation for all types of documents
- Electronic document generation at SRO after registration with digital signature

Revamping with enhanced dashboards and Decision support systems

Enablers

Process Reengineering

- Template based Document Generation
- Gahan Filing/Releasing
- Online delivery of digitally signed certified copy

Online delivery of digitally signed Marriage Certificate

Technologies

- EA for Revenue & EA for IFMS frameworks are being developed
- Dashboards
- Mobile App development in progress.

People

- Departmental IT Cell has been set up to support implementation at state level. Whatsapp support group with identified district level master trainer is established.
- Software changes are managed through change management procedure.

Value Indicators

Learnings for Sharing

- E-payment and digital signature has been a game changer and enables faceless services

Template based document registration makes the procedure simple and helps automation

Digital Empowerment

- Software supports Local language.
- All payments are electronic
- Paperless, cashless, Faceless Sub Registrar Offices enabled in Kerala
- Integration with Revenue for ownership updation enables to maintain land records up-to-date
- Template based document generation eliminates need for special knowledge for document preparation
- e-Stamping eliminates need to go to stamp vendor and reduces number of steps for common man

Updated FMB ensures transparency in land records

Green Governance

- Electronic delivery of certificates with online verification enables reduction in paper use
- Electronic generation of template based document ensures less paper use
- E-stamping eliminates use of paper stamp
- SMS integration ensures green governance
- E-payment eliminates need for citizen to go to bank, fill in challan etc
- E-payment ensures automatic re-conciliation across departments without resource intensive reporting and accounting

Information readily available for decision making in required formats and logic

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Land Records Management System (LRMS)

Revenue and Disaster Management Department, Government of Odisha

Nikunja B Dhal and Usharani Sahoo

Project Overview

Objective: A technology driven solution to update land records reflecting field realities in transparent manner.

Scope

It is a comprehensive workflow based solution, where any requirement of change of land records to match the field realities is completed in a time bound and transparent manner. It has been implemented throughout Odisha, covering different geographical terrains and demographics. Any mutation case is effected through this system.

Stakeholders

Intended Benefits and Current Status:

Total 1.2 Million Updated RoRs have been generated from the system, completely eradicating intermediaries, and thereby making Governance citizen centric.

Key Aspects

LRMS application, a technology driven solution for updation of land records, both textual and spatial, since its inception has been one of the foremost cornerstones of Revenue Administration in delivering services at peoples' doorstep observing the tenets of transparency and teamwork in a time bound manner, thus making it a transformative solution. It has overcome the hesitations of history in the form of legacy issues, behavioural aspect of field functionaries thus making it a system owned by various stakeholders by training and capacity building. Coupled with the ORTPS Act 2012, this is proving to be a solution which increases citizen's happiness thereby making Governance people friendly.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Mutation cases disposed	Total No of mutation cases disposed in Odisha			12,00,000+ per Annum (after complete online in 317 Tahasils)
Public view of RoRs through Bhulekh Portal	Public view the Record of Rights in Bhulekh portal.			80,000+ RoR views per day
Data sharing with other applications	Property Registration, Agriculture, Land Acquisition, BDA etc.			Applications are very much linked with Land Records data.

Implementation Coverage

This solution has been implemented throughout Odisha in all 317 Tahsils. Role of multiple stakeholders like Tahasildar, AddlTahasildar, Record Keeper, Revenue Inspector, OIC Record Room, and Single Window Operator are codified in the system in concurrence with the Statutory process. After Mutation, The Record of Rights (RoR) are delivered through speed post, doing away with the physical interface of people with the system. Also the system sends the updated status to the applicant at various stages of mutation.

New Services / Enhancements

Way Ahead: Mutation application process is to be made online for all types of mutation cases.

Enablers

Process Reengineering

Land Records updation is a legal process governed by various acts/ rules. It has multiple stakeholders in the system performing different functions like admission of application, enquiry, notice generation and decision making. Earlier, this system was not uniform across the state following different workflow within the ambit of the legal statute. This system has facilitated uniform workflow and standard template for order sheet for all mutation cases, which has increased predictability and transparency into the system.

Technologies

Analytics report from the system enables the senior officers of the Revenue and DM Department to monitor the progress of mutation cases. The PMU Cell co-ordinates with different stakeholders to decrease the pendency of cases. The analytics report of the system acts as an aid to various pro-people policy intervention, human resource management and delivering public services, ultimately increasing the satisfaction level of the citizens.

People

There is an ongoing and continuous systemic effort to encourage people to adopt and own the system by various functionaries of the system. Different training programs at multiple levels are being carried out to train people to change the behavioral aspects.

Value Indicators

Learnings for Sharing

As this system has been implemented throughout the state, there are problems of connectivity and accessibility. To do away with such problems, Offices are VPN Enabled, so that Revenue Officers can access the system from anywhere.

Also, the system incorporates the feedback received from citizens and revenue officers from time to time.

Digital Empowerment

1. After the registration of land at SRO, the sale transaction report flows from e-Registration application to LRMS Application. Any status change of the application is automatically intimated to applicants. Once the mutation case is disposed, the Record of Rights (RoR), is sent to the claimant through speed post, thereby bolstering transparency in Government and increasing Gross Natural Happiness of the citizens.
2. An empowered citizenry, which obtains the services at their doorstep in a seamless manner, makes the authorities both responsive and accountable, thereby strengthening a virtuous cycle of good governance.

Green Governance

As the entire process of receiving Sale transaction report is electronic and the case record is maintained online, annually around 4 crore pages or approximately 1100 trees are saved annually.

According to e-waste policy of Union Govt. and subsequent guidelines issued by Govt. of Odisha from time to time, there is a process of defining computers, their accessories and other electronic equipment, obsolete. By following that process, once such electronic equipment are declared as obsolete, they are disposed under the aegis of State Pollution Control Board.

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Gazetted Entitlement Management System (GEMS)

The Accountant General (A & E), Kerala

T. Mohana Dhas and Vishnu V.G.

Project Overview

Office of Accountants General (Accounts & Entitlements) performs the function of authorizing the entitlements of Gazetted Officers of the State Government in Kerala. Gazetted entitlements basically means the pay, leave salary and allowances admissible to a Gazetted officer. These are regulated on the basis of various rules and regulations made by the competent authority governing the conditions of service. GEMS is a web portal developed by NIC Kerala to improve efficiency / effectiveness of GE functions.

GEMS takes care of processing of entitlement functions with respect to 50,000 plus gazetted officers coming under six domains viz.

- Kerala Service Rule (KSR)
- All India Service Officers
- UGC / AICTE
- Judiciary
- Governor / Ministers / MLAs / Personal Staff
- Kerala Public Service Commission (KPSC)

Benefits

- Computer based processing system, so that manual intervention is minimal
- Redundancy in process, record and registers are identified and eliminated
- Pro-active communication with the officers through e-mail and SMS
- Improves the quality of service
- Integrated with state portal under IFMS and hence the communication with stake holders are faster and easier.

Current Status

- Implemented in 2012 in Kerala
- Implemented in 2015 in Karnataka and Tamil Nadu
- Customization started and All India Service module completed for Assam
- Customization started for Meghalaya
- Test URL provided to Nagaland, Meghalaya, Bihar and Jharkhand

After the successful implementation in AG office Kerala, CAG directed to replicate the software in Karnataka and Tamil Nadu. It has been implemented in both the states in 2015. It is under customization for Assam, Nagaland, Meghalaya, Bihar and Jharkhand.

Key Aspects

- Implemented in Kerala in 2012
- Efficient and consistent performance
- 56,000 gazetted employees entitlement are being handled with limited staff

On seeing the success, it has been implemented in various states across the country

Result Indicators**Services**

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Payslipauthorisation	Payslip authorisation	140320	119570	129373
Service details of gazette officers of state government including all India service officers			41400	853

Implementation Coverage

100 % achievement

New Services / Enhancements

All communications from the state government to the AG office with respect to all gazetted officers will be automated.

Enablers**Process Reengineering**

Manual service book has been dispensed and digitally signed electronic service book (GER) is maintained

Most of the processes are automated

All communications are made electronic. Hence 100 % paperless office.

Technologies

New enterprise architecture document has been prepared

People

All the staff in AG (GE) section has been provided training in the software

Value Indicators**Learnings for Sharing**

Government changes the rules frequently, hence the rules implementation is cumbersome job in a short period. This was overcome by implementing dynamic method invocation with rule based algorithm while implementing the system.

Digital Empowerment

Issue of payslips and GPF slips online which is helpful to all government employees

Green Governance

All communications are made electronic. Hence 100 % paperless offices.

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Kerala – Single Window Interface for Fast and Transparent Clearance (K-SWIFT) for Ease of Doing Business

Kerala State Industrial Development Corporation

T. Mohana Dhas, M. Kasthuri and Sanjay M. Kaul

Project Overview

Objective

Ease of doing business aims to create a single platform for providing best support towards the prospective and existing business community in the state and drives forward the State's vision of prosperity for all - by employing technology, innovation, inclusivity and sustainability as key factors for development. It provides objective measures of business regulations. Single Window clearance System aims to get all the required Clearances and Permits in one shot for the Investors.

Scope

- (a) Web enabled solution facilitating entrepreneurs to start the industry related project using a Single window clearance mechanism.
- (b) To introduce m-Governance and related services with Responsive Web Designs (RWD) to facilitate anywhere and any-device service delivery mechanism.
- (c) Develop a system to provide service-oriented information to entrepreneurs about the system, how to set up a industry, how to get the clearances from a single point, clearances required and status of application in each of the line departments.

Functionalities

- Investors can apply to 14 Government Departments /Agencies 24*7 through KSWIFT Portal
- Single Point Contact for Entrepreneurs across multiple departments
- Common Application form (CAF) across multiple departments with unique identification number.
- Eliminating multiple point of contacts with Departments/Agencies
- Online tracking of Applications and approval within fixed Time limit.
- Real time notifications and Alerts via eMail, SMS & Dash board.
- Parallel process to expedite grant of clearance.
- Automated Fees calculation by the System against each Service.
- Deemed approval beyond set timeline of 30 days
- Integrated payment through eTreasury and Federal bank gateway
- Downloadable Digital Approvals
- A One Stop repository for all Govt. notifications for Investors / Enterprises.
- Inter-department communication Mechanism
- Digital Composite License binding on all Departments with a validity period of 5 years.

Benefits

- Know your clearances
- Online submission through CAF
- One time document submission with CAF
- Advisory in beginning of each stage
- Multiple statutory payments in one go through Online Payment Gateway
- Online processing
- Cash less, paperless, contactless
- Deemed Approval to reduce delays
- Real time status tracking through SMS & Email
- Reports & MIS for Management
- Inter-department communication

Stakeholders

Key Aspects

Kerala - Single Window Interface for Fast and Transparent Clearance (K-SWIFT) for doing ease of doing business using ICT tools by integrating all the line departments using open API to bring under common platform.

It is a unified integrated platform for entrepreneurs to apply for all requisite clearances to start industry without any procedural delays in getting statutory clearances from various authorities concerned throughout the life cycle of projects.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Dashboard	• Registered Users • Online CAF Submitted • Total Services • Services yet to process • Services Under process • Services Under Clarification • Services Deemed • Services Approved • Services Rejected Real time availability of data and services to all stakeholders			
Online Service Delivery	End to End delivery of service to the end user			
SMS alerts	Alerts to Entrepreneurs and Workflow players			

Implementation Coverage

- 14 Line Departments
- 35 Services
- 15 Training sessions conducted

New Services / Enhancements

- On boarding the Single Window Clearance for 10 more Departments
- Renewal of Services/Licenses
- Centralized Inspection and Compliance Monitoring System
- Integration with third party applications like Call Centre application & Query Management system

Enablers

Process Reengineering

- To enable an easy commencement and operation of business entities, 7 Acts and 10 Rules were amended to simplify the clearance procedures
- Introduced Common Application Form
- Uniform integrated platform for filing application at a single point.
- Integrated all line Depts. using ICT tools

Technologies

- Responsive public interface for enabling portal access from mobile in English
- SMS/Email penetration
- Payment gateway integrated

People

- More than 15 series of training and handholding conducted
- Live DEMO conducted
- User manual is made available at the portal for any time reference
- Around 3000 users have been trained
- Around 5000 users are accessing the system

Value Indicators

Learnings for Sharing

Key Learnings

- Creation of service oriented database
- Transparency in the availability of services to the entrepreneurs
- online application submission at anytime, anywhere
- Continuous capacity building is needed for stakeholders
- Automated clearing system brings in transparency to eGovernance

Challenges

- To bring clearances of various departments under one roof
- To identify various approvals applicable to various industries

- To overcome the resistance of Internal & External users , to adopt digital interface
- Poor infrastructure
- Poor internet penetration

Best practices

- Workflow driven Electronic movement of data
- Inter department communication using light weight APIs with proper handshaking
- To avoid delay in processing, online facility is provided to check the availability of Services in the line departments
- SMS alerts to Investors and Workflow players
- Inter Department Scalability
- Replicable across the Country
- One time customer registration to avail services from Centres

Digital Empowerment

eTreasury and payment gateway integration eliminates demographic barriers. Initiatives are taken for Unicode implementation .

Green Governance

Online submission, Electronic flow of data and Online service delivery makes the system Cashless, Paperless and Faceless

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Rajasthan Business Register “BR”

Economics & Statistics Department, Government of Rajasthan

Om Prakash Bairwa, Missa Ram Prajapat and Amit Agarwal

Project Overview

Earlier detail data of the business establishment in the state was not available with the government so it was felt to capture data of business establishment covering large scale and small-scale business to develop a frame of establishments with certain additional items of information belonging to the respective subsectors popularly known as Business register. Moreover, business prospects of the specific area may also be identified. Business Register record all enterprise groups, enterprises and local units that are active in the national economy.

Business Register is an integrated system to capture details of running and to be established businesses in Rajasthan. District Business Register serves as a useful tool for creation of district level statistical information and to establish framework for conducting sector wise surveys from time to time. Initially district wise business entrepreneurs’ data taken from Industry department and survey was conducted by the department to access the status of the business situation. Active business entities were identified and imported in the BR portal. Afterwards all the new business establishments are required to register on-BR portal.

Setup

The State Government has established Business Registration Centre (BRC) in all Districts at the office of Deputy/Assistant Director's, Economics & Statistics Department. State Government has established following arrangement for Business Register work:

- ❖ **Director and Joint Secretary, Department of Economics & Statistics** - Ex-officio State Business Registrar
- ❖ **Joint Director (NSS), Department of Economics & Statistics** - Ex-officio Additional State Business Registrar
- ❖ **All District Collector** - Ex-officio District Business Registrar
- ❖ **All District Deputy/ Assistant Director, Department of Economics & Statistics** - Ex-officio Additional District Business Registrar

Widely appreciated Business Register, covering 25 acts has already captured the data of over 6.33 lakh business establishments/NGOs of the state.

Key Module of the projects are:

- ❖ BRN Registration

- ❖ NGO/VO Registration
- ❖ Update BRN
- ❖ Print BRN
- ❖ Registration through eMitra
- ❖ Registration through SSO

Scope

Stakeholders

Key Stakeholders

- ❖ **Business Entrepreneur/NGO:** Applicant may apply for registration on the portal by authenticating through their Aadhaar No., Bhamashah No. or by uploading valid ID Proof. He may keep track of their registration and download BRN certificate online.
- ❖ **eMitra Kiosks:** eMitra Kiosks authorized by Government of Rajasthan are allowed to assist business entrepreneurs for online registration of Business on the portal. Kiosks also handover the certificate downloaded from portal.
- ❖ **District Business Registrar:** Registrar acts as a moderator in case of BRN applied though applicant's valid ID Proof. May perform corrections (if any) after his satisfaction. Generate progress reports and required statistical reports as per their requirements.
- ❖ **State Business Registrar:** State Registrar is empowered for overall planning and monitoring. Generate progress reports and required statistical reports as per their requirements. Send the statistics to MoSPI, Gol. Generate area-wise business profile for planning purposes.

Key features of the projects

- ❖ Uniform process of Registration (BRN) across the state.
- ❖ Business Entrepreneurs may apply online for Registration. No offline mechanism is available.
- ❖ Minimized duplicity of Registration due to Single Registration portal at state level.
- ❖ Maintenance of Centralized Registration database, which can be used for various analysis purposes.
- ❖ Availability of various MIS reports at District & State level.
- ❖ Facility to online search of Registration by the citizens.
- ❖ Uniform Registration certificate in the state.
- ❖ Circulation of instructions, notifications etc. to District Business Registrars / Citizens.
- ❖ Modular Implementation (Agile) Approach
- ❖ SMS Alert to citizens
- ❖ BRN delivery by email (if available)
- ❖ QR Code implementation on BRN certificate.

Key benefits of the projects

- ❖ Transparency in Business Registration System.

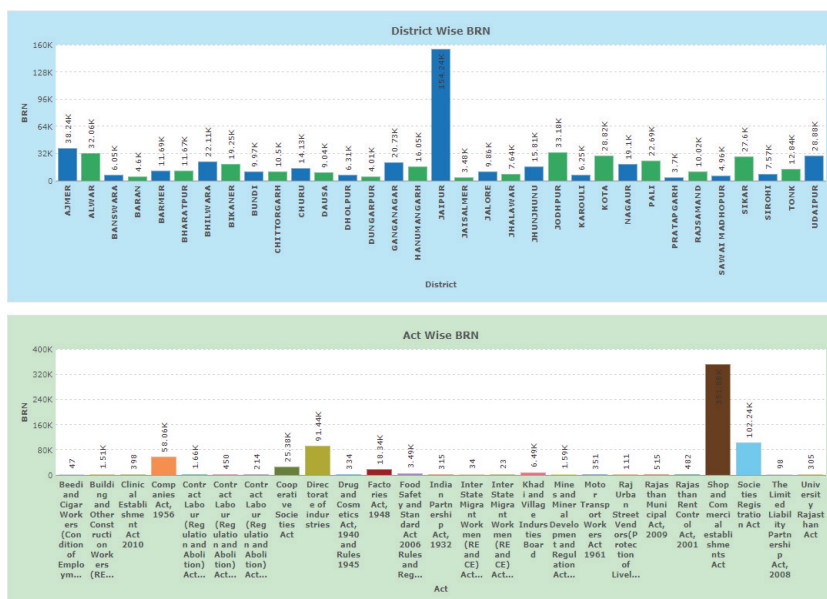
- ❖ Generate area wise business profile, beneficial for planning purpose.
- ❖ Speedy Registration and Issuance of Certificates.
- ❖ Useful for Economic Census in the State.
- ❖ Analysing existing potential business markets.
- ❖ Assessing/assisting market research.
- ❖ Economic Solution - In-House Development

Integration with Departments

- ❖ Integration with UIDAI for Aadhaar Authentication.
- ❖ Integration with Rajasthan Bhamashah Scheme for Authentication.
- ❖ Integration with all the registering Authorities for authenticating the BRN and getting their registration number with validity to BRN database.

Current Status

- ❖ About 6.33 Lacs BRN have been generated through the system.
- ❖ Business Entrepreneurs and NGOs/VOs are registering for BRN.
- ❖ 25 Acts have been covered in the system.
- ❖ Authorized licensing departments have been integrated.
- ❖ BRN Data is being used for planning purposes.



Key Aspects

Business Register is a framework of establishments along with additional information belonging to the respective subsectors such as trade, hotels, restaurants, transport, storage, communication, real estate. Legal & business

services, industry, factories and all other activities engaged in the production of goods and services that add value to the state income.

Government has issued notification in 2016 by which any business entrepreneur setting any type of business in Rajasthan state has to get Business Registration Number (BRN) online. To automate the process of Business Registration System, BR portal is developed by NIC Rajasthan through which Registration process is simplified and automated for the citizens of the state. There is no offline/other mechanism available for Business Registration Number in the state and citizens need not to go to any office for registration of their BRN. Business entrepreneurs may register their business entity itself on the 'BR' portal. Portal is integrated to Single Window System of the State and to the other registering authorities to minimize the movement of paper documents. After successful implementation of the registration process of Business entrepreneurs through the portal, government further issued directions in 2018 for extending the facilities to NGO/VO for taking BRN through the 'BR' portal.

The system allows the department to keep an eye on new business activities and NGOs in the state. It is used to generate area wise business profile in the state. The system has integrated approach in which a data once captured by BR portal for any business entrepreneur need not to submit again as portal is integrated to all concerned departments. In short, Rajasthan Business Register has now become a tool for Rajasthan towards a Digital Age for planning purposes.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
BRN Registration	Registration of Business for getting BRN	74050	111965	113773
NGO Registration	Registration of NGO/VO for getting BRN	Not Started	90	1004
Online Registration through Portal	Registration through Portal	63016	101107	108154
Online Registration through eMitra Kiosks	Registration through eMitra Kiosks	11034	10948	6523
BRN authentication through Web API	Use of BRN by Registering Authorities	30704	69501	63426
BRN Updation through Web API	Updation of Registration No. by Registering Authorities.	2071	21067	20737

Implementation Coverage

In September' 2016 portal was started with the coverage of PAN Rajasthan and made mandatory for all business entrepreneurs to register for BRN.

In October 2018, NGO/VO Registration through portal has been started.

Extensive training has been provided to all District Business Registrars and Block officers for providing support in their periphery. Toll Free Support system has been installed with a dedicated support team so that any citizen query may be answered quickly. Regular District wise training and monitoring through Video Conferencing done.

Presently 100% registrations for new business entrepreneurs and NGOs are being done on the portal.

New Services / Enhancements

- ❖ Implementation of NGO/VO Registration through BR portal in the State.
- ❖ Development of Mobile App for Business Entrepreneurs.
- ❖ BRN certificate developed and provided to Business Entrepreneurs.
- ❖ Web service to verify BRN Registrations provided to registering authorities like Labour, Factories and Boilers and cooperative.
- ❖ Aadhaar Data Vault Created as per the Aadhaar circulars and security requirements.
- ❖ QR Code Implementation on all BRN certificates.

Major requirement envisaged (for coming year) are as under-

- ❖ GIS Mapping of all Industries location of the state.
- ❖ Development of Mobile App for State/District Business Registrars so that they can monitors progress on Mobile.
- ❖ Addition of new Role for Block offices to be developed.

Productisation of BR portal so that it may be implemented in other states also.

Enablers

Process Reengineering

Before the BR portal, no such data for business enterprises/NGO/VO exist in the government. Major innovations were adopted as part of process reengineering in module designing in following entities:

1. Business Entrepreneurs

- ❖ Online Registration of Business/NGO.
- ❖ SMS alert to citizens.
- ❖ BRN delivery via email (if available).
- ❖ QR Code for verification of the BRN.
- ❖ Status on Portal and Mobile App.

- ❖ Download on Portal and Mobile App.
- ❖ Android Mobile App for various services.

2. District Business Registrars

- ❖ Real time monitoring of Registration in District.
- ❖ Tehsil wise Business Registration Status.
- ❖ No need to send any report to State Business Registrars.

3. State Business Registrar

- ❖ Real time monitoring of Registration in State.
- ❖ Various monitoring reports.
- ❖ No need to compile any report for sending to MosPI, New Delhi.
- ❖ Data integration with various departments.
- ❖ Cancellation of BRN.

Technologies

The role based Web-Application uses responsive design, enabling it to be easily accessible through PC/Laptop/ /Tablet/Mobile devices. NIC SMS services and e-Mail services have been integrated, thus making it possible to send Bulk SMS and emails to Citizens. Mobile App for Android users available.

Dashboard for State and District Registrars to quickly monitor the progress and pendency.

Video Conferencing has been used for the training and monitoring purpose. Field officers were also get updated through social media like WhatsApp groups.

People

Extensive capacity building programme has been conducted for all District Business Registrars for providing support in their periphery. Toll Free Support system has been installed with a dedicated support team so that any citizen query may be answered quickly. Regular District wise training and monitoring through Video Conferencing done

As Portal is mobile/tablet friendly, they access the portal, wherever available as per their suitability.

Value Indicators

Learnings for Sharing

- ❖ **Change Mindset:** The toughest challenge faced was to change the mindset of district officials who are reluctant to adopt new system which enables citizens to generate the BRN online without any official moderation and without any documents.
- ❖ The process re-engineering was big challenge due to existing manual and outdated process of registration.
- ❖ E-readiness of various stakeholders.
- ❖ Development of system within limited resources available with the department.

- ❖ Modular approach to development, frequent module launches.
- ❖ Daily meetings and interactions to ensure smooth progress.

Feedback from citizens are used to make the facilities more effective and citizens friendly.

Digital Empowerment

As Rajasthan is a backward state and major region belongs to rural, the portal is designed in a way that users do not face any problem. Helpful hints are provided at every stages of application form. SMS alert are send to the citizens for application, objections or modifications. BRN is being send by email.

Green Governance

- ❖ Emails through NIC e-mail relay services are being used to send BRN certificates to citizens
- ❖ Orders, Circulars and notifications are distributed through the portal which were earlier circulated on hard copies.
- ❖ Data directly pushed to and fetched from authorized departments which is saving lots of papers.
- ❖ Instead of applying on paper, no paper form is designed and business entrepreneur has to compulsorily register online and no paper is required.
- ❖ Aadhaar services are used to verify the identity of the person. No need of any photocopy of identity proof needed.

No need to send any paper reports to any higher authority. All concerned authorities have been provided login to see their reports.

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Goa Excise Management System (GEMS)

Department of Excise, Government of Goa

Amit Satija, Navnath K. Naik and K.P Pariselvan

Project Overview

State Excise is the second largest revenue generation department in Goa. There are 105 Liquor manufacturing units, 240 Wholesalers, 24 Medicinal and Toilet preparation companies, 4 Industrial units, 4 Military canteens, 2173 Retailers and 8087 Bars in Goa. Goa Excise Department is mainly concerned with production of liquor, monitoring and controlling the liquor movements across in Goa. To accomplish this objective, the GEMS is developed and implemented for seamless online communication among all excise officials across the state, all licensees, administrative departments & other stakeholders through the work-flow based system.

The Excise department of Goa desired to bring e-governance based on the principles of transparency and accountability and instant service to business community using Information Technology Tools (ICTs). This will also help the department in better revenue collection, reduction in paper usage, minimize visit to the department by the business community and quick services delivery through Single Window electronic information exchange among stakeholders.

The department had approached National Informatics Centre (NIC) on October 2013 to achieve the above goal. NIC proposed a design and develop of complete Web based Workflow System namely “Goa Excise Management System (GEMS)” by reengineering the manual process and to create Green Office (Paperless Office) environment.

NIC Developed and implemented a complete work flow based system to carry out the functions of the Goa Excise Department and digitally process the application from start to end. GEMS aimed to achieve the goal of complete e-Transaction service delivery to G2B and G2G using ICT tools to bring transparency, accountability in day to day functions and response time close to zero. Zero physical file movement from start to end. This leads to better governance and a paperless office.

Major e-governance transaction is taken place by switching over from manual process to completely workflow based application. Thus eliminating the physical file movement to the Head Office saving Man power, Transport, Energy and Paper. GEMS takes a maximum 15- 30 minutes to process the applications. Whereas manual process takes minimum 3-7 working days to process any application.

Two web based application was developed and implemented. One is Internet facing for business community and Intranet facing for the department officials. The GEMS

facilitate an internet based web application (<https://egov.goa.nic.in/excise>) for the business community to apply online for permits, NOC, Licence (Registration/Renewal), Label (Registration/Renewal) and Local Transport Permits.

Apart from this real time stock management/tracking at manufacturing right from raw materials, blending, Bottling, warehouse and dispatch after the payment of excise duty. Self-Generated Transport Permit for local Wholesalers and Retailers, Mobile App for Export Permit which requires while bringing goods from other state to Goa. Before starting the journey, Supplier has to enter the vehicle number through mobile App and it will update in GEMS. So, all the information available in check posts before reach the vehicle. There is a built in facility to generate e-challan based on System calculated excise duty and make payment online. GEMS proactive SMS/e-mails to applicants informing about the status of application at every stage. GEMS facilitate the dealer “Anywhere, Anytime Services”.

The GEMS facilitate an intranet web application (<http://10.155.155.38/gems>) for the Excise Department which is accessible in Excise Head Office, all the Excise Stations, Manufacturing Units and check posts. It allows the officers to process the application, print digitally signed NOC, Permit, etc. All the documents integrated with GS1 barcode, which is uniquely globalised. Apart from that introduced the system generated Notice Board, Record Room, registers, noting sheet, GIS map integrated Certificates, Election module and Live Revenue collection available in Dashboard etc. GEMS proactive SMS/e-mails to applicants informing about the status of application at every stage. GEMS facilitate the dealer “Anywhere, Anytime Services”.

Key Aspects

1. Business community getting a Hassle free environment due to the online services and online payment.
2. Reduce the public crowd at the Excise station, Head office and Bank due to the online services.
3. Easy tracking of applications, payment and day to day Revenue Collection.
4. GEMS provides an **Integrated environment to carry out all business transactions Electronically, Effectively and Efficiently.**
5. **Delivery of information across the desktop of the Business Community.**
6. **Instant information sharing among Department officials and the business community across the Globe.**
7. **Online clearance Permits/Licences etc., using DSC.**
8. **Electronic Payment Gateway integration.**
9. **M_Governance on mobile platform for wider reach.**
10. **Integrates Advanced Technologies and make the user day to day activates more simple and safe. Recently implemented BLOCK CHAIN TECNOLOGY in SUPPLY CHAIN. Chatbot and Elastic Search is in staging level**
11. Complete work flow application. Business community can apply only online with supporting documents. Processing only Digital Applications.

12. Eliminates files being carried physically to the Head Office and other Excise station.
13. On the fly excise duty calculates automatically using **Auto Fee calculator** and generated the e-challan with appropriate head of account.
14. Integration of Online payment for business community.
15. Globally accepted GS1 Barcode on each document (NOC/Permits etc.) to verify online.
16. 'ANYWHERE ANYTIME' access.
17. Android Mobile Apps for Checkpost entry. It will allow to capture the entries online and offline mode.
18. Authentication of Issued Permit, NOC available on public site available for inside/outside the state.
19. Supply chain tracking at factories through online portal.
20. Batch No. Tracking using BLOCKCHAIN Technology

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
NOC (import/ Export/ Local)	Quick delivery of services. Almost 6 officers have to verify the application for issuing a permit. But within 30 minutes dealer gets the Digitally signed NOC.	2004	1852	2357
Permit (Import/Export)	Quick delivery of services to the dealer and fast and hassle free verification at Check post using Mobile App.	9064	7696	9256
New/Renewal of Licence	Department can process and take decision quickly because of auto checklist and the digitally supported document. Formatted licence number is introduced. Each licence has GS1 barcode.	Not started	Not started	54
Label Registration	In manual process, it is difficult to handle Label processing. The dealer has to submit physically around 13 copies of label for each processing like label registration and renewal. There is no way to identify each document uniquely. Now, the dealer can scan and upload the labels with each application. These labels are visible for the concerned officer.	330	457	590

Implementation Coverage

1. Government To Government (G2G) : (Department of Excise, Directorate of Accounts , Finance Department, Police Department, Commercial Taxes Department, Other State - Department of Excise)

- In manual system, the application process which takes minimum **3 working days** to process. Now it takes maximum **30 minutes** to process any application submitted by the dealer.
- Eliminated the manual verification of supporting document. Live verification of supporting documents is available.
- Eliminated the manual verification of validity of licence, labels, NOC, Permitetc. Automated verification is implemented at each level.
- In manual system, the Excise Inspector had to calculate the fee structure, manually write the head of account, purpose of payment and amount in challan (E-27). Now, E27 is amended. e-challan is integrated. Based on each application, the system is calculating the fee structure, automatically find out head of account and amount.
- Difficult to sort out the Revenue collection before. After deployment, Department gets day to day revenue collection details.
- Difficult to identify how much application is pending for them to process/verify before. Now, each officer gets their pendency status through portal.
- Licence are not legible to read before and it is unformatted licence number. Now the formatted licence number is introduced. Each licence has GS1 barcode.
- All documents were in paper/file. Now, everything in digital format.
- In manual system, there was no way to identify each document uniquely. Now, GS1 barcode integrated in all documents which is generated through the system. GS1 barcode uniquely identify across the globe.
- Manual Registers are eliminated. Introduced System generated registers, noting sheet, etc.
- **Reduce the Response Time for Assembly queries**
- **Self-Authentication of Permits/NOC from other State**
- **Faster completion of Enforcement process Faster process of Permit verification at Checkpost.**

2. G2C (Government to Citizen)

- (a) Citizen can verify the purity of the liquor by key in BATCH NO. on the public site goaexcise.gov.in. It will retrieve the following information from the Block Chain.

- ✓ Manufactured by
- ✓ Brand Name
- ✓ Alcoholic Strength of the Liquor.
- ✓ Label image

From the above, the label image is like an Authenticated Document for the product which registered under the Department. Since it is coming

from the BLOCKCHAIN, there is no other third party authentication is required for identifying the genuine of the liquor.

- (b) **Reduce the Number of RTI queries and response time**
 - (c) **All licence details available in the public site.**
 - (d) **Show cause notice issued by the department is available on public site.**
 - (e) Latest News, Advertisement, Orders, Tender and Auction available on the public site.
 - (f) Latest contact details of each officer's information available on the public site.
 - (g) Public can send the complaints and feedback through online portal and the grievances available for the Commissioner. Department can process the grievances through GEMS portal.
3. G2B (Government To Business)
- In manual system, the business community had to visit excise station, bank and head office. Now they have to visit to the head office/excise station only after final grant of the application.
 - The dealer has to visit the bank for payment before. Now, e-Payment gateway is integrated.
 - There was no File tracking in manual system. Now, Dealer gets the status through SMS and site where the file is
 - In manual system, some dealer wants to apply for Bulk NOC every day and the EI has to generate separate challan for each application. But now, the dealer can apply bulk NOC easily and based on each bulk the system generates only one consolidated challan.

In manual system, difficult to handle Label processing. The dealer has to submit physically around 13 copies of label for each processing like registration and renewal. But now, the dealer can scan and upload the labels with each application. These labels are visible for the concerned officer.

New Services / Enhancements

1. BLOCKCHAIN integration is the greatest achievement for the past period.
2. Implements the service delivery through Web, Mail, SMS, Android Mobile App channels.
3. Completeness of information provided to the users
4. Anytime, Anywhere Accessibility
5. The user can apply online and upload the entire supporting document. There is no file/paper is transferred from one stage to another.
6. Business community and Department official can track the application.
7. Maximum Time taken to complete the process takes only 30 Minutes.
8. No delay in service

9. In the case of officials goes on leave, all the applications pertaining to him can be transferred to link officer at one click. The dealer will not suffer.
10. Other State Excise Department (Jharkhand, Assam) approaches us to study the implementation of GEMS.
11. The reengineering of the manual process helps to reduce the use of paper. "Save Paper Save Trees".

Future Plan

1. RFID tags may be attached to each carton stored in the warehouse. The items leaves from the factory can be tracked and verified online against the permit. Stock verification will be easy as they have to walk through the warehouse with an RFID reader.
2. Vehicle tracking system can be introduced to eliminate the chance of transporting the raw materials to unauthorized places. Radio emitter can be attached to the vehicle to track through GPS.
3. Advanced Technologies like Chatbot and Elastic Search integration in GEMS which will help the users to get the information in faster mode.

Face Detection and Voice Recognition facility integration which helps the citizen/Business community to apply online services like Renewal Licence without present in front of the officer.

Enablers

Process Reengineering

- Re-engineering of manual process which takes minimum **3 working days** to process any application submitted by the dealer(as the entire files has to come to head office) to bring down the application process time to 30 minutes by design and implementing of complete workflow based system. This also eliminates files/papers transfer from dealer, desk to desk of department officials till the approval.
- Amendment of Form E27 (manual challan) and integrated e-challan generation and online payment facility. Based on each application, the system is calculating the fee structure, automatically find out head of account and amount.
- Generation of bulk e-challan. The dealer can apply bulk NOC easily and based on each bulk the system generates only one consolidated challan.
- GS1 barcode implemented to identify each document globally.
- Head of the department can view and control the pendency status of each staff. In the case of officials goes on leave, all the applications pertaining to him can be transferred to link officer at one click. The dealer will not suffer.
- Formatted licence number is introduced. Each licence have GS1 barcode.

Technologies

BLOCKCHAIN Technology

People

Hired manpower only for the development of application. Remaining design, development, implementation, training, etc. taken care by NIC.

Value Indicators

Learnings for Sharing

There was committee formed to study the project and implement the same, consisting of Assistant Commissioner of Excise, Superintendent, NIC and Excise Inspectors which must every forth night till the time of implementation of the project to remove all bottle neck in the project.

Digital Empowerment

As per the NINE PILLARS of Digital India program, we are fulfilling the following 2,4,6,8 and 9 pillars

Second Pillar : Mobile Connectivity

Fourth Pillar: e-Governance

Sixth Pillar : Information for All

Eight Pillar : IT for jobs

Ninth Pillar : Early Harvest Programmes

Green Governance

- Before the implementation of GEMS, 342 employees are there in Excise Department. The paper consumption is 11157 ream per year. Approximately 700 trees in a year may be saved after GEMS implementation.
- As per the census data there are 41000 State Government employees spread across 72 Departments. If 342 employees can save 700 trees per year, then 41000 employees can save 84000 trees per year. **GEMS is the truly a fine example of e-Governance and Green-Office**

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Swachh Bharat Mission (Urban) MIS

Ministry of Housing & Urban Affairs, Government of India

V. K. Jindal, Binay Kumar Jha and Pradeep Kumar Gupta

Project Overview

The major stakeholders for this SBM(U) MIS are the State Mission Directorate & ULB officials of 35 states & 4378 cities respectively. The main users of the MIS are responsible for data updating on Monthly basis. As of now, the current MIS is capturing detailed data points pertaining to both States & Cities which may be used for predictive data analysis about a certain city and use appropriate methods/technologies to assist the city in better waste management. With the launch of Swachh Survekshan 2020, the field level conceptualization has strengthened, and the quality of data captured has also improved due to the quarterly assessments format.

Key Aspects

To monitor the progress of Swachh Bharat Mission (Urban), MoHUA has developed a State and ULB Level MIS which captures both physical & financial parameters critical to the progress of the mission. The system began with capturing details of all the 35 States at a holistic level. To ensure continuous monitoring and strengthening ownership of states and Union Territories (UTs), monthly video conferencing sessions with senior State Mission officials were organized for all 35 States and Union Territories. These VCs were highly structured reviews in which States are expected to explain gaps and delays and outline their action plan for mitigating these. Action points agreed in earlier meetings are followed up.

As the monitoring of States strengthened, the focus was widened to capture critical parameters for all the cities as well. World's Largest Cleanliness Survey, Swachh Survekshan 2019 was carried out online for the first time through the SBM(U) MIS. With over 500 data points being captured individually from each of the 4378 cities, the data set available for analysis and evaluation was very huge, with more insights available for understanding a ULBs sanitation condition. Additional FSSM indicators added for ULBs gave a complete picture of the Sewerage Network of the city, and appropriate handholding will now be provided to cities based on existing infrastructure available.

(a) Swachh Survekshan 2019/2020 MIS- the Annual Cleanliness survey conducted by Ministry each year is now made paper less & all data points are now taken online. Ranking of cities (among 4372) are done through progress updated in MIS

- (b) **Garbage Free Cities MIS**- Cities are given star rating basing indicators/protocol released by Ministry. The entire GFC module, along with scoring & relevant data points is part of the national MIS. Cities apply at willing to achieve star rating apply at the portal for approval by Ministry.
- (c) **City Profile**- a separate city profile has been developed to capture details of basic geographic parameters of the cities, such as Roads, railways, transport hubs etc.- to evaluate any area for cleanliness related commitments made by cities.
- (d) **National Level MIS and PMO Report**- Updated by States to report figures of cities for SBM Progress. These are then evaluated by Ministry and sent ahead for PMO Reporting.
- (e) **IHHL Dashboard**- A dashboard to track beneficiaries for toilet construction is developed. Aadhaar seeding of beneficiaries also tracked at the same portal.
- (f) **CT/PT**- Geo tagged pictures of CT/PTs uploaded at portal by ULBs, along with details of location & construction status.
- (g) **Proposal Tracking System**- A system developed to track the flow of fuds between the Ministry & States. The system has assisted Ministry in maintain a real-time evaluation of proposals received by States & responding to them, with no delay.
- (h) **Data Flow to Other Portals**- The data uploaded at the MIS is shared across with ministries & to other portals for displaying SBM Info, such as mohua.gov.in & DARPG.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Details of Toilets constructed in the nation since Mission Started (2 nd October 2014) Both Household Toilets & Community / Public Toilets	Geo tagged pictures of toilets along with details of other attributes such as Owner, Address, Ward Details are submitted by cities/states in the MIS.	Mission target of 66 Lakh IHHLs and of 5 Lakh CT/PTs achieved successfully in the last three years.		
Details of Solid Waste Management Plants (Compost/RDF/ Cement Plants/ MRF)/Dumpsite/Landfills in the Country	Geo tagged pictures of plants/landfills/dumpsites along with details of other attributes such as Agency, Address, Ward Details are submitted by cities/states in the MIS.	Less than 500 plants recorded in MIS	800 plants recorded in the year 2017	Over 1200 plants & more in the MIS
Basic Profile of a city with details of indicators relating to SBM(U).	Data points such as door to door collection, segregation, waste processed, bins etc is captured.	Details of all 4378 cities updated on daily/monthly basis. The Swachh Survekshan 2019, World's Largest Cleanliness Survey was done online through this portal.		

Implementation Coverage

The Mission began with a focus to reach to ULBs. The MIS was first designed at State Level for 35 states, and then moved on to the next version, where in details of cities were captured. Today the MIS is strengthened to hold granular details of SBM(U) indicators of over 4000+ ULBs.

New Services / Enhancements

The MIS enhanced when cities started updating the system in the month of 2018. With the Survekshan 2019 going online, the system was updated on monthly basis. Now, with Survekshan 2020- we have prepared modules which requires city to update system on daily basis.

With the current government being focused on Evidence Based Monitoring, it became imperative for the team to observe the SBM indicators on a single platform. To achieve this, a map based graphical view has been prepared by the Ministry where significant parameters of the mission are displayed with their real-time geo tagged location pinned onto the map. To map geographical boundaries of all ULBs, Shape Files for over 3300+ ULBs are arranged from all over the country. This included conducting Capacity Building Workshops in North Eastern States like West Bengal, Assam & other states like Uttar Pradesh.

Enablers

Process Reengineering

1. Automated reports generated through system for ease of user by Ministry.
2. Monthly Reporting And structured VCs conducted with States for progress mapping.
3. Weekly reviews done within team for evaluation & status check.
4. States collaborating with cities for continuous updating of data points at both state & city level.

Technologies

1. Collaboration with other vendors using successful REST/SOAP APIs.
2. Knowledge Management Portal & CMS maintained and managed by NIC. This portal has allowed states & cities to upload details of their activities (relating to Swachhata) be uploaded on system, effortlessly.
3. mSBM Application- An Android application developed specifically to assist cities in easier geo tagging of toilet photos, plants etc.
4. Robust & Scalable- The system developed is scalable to hold load of over 4000+ ULBs updating the system at one go.

People

1. Capacity Building Workshops conducted in cities to provide training for MIS and GIS.
2. Handholding support provided to cities through Ministry team, both online & offline.

3. With the purpose of continuous monitoring and strengthening ownership of states and Union Territories (UTs), monthly video conferencing sessions with senior State Mission officials are organized for all 35 States and Union Territories. These VCs are highly structured reviews in which States are expected to explain gaps and delays and also outline their action plan for mitigating these. Action points agreed in earlier meetings are followed up.
4. In addition, the SBM Mission team visits and invites senior officials from states for in-person reviews. Primary points of discussion during the VCs and reviews include progress on ODF action plan, failure of states and cities in getting recertified ODF, tracking of fund disbursement for various sanitation and SWM funds.

Value Indicators

Learnings for Sharing

1. Swachh Bharat Mission (Urban) has been able to achieve these accelerated outcomes by focusing on capacity building and stringent monitoring of States. SBM (U), is now focusing on sustainability of the results achieved. It is evolving to the next frontier of ODF+ and ODF++(FSSM) through MIS.
2. Versioning approach has helped build the MIS better. Beginning with a basic structure (database & view), and then enhancing it to cover more data points, once user has accepted the flow of the system.
3. State ownership & access to states of the City MIS has helped in creating a trustworthy system.

Digital Empowerment

1. User Manuals created for each module developed.
2. FAQs created for queries faced by cities while handholding support.
3. Manuals created in all languages-for ease of use by cities.
4. Capacity Building of IT Staff across all 4000 ULBs.

Green Governance

It is a web-based system which does not require any new procurement of devices and can be accessed online.

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MeghEA Online Questionnaire

Government of Meghalaya

Timothy Dkhar, Candida Shadap and Kernold Basaiawmoit

Project Overview

The e-Governance initiatives in India have acquired new momentum with the launch of the Digital India program by the Central Government. The need for adopting a holistic approach in the domain of e-Governance has become evident from the interoperability issues within and across the multiple clusters of stand-alone applications developed by the States and Central Ministries over the last decade. Against this background, the Working Group constituted by the Central Government came up with a holistic framework, named IndEA, for streamlining, standardizing, and optimizing the e-Governance efforts across the country to address the much-needed interoperability and integration. Meghalaya has been chosen as the First State to implement IndEA. For this purpose; it was necessary to understand the department's within Government of Meghalaya; their objectives, services, processes and systems. With such a large scale project, it was imperative that a tool be built to facilitate data collection from such a wide range of stakeholders with a varied designation and purview

MeghEA Online Questionnaire is a tool for collecting information across the various state government departments. It is common knowledge that An Enterprise Architecture endeavor starts by documenting the current state (AS-IS) of the Enterprise Architecture. It is also a known fact that Enterprise Architecture documentation is time consuming and highly error prone. MeghEA Online Questionnaire intends to streamline, optimize, and facilitates collaborative collection of information in a central repository, which is a crucial initial step towards the development of Statewide Enterprise Architecture. The application is user-friendly, and requires minimal training, It will help enterprise architects drive business value for preparing the AS-IS architectures as per IndEA. It will facilitate cross domain analysis and decision making, which will in turn help prepare the future state (To-Be) Architectures, as per Digital Service Standards and IndEA framework.

The key results of the initial phase of data collection from the portal:

- **Stakeholders:** 19 departments have completed responses to EA questionnaire
- **Number of Units:** 53 units have responded uniquely

- **Department Measurable Indicators:** 232 indicators with current and future data collected in the portal
- **Government Services (aligned to DSS):** 1193 services gathered along with service metadata
- **Process Steps/Actors/Time Required under each Service:** More than 5000 gathered till date
- **Systems:** More than 80 system's architecture details gathered

Key Aspects

Meghalaya Enterprise Architecture has a state-wide scope involving several departments within the Government of Meghalaya. The project needed to capture these department's objectives, services, processes, systems and various other associated details. Typically, such scale project needs structured information gathering from a wide range of stakeholders, with each of the stakeholder types having a specific data set to work with. Thus, there was a need of a portal to capture such information that can be analyzed to derive the state's e-governance architecture. This portal has been purpose fully made nimble and agile to accommodate extensive re-use in other states. This tool can be readily used by any State Government for enterprise architecture documentation, without any customization.

Uniqueness of MeghEA Online Questionnaire Portal

The portal is one of its kind, with a strong base of adherence to standards such as TOGAF, IndEA and Digital Service Standard, the question set has been drafted and vetted by National EA experts, experienced consulting organization and trained EA experts from NIC

Re-usability

The portal has unique features of simple UI based configuration that makes the portal ready for any state/UT/PSUs. A typical such tool costs significantly high with additional costs of licenses, initial consultation and support. Moreover, Enterprise Architecture tool aligned to IndEA is yet to be available in the market

Configuration

The tool has been built with unique ability to configure new departments, users, roles through UI. Avoiding any requirement of software development effort. The tool's features of administration make it completely free from any coding requirement

Technology

The tool is based on opens source technology, making it uniquely aligned to state's objective of building systems and tools devoid of any additional cost to the government. The tool is configurable and ready to be deployed, makes it a classic fit to any state government initiating such large-scale project

Dashboard

The portal has unique feature of drill-down to data to understand and respond on data completion status of:

- Departments; Business Direction Provided; Service Process Detail Completed
- Directorate Service Process Detail Completed

IT System Details

Result Indicators

Services

Description of various e-Services, benefits and their Volumes

- Capturing the Vision, Mission and Goals of each department for deriving a high vision and Mission
- Capturing the Services delivered by the Departments and mapping the UN-India Sustainable Development Goals.
- Facilitating identification of key indicators against SDG Goals for monitoring the performance of the State.
- Capturing and ranking the problems for each state government department
- Capturing the business and technical environment of the services with each department
- Capturing the desired goal and objectives of each department
- Capturing the human actors (participants)/ stakeholders for various state government functions
- Capturing the computer actors (computing elements) and their place in the technology model

Capturing the roles, responsibilities, and measures of success of each stakeholder;

Implementation Coverage

Implemented in all the 54 Departments of the State and their Directorates, Boards and Commissionerates, Commissions, Cells and Centers, etc. Basis of details gathered in current phase (first phase); 19 departments have completed data entry

New Services / Enhancements

This Application was implemented for the last 6 months. The next steps are illustrated below:

Implementation of Digital Services:

- The service-process data would be directly incorporated in Service Plus Definer Guide to develop the digital service
- The digital service prototype would be further fed to departments to gather feedback, feasibility using Agile methodology

Extension to Enterprise Architecture tool

Relationship mapping between services, processes, systems, data, technology and finally defined indicators as per MeghEA Vision, would be incorporated in the tool

Enablers

Process Reengineering

The key to process engineering, is gathering current process details which typically takes significant time and requires site visits. The tool intends to capture the data that can be analyzed for process re-engineering and implemented in digital service tools such as Service Plus. The tool has distinct feature to capture necessary process details along with business rules, to enable process re-engineering

Technologies

MeghEA Online Questionnaire enables the efficient creation, use, distribution and transfer of knowledge of various Government departments across the state. It supports the describing the current state (as-is) of an department, so as to enable the development of the desired outcome (to-be).

People

Capacity building was provided to all the departments and organization under them. Workshops were conducted and Training programs were also provided to various the EA nodal officers of the various departments and directorates

Value Indicators

Learnings for Sharing

- To understand the State Government functioning which is being treated as an enterprise on a holistic basis (business, technology and operating environment).
- To helps effectively direct the State Government enterprise to deliver strategic goals by aligning business and technology operations to strategic intent
- Improve service delivery efficiency and scheme implementation effectiveness by improving alignment of business & technology to strategic intent.
- Increase agility by making faster changes in response to dynamic business.
- Increase Return on ICT investment for the state government through optimized landscape enabled by common & re-usable components

Digital Empowerment

The online filling of the questionnaire eliminates the need for the departments to manually fill detail information regarding their Vision, Mission, Goals, Challenges, Services details, processes under each service, IT applications details, IT infrastructure Details. All Department organization units can provide information from anywhere, and the reports can also be seen by officers across the hierarchy of the department and across other stakeholders of the MeghEA project.

Collation of information across departments becomes simplified, streamlined and readily available from a common repository, which would facilitate the development of the MeghEA blueprint.

Green Governance

The documentation of the AS-IS state of each and every department across the 8 architectural layers of IndEA is being done through the MeghEA online questionnaire which is an Environmentally Friendly approach, as it eliminates the need for submission of any information in paper form. Similarly all reports are generated online and accessible to all stakeholders. The amount of paper saved as a result of using this online application is significant.

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Him Pragati – Online System for Chief Minister Office *Government of Himachal Pradesh*

D.C. Rana and Ajay Singh Chahal

Project Overview

Him Pragati – An online system by the government of Himachal Pradesh for effective monitoring and management of new initiatives of the state government covering the priority areas of Investment, Employment Generation, Budget Assurances, Chief Minister Announcements, Jan Manch and Monitoring of departments based on Key Performance Indicators identified department wise.

The development of “Him Pragati” portal, was a budget assurance (Annual Budget 2018-19) given by the Hon’ble Chief Minister, Himachal Pradesh with an objective to help the investors in the state who are in the process of establishing new projects in the state. This decision was taken by the Hon’ble CM in view of the success achieved by the Hon’ble Prime Minister by implementing Pragati portal which has helped the union government in converting the stalled projects into operational projects by providing a platform which connects the investors as well as central government departments with all Union Ministries/ Departments as well as bringing in the state governments on the same platform to resolve the interstate and interdepartmental issues.

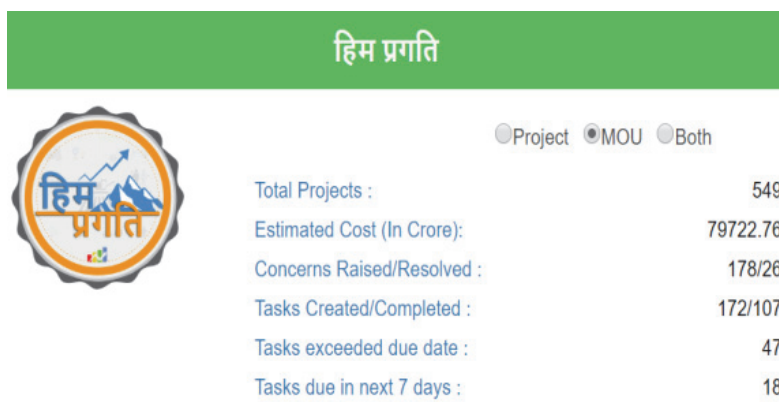
Scope

Functional & Geographical

The Him Pragati solution is an incremental development of modules and encompasses the following components:

1. Him Pragati
2. Him Vikas Samiksha
3. Budget Ashvasan (Budget Assurance)
4. Rojgar Srijan (Employment Generation)
5. Jan Manch
6. Mukhyamantri Nirdesh (Chief Minister Directions)
7. Yojnayan (Schemes)
8. Nivesh Lakshy (Investment Targets).

The complete solution is meant to be used by the Administrative Secretaries and Head of Departments of various state government departments. The Deputy Commissioners are also part of the system and are treated as Head of Departments under Revenue Department placed at District Level.



Him Pragati – This module allows the private Investor to get their Project Registered on the portal. The Project Monitoring Unit set up by the Chief Minister Office approves the project and once approved the investor can use the allotted login password to register the problems being faced by them in execution of their project. The government is also organizing Investor Meet in November 2019. Under the dynamic leadership of Hon’ble Chief Minister, the State Government departments have signed MoUs with Private Companies and Individuals. The main focus area of the state being Industry, Tourism, Education, Hydro Power, Health and Wellness, Housing.

The departments have been asked to upload these MoUs also on the Him Pragati portal. Once the department completes uploading of any MoU, the system creates an ID for the Private Entrepreneur and Private Entrepreneur is informed about the creation of User ID through SMS as well as eMail. Thereafter, the investor is free to upload any concern he or she is facing which may relate to any department in the state Government.

Him Vikas Samiksha – The Chief Minister Office has identified Key Performance Indicator (KPI) for 26 Departments and has also assigned 4 common KPIs to these 26 departments. The common KPIs being Private Investment, Employment Generation, Simplification of Act/ Rule/ Procedure and Budget Assurance. The departments have to fix annual targets against each identified KPI and have to enter the monthly achievement. The Review meetings are held using the reporting mechanism available in the software and it provides feature to capture minutes of the meeting and also use the same for next scheduled meeting to know the action taken by the departments.



Budget Assurance – The Budget Assurance module has key importance of monitoring the department wise assurances given by the Hon’ble Chief Minister while presenting the annual budget in the state Legislative Assembly (Vidhan Sabha). The State Planning Department, which acts as Project Monitoring Unit (PMU) for this module, makes entry of all the budget assurances and assigns each of the assurances to the concerned department. The software also provides feature to upload abstract of the budget assurance as image from the budget speech in addition to the summarized text entered by the PMU. The HoD of the assigned department gets option to report progress and also to upload supporting documents (single PDF) against each Budget Assurance. The administrative Secretary has to verify the report sent by the HoD. Finally the PMU checks the status of implementation and decided whether the assurance has been implemented in true sense otherwise can send back the same with comments to the Administrative Secretary for required action.



Employment Generation – The present Chief Minister in his inaugural session with the HoDs and Administrative Secretaries of all departments clearly admitted the limited options for employment generation in Government Departments. He emphasized the need of coming up with departmental schemes which provides the people of the state to get Self Employed or get opportunity to get wage employment out of the government schemes. This module enables the Chief Minister office to monitor Department wise employment generation activities. The departments have to add Scheme wise targets for Self and Wage Employment and have to provide the monthly achievement against these targets. The hon’ble Chief Minister himself chairs the review meetings which are held using the report

available in the software. The Minutes of the Meeting can also be captured in the software.

रोजगार सृजन	
	Total Self Employment Schemes : 101
	Self Employment Achievement/Target : 68569/228031 (30.1%)
	Total Wage Employment Schemes : 103
	Wage Employment Achievement/Target : 13776772/49300855 (27.9%)

Jan Manch – Jan Manch program is brain child of the Hon'ble Chief Minister, Himachal Pradesh with an objective to reduce the foot fall of the citizen to Government Offices including Chief Minister Office for meagre requirements which can be provided to the people at their door step. The program was launched in May 2018 and first Jan Manch was organized on 2nd June 2018 throughout the state. The government is committed to organize Jan Manch on every first Sunday simultaneously at 12 places in the state to cover all 12 Districts and one Assembly Segments in each District. The venue for the Jan Manch is decided so as to cover a cluster of approximately 10 Village Panchayats. The venues are notified well in advance so that the District Administration gets opportunity to advertise the venue among masses so that they can attend the Jan Manch. People can submit Grievances, Demands during the Jan Manch and can also submit applications to avail benefits out of Government Schemes, can also get assistance of the government officials present on the venue to get their papers completed and avail the scheme benefits. The Health Camps are also organized by the health and Family Welfare, Dental Health Services and Ayurveda Departments where the people can get their health check-up done. Community lunch is also organized on the venue where people and Government Functionaries sit together and have lunch. Cleanliness is given top priority and cleanliness drive is also organized in pre Jan Manch phase. The inspection of government schemes and assets is also carried out by the government officers in pre Jan Manch. This module provides features to register the activities carried out as part of Jan Manch program in the state. Dynamic reporting mechanism is also provided for monitoring of redressal of the Grievances and Demands received during the Jan Manch so that people gets satisfaction level to make the program a success. Each Jan Manch venue is chaired by one of the Cabinet Minister or Speaker/Deputy Speaker of Vidhan Sabha or Chief Minister himself. The software carries out ranking of the Minister In Charge, District and Department based on various parameters being captured.

जन मंच



No of JanManch Conducted till date : 21 (Total Venues : 171)

Upcoming Jan Manch :

[Jan Manch Notifications](#)

Chief Minister's Directions – This module is meant to provide the latest status as well as details against each reference which is sent by the Chief Minister Office to various departments. These references are dealt in CMRefNIC software and on dispatch, these are sent to SamagreSamadhan (an existing online Grievance Redressal System) to avoid postal delays and provide online mechanism to monitor the disposal of Chief Minister References.

मुख्यमंत्री निर्देश



Application Type CM Annoucnement ▼

Received	1104
No Action	19
In Progress	371
Disposal	714

Yojnayan – This module was the first module of present Him Pragati portal and was developed for effective monitoring and management of 100 Days targets set for various departments by the Hon'ble Chief Minister on assumption of office on 27th December 2017. The software was developed so as to enable the departments to mention the tasks which they wanted to be considered as their targets to be completed within 100 Days of completion of new Government formation. The CM office scrutinized these tasks and selected as well as included the tasks for each department which the departments were supposed to complete within 100 days. The departments were provided feature to send the progress as well as send the content for final publication government published on completion of 100 Days. The same software module was further enhanced to collect beneficiary data in defined excel formats for each departmental scheme benefiting the general public. The same module is being used to collect the data related to various government schemes so that a booklet of all these schemes could be published having mention of the details to avail the benefits out of each scheme. The proposed name for this publication is "Jan AdhikarPustika".

योजनाये	
Total Assigned Tasks :	468
Not Reported :	163
In Progress :	187
Completed :	118

Chief Minister's Office
Himachal Pradesh

NiveshLakshy – The state government has given special attention towards need to bring private investment in the state so as to improve the economic condition of the state as well as with an aim to create opportunities for wage employment in private sector. The main sectors being focused are Hydro Electric Power, Tourism, Industry. The concerned departments are asked to fix targets and also to report the monthly achievement. Presently, this module is kept pending for implementation as the present focus is on organizing the Investor Meet in November 2019.

निवेश लक्ष्य	
APR-SEP : #INVT Achievement/Target (in Lakhs)	0 / 1 (0.0%)
#INVT Achievement/Target for 2019-2020	0 / 4 (0.0%)
APR-SEP : #EMPL Generation Achievement/Target	0 / 111 (0.0%)
#EMPL Generation Achievement/Target for 2019-2020	0 / 229 (0.0%)

निवेश
लक्ष्य

Stakeholders

- 1. Private Entrepreneur** – The prime objective of Him Pragati portal is to help the investors who are establishing their project in the state of Himachal Pradesh. The portal provides option to register the project, once approved by the Project Monitoring Unit, the investor can register the concerns related to setting up the project in the state and facing hardship related to any government department or any other problem in general.
- 2. Chief Minister Office** – Each module of this solution is focused for improving the monitoring of various government schemes meant so as to improve the quality of governance with help of ICT. The project monitoring unit acts on behalf of CM office. The dynamic reporting mechanism provides consolidated status of any module as per requirement of the CM office.
- 3. Administrative Secretaries** – The Administrative Secretary role is able to get department wise detailed data of all organizations within selected department through the Head of Departments. This role verifies the reporting done by the Head of Departments. The Secretary role also gets summary of all organizations within any assigned department,
- 4. Head of Departments** – The HoDs (Director/MD/CEO/E-In-C/DG) are liable to report the data of their respective organization against each module. They enter the targets and also feed the monthly achievement.

5. **Citizen** – The citizen gets the benefit of whole solution which is using the ICT for effective monitoring and management of government schemes including Jan Manch which is focused to benefit the citizen.

Intended Benefits and Present Status:

Jan Manch program launched in May 2018 and being held since 02-06-2018 is regularly held on every first Sunday of the month simultaneously at 12 locations in the state covering one venue in each of the 12 districts. The program is targeted to help general public by providing the opportunity to get benefitted to avail various services related to different departments whose district representatives are made available to the public at their nearest place. Jan Manch is chaired by one of the cabinet Minister at each location and public grievances are welcomed which are resolved on spot and if the nature of grievance do not permit spot resolution, directions are passed by the minister in-charge to resolve the matter. Review of the received but pending applications of the type grievance and demand is held regularly prior to upcoming Jan Manch by the Minister In charge or the Deputy Commissioner of the concerned District.

Till date 14 Jan Manch cycles have been organized covering 163 different venues spread all over the state. During the winters the Jan Manch is not organized at Lahaul-Spiti and Kinnaur districts which are mostly snow covered in this season, whereas, in bigger Districts Shimla, Kangra and Mandi to cover all assembly segments within one year, within same month more than one Jan Manch was organized. A total of 3,30,456 people attended these Jan Manch and expenditure of Rs. 3,18,87,760/- has been incurred on organizing these Jan Manch. A total of 17091 Grievances and 24993 demands have been received during these Jan Manch and out of these 15917 (93.13%) Grievances and 21616 (86.49%) Demands have been resolved till date.

Yojnayan, the first module of the solution was intended to help the CM Office in effective monitoring and management of 100 Days Targets which was carried out successfully. Till date 986 tasks assigned to 89 Departments/Organisations and 611 have been completed. Thereafter the same module helped in compiling the beneficiary data related to various Union and State Government Schemes. The compilation of the Government Schemes is still in progress and 23 departments have submitted 229 Schemes to be covered in this publication.

Rojgar Srijan module has been successfully implemented and being used for the consecutive second year. The module provides mechanism to set targets for each scheme and also report monthly achievements. The review meetings are also held using the reports available and points discussed during such meetings can also be recorded using the module. Presently, the meeting minutes are not being recorded in the software and are likely to be recorded in the system in future. Various

departments have defined 101 schemes falling under self employment and 103 schemes providing wage employment to public. The target for current financial year is 2,28,031 self employment and 12,12,885 for wage employment which is further categorized as seasonal, casual or regular wage. Till date 75406 (33%) self employment and 5,60,238 (46%) wage employment targets have been achieved.

Him Vikas Samiksha module which enables the government to monitor the departmental functioning using the Key Performance Indicators assigned to the departments. The module has been implemented in the current financial year and departments have defined their annual targets as well as are reporting the monthly achievement against each KPI. The meeting minutes are also recorded on the system and review meeting is held using the report available in the module. The government has identified 26 key departments who are assigned 210 KPIs including 4 common KPIs for each department. Each department has defined targets for the current financial year and are reporting the monthly achievements. Till date one review meeting has been organized in which Hon'ble Chief Minister has reviewed the progress.

Him Pragati module is developed to help the private investors who are setting up new projects in the state. Till date 129 projects of 17,699 Crores of estimated cost have been registered on the portal. The same module is also used for monitoring of MoUs being signed by the state with different companies under the ongoing program of the government to bring private investment into the state to improve economy and create opportunities for wage employment to the youth. Till date 566 MoUs have been uploaded on the portal with an estimated cost of Rs.81,319 Crores. 180 concerns have been raised by various investors and 27 have been resolved. 174 tasks were created for departments to resolve these concerns and 108 tasks have been completed. Only the private investor can finally close the raised concern.

Budget Assurances – As part of the annual financial budget presented by the finance minister (Hon'ble Chief Minister of Himachal Pradesh) assurances are given by the government which pertains to different departments in the state. This module helps the government in monitoring the implementation of these assurances within defined time frame. 126 Budget assurances of 2018-2019 and 157 of 2019-2020 have been made available on this module and assigned to concerned departments by the state planning department which is the Nodal Agency/Project Monitoring unit for Budget Assurances. The department reports the latest position of implementation of these assurances. Once implemented, the HoD submits the status report on the portal which is further verified by the Administrative Secretary. The ultimate decision of completion is taken by the PMU based on supporting documents submitted by the department as proof. If PMU is not satisfied, the reference is sent back to the department after mentioning the reason of rejection by the PMU.

Mukhyamantri Nirdesh module has been included in this portal so that the Administrative Secretary and Head of Department gets status of each and every reference marked to their department by the Chief Minister Office at a common portal. These references are categorized as Chief Minister Announcements, Financial Assistance, Public Grievances and Development related which are sent online from CMRef NIC to Samgre Samadhan for resolution. The departments send the action taken report online through Samgre Samadhan portal which is integrated with Him Pragati portal to provide the category wise latest status and drill down option to check each and every reference for details by the Administrative Secretary and HoD. The module is fully operational.

Investment Targets – This module is meant for management of private investments in key areas of private investment in the state like Tourism, Hydro Electric Projects, Industry, Horticulture (food processing). Presently this module is not in use as the current focus is on organizing the investment meet. The MOUs being signed by various departments are being uploaded on Him Pragati module.

Key Aspects

Him Pragati – An online system by the government of Himachal Pradesh for effective monitoring and management of new initiatives of the state government covering the priority areas of Investment, Employment Generation, Budget Assurances, Chief Minister Announcements, Jan Manch and Monitoring of departments based on Key Performance Indicators identified department wise.

Him Pragati portal is also one of the budget assurance (Annual Budget 2018-19) given by the Hon'ble Chief Minister, Himachal Pradesh with an objective to help the investors in the state who are in the process of establishing new projects in the state. This decision was taken by the Hon'ble CM in view of the success achieved by the Hon'ble Prime Minister by implementing Pragati portal which has helped the union government in converting the stalled projects into operational projects by providing a platform which connects the investors as well as central government departments with all Union Ministries/ Departments as well as bringing in the state governments on the same platform to resolve the interstate and interdepartmental issues.

The Government has also launched a unique program "Jan Manch" to provide a platform for general public at grass-root level where they can get their various issues resolved at nearest place to their residence. Starting with 2nd June 2018, the government organizes Jan Manch simultaneously at 12 different places in the state covering 1 place in each District and 1 Assembly Segment within each district. The venue for the Jan Manch is pre-notified so that citizen of the area can be benefitted. The people can visit the venue to get educated on the government schemes, they can raise their Grievances and can also submit the demands, the governments

officials present from all departments in the District are also available to help the citizen and provide them services in shape of Issuance of various certificates, completion of papers to avail government scheme benefits. The revenue department also provides mechanism to get mutations done for the villages falling in the Jan Manch area. The Health Camps are also organized by the health and Family Welfare, Dental Health Services and Ayurveda Departments where the people can get their health checkup done.

The government is also monitoring the Employment Generation, Budget Assurances and Key Performance Indicator progress through this portal. The review meetings are also organized using Him Pragati solution. So Him Pragati portal is a good example of ICT implementation in Government.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
100 Days Targets monitoring and management.	With the formation of new Government in the state in December 2017, the government asked all departments to come up with targets which are other than the routine jobs done by the departments and ensure to achieve them within 100 Days of completion of government formation. The Departments submitted the tasks they will be completing in this time frame which were approved by the Chief Secretary and Secretary (Project Monitoring). The departments submitted day to day progress on the portal. On final completion the material for publishing the 100 Days Achievement report was also provided through the portal. This module helped in effective and timely completion of the tasks assigned and also for compilation of material to publish the booklet.	NIL	612 Tasks 5032 Transactions	374 Tasks 2589 Transactions
Jan Adhikar Pustika	After achieving the success of 100 Days target management using the portal, The government decided to come up with a booklet mentioning department wise government schemes providing benefit of various types to the common citizen. The module provides feature for departments to upload the Scheme details along	NIL	NIL	419 Schemes 2398 Transactions

Contd...

	with related PDF (if any). Each scheme contains details of eligibility criteria, other requirements to avail the scheme.			
Jan Manch Grievances	The grievances submitted by the public during Jan Manch are managed using the software. Starting with the entry of application along with uploading PDF copy of the hand written/supporting documents, if any. These grievances are resolved by the concerned departments.	NIL	12,060 37340 transactions to resolve these grievances	4,741 21739 transactions to resolve these grievances
Jan Manch Demands	The demands submitted by the public during Jan Manch are managed using the software. Starting with the entry of application along with uploading PDF copy of the hand written/supporting documents, if any. These demands are resolved by the concerned departments.	NIL	19,233 41659 transactions to resolve these demands	5,488 21028 transactions to resolve these demands
Jan Manch	The coverage of government schemes in the catchment area of Jan Manch as well as the pre and post Jan Manch activities are also recorded on this module. Using this data the review of Jan Manch is carried out in every cabinet meeting.	NIL	3 Lakh + people attended the Jan Manch, more than 3 crore expenditure incurred by the government in organizing these Jan Manch.	
Budget Assurance Monitoring	The budget assurances given by the government during financial budget every year are being monitored rigorously to ensure timely implementation of all the listed assurance on time by the respective department.	NIL	126 205 assignments 188 reporting entries	157 288 Assignments 253 reporting entries
Rojgar-Srijan	Monitoring of schemes run by various departments for employment generation in shape of self and wage employment.	NIL	5,73,946 self employment 12,60,185 wage employment	2,28,031 self employment 12,12,885 wage employment
Upcoming Project	Registration of project by the private project promoters to get solution to the problems being faced in establishing new projects	NIL	95 projects 14025.36 crore estimated cost	34 projects 3673.80 crore estimated cost

Contd...

MoUs signed with private project proponents	Various departments have signed MoUs with the private project proponents under the current investor meet activity.	NIL	139 MoUs 12,943.44 crore estimated cost	427 MoUs 68,402.24 crore estimated cost
CM References	CM Announcements, Public Grievances, Financial Assistance, Employment related references received by the Chief minister are sent to field offices for action.	NIL	27,396 references received and more than 1 lakh transaction carried out for resolution	21,923 references received and more than 70K transaction carried out for resolution

Implementation Coverage

The Application covers the whole State of Himachal Pradesh. Administrative Secretaries, Head of Departments, Deputy Commissioners all are part of the system and have their role. The successful management and compilation of 100 Days targets, recording of Jan Manch being organized every month, Registration of Projects and MoUs (which covers the whole nation and even the project promoters outside India), Monitoring of Departments based on KPIs and effective monitoring of CM References, Employment Generation schemes, Budget Assurances are being achieved as per requirements. The only module which is yet to be implemented is “NiveshLakshy (Investment Targets)” which is likely to be implemented after the closure of investor meet scheduled for November 2019. The delivery channel is 100% electronic as the users are connected to the system using web application, SMS & email generated by the application. The system also has provision to generate directions which are communicated to concerned users through SMS, email and also available on the system under their user.





The screenshot displays the Him Pragati portal dashboard. At the top, there is a header with the Himachal Pradesh logo and the text 'हिम प्रगति' (Him Pragati). Below the header, there are navigation links: Home, Date: 25/10/2019 11:23:03, Issue Direction, Manage Projects, Reports, Dashboard, and Welcome, Chief Minister Office, HP. The dashboard is divided into several sections:

- MoU Status:** A table showing the status of MoUs. It includes columns for Total Projects (566), Projects in Execution Stage (57), Complete in next 6 months (131), Central Funded (0), Yet to start (504), and Delayed Projects (53).
- Financial Details (All figures in crores):** A table showing financial information. It includes columns for Estimated Cost (81319.26), Expenditure Till Date (344.50), Central Share (0.00), and Central Share Received (0.00).
- Concerns:** A table showing the number of concerns raised, resolved, and pending. It includes columns for Total (180), Government Concerns (0), Private Concerns (180), Raised (27), Resolved (27), and Pending (153).
- Tasks:** A table showing the number of tasks created for 180/180 concerns. It includes columns for Created (174), Pending (42), Inprogress (24), Completed (108), Delayed Tasks (63), and Tasks due in 7 days (3).

New Services / Enhancements

- To achieve 100% paper less solution, all the communications are system generated and circulated using SMS and email.
- Mostly more than one department is assigned to the Administrative Secretary. The system is modified so as to provide access to all the departments assigned to particular secretary using any of the logins generated for the independent departmental secretary.
- HimVikasSamiksha module was introduced for effective monitoring of various departments by the Hon'ble Chief Minister office. Initially the solution was prepared for administrative secretary level which was further enhanced to make it available to the HoD level.
- Feature to send directions through email and SMS included in all modules to achieve 100% paperless system.
- The summary status and drill down information on each reference sent by the Chief Minister Office to departments made available under "Mukhyamantri Nirdesh" module to provide the information under single login.
- Mobile application is being developed which will help the user to know the issues sent to the department by the Him Pragati portal components.
- Automatic scheduled alerts to be generated for defaulters.

Enablers

Process Reengineering

- The whole system has been envisaged to eliminate the excessive use of paper.
- Every stakeholder is onboard in the system and gets all communications electronically using the email, SMS and role based access to the system.
- Single platform for the Administrative Secretary and HoD level to know and send action reports to references of various types generated by the Hon'ble Chief Minister Office.

- Role based dashboard to reflect the status of every component as per user's jurisdiction.
- Provision to send supporting documents as PDFs while sending action taken report on any of the components.
- Auto generation of UserID for the private project proponent by the system on approval of Project/MoU.
- Final closure of any issue raised by the project proponent by the promoter only so that satisfaction of the project proponents can also be taken into account.

Technologies

The government of Himachal Pradesh is using MyDiary and Secretariat MIS systems which keep up to date information of department wise Administrative Secretaries and Head of the Departments. This system is being reused in Him Pragati to utilise the Department/Organisation wise Secretary and HoD information like email and mobile number. The contact details of the officers are used in the system to send various system generated communications.

- The solution provides multi-tiered architectures (at least 3-tiered with clear separation between the presentation logic, business logic, and data access logic). The Solution architecture is highly granular and loosely coupled.
- The solution is interoperable in nature and design and development is based on Service Oriented Architecture (SOA).
- The solution is ensure data safety and integrity in the event of communication channels operation failures
- Domain specific categorization for Enterprise Architecture

Data Quality as per e-Gov Metadata standards

- Naming Conventions
- Data Type and Length
- Data Logs (Creation / Updation)
- Table Indexes and references
- Aliases & Default values

Security: OWASP security guidelines

- Single Factor Authentication(Password Based)
- Two Factor Authentication (Password + OTP Based)
- Captcha on Public forms
- Encryption and decryption of parameter.
- Role Based Work Flow in Application
- Forget Password, Password Expiration Policy

User Friendly Form

- Customized errors
- Customized system alert

- Client & Server Validation
- Required Field Validator
- Form Look and feel
- Restriction on file upload

Accessibility

- Web Based Solution –http and https
- 24x7 availability
- Hosted on NIC Cloud

People

The idea of using a system to gather vital and time bound information from various users that to in a mission critical situation was brain child of the then Chief Secretary Sh. Vineet Chawdhry. The task of development was assigned to NIC Himachal Pradesh. In a time bound manner, NIC HP came up with a system which not only provided role based access to users, also encompasses full work flow and features to upload the information as well as supporting documents as PDF/Excel. Workshop was organized to give awareness to the targeted user base of Administrative Secretaries and Head of the Departments and it was rolled out. New modules and feature kept on coming as per the requirements of the Hon'ble Chief Minister Office. With development of every new module, the users are being sensitized through the sliders/videos made part of the module as well as workshops being organized by the Chief Minister Office. The present Chief Secretary and the then Principal Secretary to Hon'ble Chief Minister Dr. Shrikant Baldi is instrumental in making full use of the system by adding the Him Pragati module to help private investors in resolving their issues, Rojgar Srijan for monitoring of Employment Generation targets and Him Vikas Samiksha module.

Hon'ble Chief Minister, Himachal Pradesh Sh. Jai Ram Thakur himself is taking keen interest in the activities being monitored through Him Pragati. He has been taking the review meetings himself and devoting even more than 6 hours during the meetings. The private investors are also invited for the Him Pragati portal review meetings to take feedback in person from them. The response has been very positive from the private project proponents who have appreciated this initiative of the present government where Government is reaching the private people rather than the proponents are visiting government office to resolve their problems on their own. This initiative has increased the trust of Government in project proponents to a greater extent.

Capacity building programs are also being organized at state training institute (HIPA) to help the users for better understanding the system.

Value Indicators

Learnings for Sharing

The conceptualization of Him Pragati itself was due to the success of PRAGATI (Pro-Active Governance and Timely Implementation) implemented by the Hon'ble Prime Minister of India. PRAGATI has resulted in implementation of stalled projects by intervening to remove the issues which were inter-department or inter-state and were struck up. Taking this idea further, the Hon'ble Chief Minister, Himachal Pradesh assured in his budget speech of annual budget 2018-2019 to come up with Him Pragati portal which will help the private investors who want to install projects in the state and are facing problem related to any of the government department/organization.

Him Pragati was launched in June 2018 by the Hon'ble Chief Minister which allows the investors to register their projects and then raise any issue being faced so that CM Office can intervene to resolve the issues being faced.

The present system is fully utilizing the email and SMS systems. All the communications are electronic in nature and are sent as email or SMS. This is not only saving the postal delays as well as saving the paper to make it completely paperless solution.

The idea of sending electronic reminders/notices/directions is also implemented. The PMU is allowed to use the directions module to send any customized email and SMS using the system.

Digital Empowerment

Language

The whole solution allows the user to use English or Hindi. Unicode is supported by all the modules. As per requirement of the Hon'ble Chief minister Office, some of the modules are demanding inputs in both English and Hindi language. Some modules demand the information to be in Hindi only. The module interacting with outside government is allowing both the languages.

Financial Inclusion, Demographic & Cultural differences

There is no component as such which requires financial inclusion or has any demographic or cultural parameters in consideration. Hence, there is no discrimination of making the system available to any defined class.

Green Governance

Paperless Operations: The application captures all operations through online data entry forms available to all stakeholders including private project proponents. The paperless operations helping in eliminating the need to collect, process and store records on paper. Moreover, the indexing and searching becomes efficient and easy.

MIS Reports: MIS reports are generated by the systems to help the Department evaluate their daily activities, monitoring various components and tracking progress as well providing the inputs as per requirements.

Email & SMS based alerts: SMS and Email based alerts on transactions are generated for targeted users. The system also allows electronic direction issuance for Administrative Secretaries and Head of the Departments. The Administrative Secretary can also use the same feature to communicate with HoDs falling under selected department.

Reports in Digital Format: All Reports are available in digital formats with downloadable and search option. Even the review meetings are also organized using the reports available in each module and even the decisions taken in the meeting are also recorded on the system itself.

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Kerala Online Mining Permit Awarding Services (KOMPAS)

Department of Mining and Geology, Government of Kerala

T Mohana Dhas, Jeena Vinod Mathew and Biju Sebastian

Project Overview

In the initial phase of implementation of KOMPAS, stakeholders can avail following services:

1. Submission of online application for mineral movement permits
2. e-payment of application fee, royalty and other payments
3. Online tracking of status of processing of applications
4. Online generation of ePass. Lot of time is saved for the concession holders with respect to visiting the office and getting the pass signed by the office staff.
5. Uploading of mandatory licenses from other departments like Pollution Control Board, Explosives, LSGI etc. by the applicant.
6. Online filing of returns.
7. Reduced the cumbersome activity of signing the passes in bulk by the employees and hence time is utilized for enforcement activities.
8. Google Earth is integrated to view the entity with its boundary values and its details in Google earth. This is currently used by the geologists, for issuing concessions.
9. Illegal movement of the mineral has been reduced a lot and more revenue is received by the Government in terms of royalty and compounding.
10. Online enrolment of vehicles for mineral movement.
11. Dashboard for stakeholders including Lease / Permit holders.

Features

- Integration with SWIFT (Single Window Interface for Fast and Transparent Clearance) for Entrepreneurs in Kerala State.
- Integration with eTreasury application for online payment of royalty, Tax Collected at Source and District Mineral Foundation Fund. Around Rs. 55 crores have been collected through KOMPAS.
- Integration with Unnathi portal, Kerala CM's portal for monitoring statistics of all e-Governance projects.
- Mobile application is developed in Android and IOS for enforcement purpose.
- Digital Signature is integrated to issue movement permits online.
- Email and SMS services are integrated. Pull, Push and OTP services of SMS are utilized
- QR code integration done to check the genuineness of ePass
- Event driven, context sensitive dynamic menus are defined for each user.
- Surveillance of mine/quarry by comparing the images and photos of the entity
- Stages of a particular application – Completed and pending are shown
- Activities by agents - created by the lessee to help them in their daily activities.

- Staff management module takes care of creation of employees, posting, relieving and holding of additional charge. It also takes care of the sanctioned posts and vacant posts of the offices.
- Provision is given to upload and view notifications, circulars, announcements and help files.

Stakeholders of KOMPAS

1. Vehicle Owner
2. Concession holders / Applicants
3. Department of Mining & Geology
 - Clerk
 - Mineral Revenue Inspector
 - Asst. Geologist
 - Geologist
 - Director
 - Typist
 - Despatch Clerk
4. Public
5. Other departments like Revenue, Police

Current Status

- KOMPAS implemented state wide from 1st April 2018. Implementation as pilot in two districts from November 2017.
- (URL: <https://www.portal.dmg.kerala.gov.in>)
- Data of around 9000 existing concessions have been entered by the department.
- Around 2600 users registered in the portal.
- More than 64,00,000 online passes generated from 12000 movement permits issued from KOMPAS.
- Total quantity transported using ePasses around 4,85,00,000 Tonnes.
- Around 50000 vehicles enrolled in KOMPAS for movement of minerals.
- Details of around 1120 quarries, 1150 depots and 1160 crushers are entered in KOMPAS.

Key Aspects

KOMPAS is the e-Governance initiative of the Department of Mining & Geology of Kerala State for bringing efficiency and transparency to mineral administration in the State. KOMPAS ensures citizen centric, cost effective, and quality electronic service delivery pertaining to mines and minerals in the State.

KOMPAS ensures transparency, by providing statistics of mineral concessions in the State, particulars of mineral concessions and documents submitted for availing concessions, locations of working mines, quarries, crushers and dealers, information on mineral availability, to the public. KOMPAS also provides information pertaining to genuineness of ePass, permits/licenses to other regulatory agencies like Police, Land Revenue authorities of the State. A Google map based service provides location

- specific information about the mining entities, quarries, and related information to public and other stakeholders.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
e-Treasury	For online payment of royalty and others		Amount collected- 14 lakhs	Amount collected- 34 lakhs
Online passes	Generation of passes for transporting minerals		98000 passes	37 lakhs passes
Google Earth	To view the current status of the quarry before issuing concession		Geologists check the area, boundaries and other details of the quarry online before issuing the concession	
Mobile application	Used by Mining & Geology, Revenue and Police departments for Enforcement activities. Public also can use this to check the genuineness of a pass		To check the genuineness of the pass and the validity of the vehicle	

Implementation Coverage

Initial plan was for processing of online application. It has been developed. This has been changed to generation of online passes from the existing concession. Online application and online issue of movement permits implemented. Provision for data entry of existing concessions are provided. After development, the Kerala Minor Mineral Concession Rules have been changed.

Online passes with existing concessions as per KMMCR 2015 have been implemented in the State from April 2018 onwards and more than 64 lakhs passes printed online.

Integration with eTreasury application for online payment of royalty, Tax Collected at Source and District Mineral Foundation Fund

New Services / Enhancements

Integration with SWIFT (Single Window Interface for Fast and Transparent Clearance) for Entrepreneurs in Kerala State.

- Integration with Unnathipotal, Kerala CM's portal for monitoring statistics of all e-Governance projects.

- Mobile application is developed in Android and IOS for enforcement purpose.
- Various reports generated for the stakeholders

Next year

- Receiving and processing online applications for various types of concessions, issue of concessions till generation of online passes.
- Transfer of an existing lease
- Compounding of Offence module

Enablers

Process Reengineering

Earlier, manual transit passes signed by Geologist/Mineral Revenue Inspectors were given for mineral transport. KOMPAS enabled users to print passes online.

It saved the time of concession holders for visiting the office to get the passes signed.

Also saved the time of office staff for signing the passes. They get more time for enforcement activities.

Kerala Minor Mineral Concession rules have been amended to make the process easier for the stakeholders.

Technologies

Google map and Google earth used to view present status of quarry location. Surveillance of mine/quarry by comparing the images of the location.

People

Change management system is adopted when acts and rules are changed, new additions/requirements and enhancements from the dept arises. Time and cost of the new changes are evaluated and project proposal is submitted. Based on the project proposal, URS is submitted by the department. Changes will be undertaken after URS is finalized.

Value Indicators

Learnings for Sharing

- Modifications due to the implementation of new acts and rules are incorporated
- Mobile application developed for enforcement purposes
- eTreasury application is integrated for online payment.
- Issue of online permits for movement of minerals and generation of online passes depends on the eligibility of the concession holder and validity of the concession.

Eg. Licenses and mining plan are to be valid

Stock should be available

Movement permit should be valid

Digital Empowerment

- Digitally signed permits are issued by the office
- eTreasury application is integrated for online payment
- Mobile application for enforcement purposes

Green Governance

eMails, SMS and online dashboards are used for communicating the actions taken or alerts to the stakeholders.

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AAPDA Sampoorti Portal

Disaster Management Department, Government of Bihar

Pratyaya Amrit, Shailesh Kumar Shrivastava and Rajesh Kumar Singh

Project Overview

Objective

The main of the project to manage activities related to disaster management. This also covers payment of ex-gratia, GR etc. to the beneficiaries for both flood and drought of pre and post disaster activities. The Aapdasampoorti portal enables one stop disaster management monitoring portal for GR payments for both district administration and department so that needy gets relief within very short time. This workflow based system enables various stakeholders an interface to know the details of payment released for compensation.

Scope

The Scope of the project includes:

- Identification and maintenance of disaster management beneficiary details
- Geo-tagging of Damaged Houses
- Compensation Payment to unfortunate victims of accident/death cases.
- Reduction of Duplicates in Beneficiary data.
- Accurate Targeting of Beneficiaries.
- Citizen centric Service at door-step to public and representatives.
- Most of the Services are accessible through Mobile Phones/Tablets
- Social Audit through digital interface
- Direct Benefit transfer to 60 Lakhs Beneficiary
- Extending benefit to citizen who need govt. services most and are placed at the remotest of society
- De-duplication with existing databases such as Aadhaar, SECC etc.
- Process Reengineering of schemes for simpler flow of information and funds.
- Greater Accountability of concerned authorities.
- Elimination of redundant processes in fund transfers.



Stakeholders

1. 38 (Thirty Eight) Districts of Bihar
2. 534(Five Hundred Thirty Four) Blocks of Bihar
3. District Administration
4. Panchayati Raj Institutions
5. Farmers
6. Citizens of Bihar State through Web Site <https://aapda.bih.nic.in/>

Background

Any rainfall occurring in Tibet and Nepal, specially during Monsoon Season, affects the flow in the river system of north Bihar. However if there is absence of rainfall at the proper time either defers from commencement of agriculture operation or affect the yield of crops. Precisely, State agriculture development lies at the mercy of the proper monsoon rainfall. Similarly in summer season fire accidents are serious problem in slums and rural areas. This is mostly because of peculiars housing pattern adopted in making a rural house – generally it is built of mud walls with country tiles roofs suppressed by timber and bamboo battens and spring up in clusters. Boat Capsizing is another major manmade disaster in Bihar, which occurs mainly due to overloading of country boats.

Districts in seismic zone V - Saharsa, Madhubani, Supaul, Madhepura, Sitamarhi, Darbhanga, Araria and north west part of Kishanganj.

Districts in seismic zone IV-
E.Champaran, W.Champaran, Muzaffarpur, Gopalganj, Siwan, Saran, Vaishali, Samastipur, Patna, Nawada, Begusarai, Munger, Purnea, Katihar, Kishanganj, Banka, Jamui, Shekhpura, Nalanda, Lakhisarai

Intended Benefits

- Consolidated List of Beneficiary to be available on Portal for transparency
- Beneficiary list preparation and verification process as pre-disaster activity
- Elimination of Middleman and parking of funds at different levels

- Same software can be used for other type of disaster such as cyclone, drought etc.
- Verification of Account No., Name of Beneficiary and Account Status before transfer of funds through PFMS
- Ration Card No. can establish person family identity and eliminate same name from same family.
- Assessment of Losses to Beneficiary through geo-tagged photograph by different level of officers
- Fund disbursement cycle has been reduced through centralized NEFT/NACH facility of banks
- Complete Monitoring of Processes through IT based systems for complete automated systems
- On-line Monitoring by different level of governance regarding Beneficiary vs Demand of funds
- Reduction of Bank Account from 534 to 38+1 only
- Account Reconciliation and Preparation of Utilization Certificate with minimum time

(i) To organization

1. Reduction in data management effort with standardized practices in place.
2. Scientific planning of resources and electricity infrastructure using GIS technology has resulted in reduction of biasness.
3. Real-time monitoring of activities at various levels has improved quality of monitoring.
4. Online Reporting for various formations for the organization helps to take efficient decisions
5. Better fund administration of the organisation as up-to-date fund position is available through MIS
6. Integrated planning of activities related to disaster administration.
7. Improved grievance redressal system and maintenance of records.
8. Current Fund Position, revenue collection figures, budgeted vs. actuals and other analysis reports
9. Various analytics reports can be generated through the system.

(ii) To citizen

1. Online Enquiry and SMS alert for payments
2. Reduction in grievances due to timely disbursement.
3. Transparency in entire beneficiary management.
4. Ghost beneficiary Reduction
5. Online payment through PFMS/NPCI NACH platform.
6. Access to the services in locality through Common Service Centres
7. Enhanced grievance handling cycle and information to all stakeholders
8. Less dependency on local bank branches
9. Elimination of middlemen in entire process.

(iii) Other stakeholders

1. Banks can use for reconciliation of accounts
2. Social Audit of services can be done through Panchayat Raj Functionaries.

Current Status

1. Entire 50 lakhs beneficiary has been digitized from field formations.
2. Portal has been implemented for flood and drought victims of 2018 and 2019.
3. A sum of 2500 Crores has been transferred and managed through the system for Flood Phase-I, Drought(TatkalSahayata), Flood Phase – II.
4. Around 2500 persons have been trained to operate the portal.
5. The site has been integrated with PFMS, NPCI-NACH Platform.
6. Aadhaar Authentication/Verification has been enabled for the system.
7. Mobile App has been implemented for GrihChhati 2019 to give compensation for house damage.
8. Site is currently live for flood and drought related operations.

Process Flow

1. Beneficiary Management with uploading of Legacy Data on Portal – Pre Disaster Activity
2. Verification of Account Nos. through PFMS and Aadhaar Verification if necessary- Pre Disaster Activity
3. Survey for Compensation through existing list with provision for addition and deletion of names - Post Disaster Activity
4. Randomly Selected Sample Verification by independent Officers(MBAs in different Schemes) with geo-tagged photograph of Assets and affected persons- Post Disaster Activity
5. Finalisation of List by COs and Digitally signing the list and Forward to ADM(Disaster) – - Payment Initiation Process Activity
6. Approval of List by ADM(Disaster) and Forward Payment file to PFMS for Payment - Payment Approval Process Activity
7. Digitally signing Payment file by Disaster Department to transfer funds Directly to Beneficiary Account through Central System - Payment Transfer Process Activity
8. Response of Credit Success received from PFMS for Account Reconciliation and Utilization Certificate- Payment Reconciliation Process Activity
9. Geo-tagging of Damaged Houses through Aapda Mobile App.

Key Aspects

The objective of the project is to strengthen institutional capacity of the Disaster Management Department of Govt. of Bihar to deliver disaster related services and expand outreach of citizen care services for poor and vulnerable households, farmers in the state. The portal has been developed to build a safe and disaster-resilient Bihar by developing a holistic, proactive, multi-disaster and technology-driven strategy for Disaster Management. This has been achieved through a culture of prevention, mitigation and preparedness. The entire process and portal is the

centre-stage of the community and provides momentum and sustenance through the collective efforts of all government agencies and Non-Governmental Organization. The state of Bihar, due to its geographical and topographical situation, is highly prone to several natural and man-made hazards. Flood, Earthquake, drought, fire incidents, cyclone, boat accidents are few major hazards among all which make Bihar one of the most vulnerable states of the country. 73% of its land area and 74% of population are vulnerable to recurrent flood. 30 districts are in most sensitive seismic zone V and IV. Scanty Rainfall once in 3-4 years. Precipitation in rainy season is not so consistent, hence once in every 3-4 years 17 southern districts of Bihar have to face drought like situation. Whole of Bihar is susceptible to Cyclone, hailstorm, fire and boat accidents. Considering the requirements a complete Web, Mobile, GIS based integrated solution has been developed which is most critical with respect to the state. This is one of the critical flagship program of state which is directly monitored by state disaster response team headed by Chief Minister.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Beneficiary Registration	The beneficiary of Flood victim / Tatkal Sahayata can get registered through Local Offices		56 lakhs	62 lakhs
Account Verification	Validity of Bank Account, Active or closed etc. is done through PFMS/NPCI platform		52 lakhs	56 lakhs
Aadhaar Verification	Aadhaar Verification of Beneficiary is done through UIDAI service		43 lakhs	46 lakhs
Fund Transfer to Bank Account & UTR Numbers	Fund transfer is done through PFMS/NPCI NACH Platform along with Bank integration		32 lakhs	43 lakhs

Implementation Coverage

The project has been fully implemented in entire state covering both flood affected and drought prone districts of Bihar.

1. 38 (Thirty Eight) Districts of Bihar
2. 534 (Five Hundred Thirty Four) Blocks of Bihar
3. 8463 Panchayats of Bihar

4. 1.05 Lakhs Rural Wards
5. Citizens of Bihar State through Web Site <https://aapda.bih.nic.in/>

New Services / Enhancements

Improvements/ enhancements specifically rolled out during the last one Year:

1. Creation and Updation of Beneficiary database of 50 Lakhs.
2. Verification and validation of accounts.
3. Physical Verification of Beneficiary
4. Physical Verification and geo-tagging of Houses.
5. Aadhaar verification of each Beneficiary
6. Transfer/Release of Funds to beneficiary account through PFMS
7. Generation of Utilization Certificate.
8. Mobile App for Aapda Home Damage Assessment.
9. SMS alert to all beneficiary on each stages of processes.

Improvements/ enhancements specifically planned to be rolled out during the next one Year:

- 1 Integration with ERSS System being implemented through Home Department.
- 2 Integration with Dial 100 system
- 3 Integration with Aadhaarpayment Bridge.
- 4 Integration with SECC database for family verification
- 5 IMD alert to beneficiary through SMS.
- 6 Creation of State Citizen Beneficiary Register

Enablers

Process Reengineering

1. Identification of Beneficiary through standard principles and notification of affected panchayats and wards based on assessment and data entry from field formation.
2. Validation of Beneficiary through centralized database.
3. Validation of Bank Account through PFMS before payment.
4. Centralised Allotment System and single account for payment.
5. Reduction of No. of Bank Accounts from 600 to just 1.
6. Automated system for account verification, rejection of account and updation of accounts
7. Verification of AadhaarNumbers through UIDAI Service
8. Physical Assessment and geo-tagging of house damages through mobile apps.
9. Centralised Payment Mechanism with disbursement from State Level.
10. Reconciliation of Accounts so that utilization can be generated in time.

11. Transparency in Processes of Payments
12. Alert to beneficiary at every stage of Payment.

Technologies

1. Work flow Management System with separate roles defined for each stakeholders
2. Three tier architecture for data, application and middleware management.
3. Data Analytics to identify ghost beneficiary
4. SMS and email Integration for alert
5. Fuzzy logic for matching names of Beneficiary and name received from Bank
6. AI technique for identification and counting of objects in photographs.
7. Social media platform for analysis of comments and public requirements
8. XML based data transfer between various systems
9. API integration for offline applications.
10. Host to Host Integration with banking networks

People

State Disaster Management Apex Committee:

This is headed by Chief Minister with Ministers of various line departments, finance department as members. This also include high-level committee members at the level of Chief Secretary and Principal Secretaries/Secretaries as members. This is apex body for taking policy decision for disaster management.

State Project Core Team: NIC, Bihar and Disaster Management Department, Government of Bihar has notified officers as Project Members of project team. This also have members from administrative officers, Database Administrators etc who advices and assist during project implementation. This team is supported by a team of hired programmers well versed in adopting online web applications, GIS, mobile applications and provides technology implementation of the Project. This team work under overall supervision of Principal Secretary, Disaster Management, Government of Bihar and State Informatics Officer, Bihar.

Project Steering Committee: In order to support project it is necessary to create and train a group of resource persons who can work at HQ level and oversee progress of project and ensure smooth operations at field level. A ICT cell has been created with hired manpower and domain experts. These people have been trained on using application by Central Core Bihar team. These people not only co-ordinate with

stakeholders but also interact with field formation for collecting data. In addition, the cell motivate decision makers to use ICT in decision making process and create a ICT enabled environment for planning and monitoring.

Resource Persons at District/Division level: In order to support project at district/sub-division and Block level large chunk of data has to be uploaded regular basis various kinds of resource persons have been hired or recruited. Project is being executed on HOH mode both officers and resource persons of service organization work together to achieve the objective of the project. Kind of Parameters required at decision making is being identified by the field formations but it is being aligned with organization objective at HQ level. Field officials dealing with data have been trained and equipped both for uploading data, data standardization and also they can use ICT as a tool for decision making. Proper h/w and software infrastructure has been created at field formations for updating data. District Informatics Officer/IT Manager has been trained to use the application and provide technical support to the Project. Training has been conducted for ADMs, Cos, Executive Assistants etc.

Workshops on adoption of latest technologies: Workshops have been conducted for various stakeholders of the project to make them understand about available technologies and best practices In order to support project at division/district and Block level large chunk of data has to be uploaded on Servers at regular basis. Numerous training program has been conducted by Master trainers. Currently there is emphasis is on using Mobile technology to deliver services and gather data from field formations. In addition regular training program has been conducted through video conferencing.

Value Indicators

Learnings for Sharing

Key Learnings and best practices

- Centralised Beneficiary Management helps to remove ghost beneficiary
- Timely management of activities at critical juncture
- Reduction of Bank Account for fund disbursement
- Verification of Bank Account before fund transfer helps to identify correct beneficiary and also reduces parking of funds due to non-delivery
- Physical verification of locations, house damages
- Timely generation of Utilization Certificates

Innovative use of Technology and process changes

- Three tier architecture for data, application and middleware management.
- Data Analytics to identify ghost beneficiary
- SMS and email Integration for alerts
- Fuzzy logic for matching names of Beneficiary and name received from Banks
- Social media platform for analysis of comments and public requirements
- XML based data transfer between various systems
- Data Encryption
- Digital Signature for Data Transfer and Signing fund transfer
- GIS based flood and Drought Analysis
- API integration for offline applications.
- Host to Host Integration with banking networks

Digital Empowerment

Parameters	Earlier Initiative	New Software
1. Platform	Manual/Excel Format	SQLSERVER 2008 and .net Platform, C#, AJAX, ARCGIS Server, Silver light, IIS
2. Localization	English	English and Unicode Support
3. Online	Offline	Online Software with work flow management
4. AapdaSampoorti Portal	Not Available	on-line facilities and Mobile App
5. SMS Support	Not Available	SMS Alert and SMS Monitoring facility has been added for monitoring
6. On-line Receipt Financial Disbursements	Not Available	Direct Benefit Transfer has been done in the project
7. Help Desk and KIOSK	Not Supported	Available for Search Facilities
8. GIS Mapping Plots and other facilities	Not Done	Available with web interface
9. Mobile App	Not Available	For Enquiry and Online Reporting and House Damage Inspection
10. Dashboard	Dashboard	User based dashboards most of the stakeholders

Green Governance

- The project has tried to popularize its motto of **“THINK BEFORE PRINT - save trees” among stake holders and citizen.**
- Most of the task is being performed online
- SMS and email is used for communication.
- Documents are submitted in Scanned Copy and verified online.
- Online submission of forms.
- Online records are being processed very fast
- Online grievance redressal mechanism
- Special training sessions are conducted for participants on Green ICT and its impact.
- Avoid printing files if reading the same on the monitor will suffice.
- Use virtualization on servers, when available, to allow multiple operating systems to run on each machine.

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Self-Assessment of Property Tax

Department of Municipal Administration, Government of Telangana

T.K. Sreedevi and T.S.V.N. Thrilleswar Rao

Project Overview

To create transparency and ease to the citizen in getting service in the Urban Local Bodies of Telangana State, the Director of Municipal Administration has introduced new system of Property Tax Self-Assessment system.

This system enables the citizen to assess their Property Tax on their own by giving the relevant information online. After giving the information, system will calculate the Tax and enable the citizen to pay the required tax amount online. Once payment is made by the citizen, the system generates the Assessment number & door number for the property automatically and the same will be reflected in the property tax database. The newly constituted Telangana Municipal Act 2019 also stipulates the provision for self-assessment of property tax.

This enables the citizen to get their assessment done without visiting the ULB and any human interface. This resulted in hassle free transactions for the citizens, saving time energy, and resources thus improved citizen satisfaction and ease of doing things.

The self-assessment of Property Tax application is implemented in 72 Urban Local Bodies of Telangana State

Key Aspects

Prior to this initiative, citizens were needed to visit the Municipality to get the assessment of Property Tax and to check the status of application. Most of the times, the citizen could not get his assessment done in required time inspite of specific timeline provide under citizen charter. Many request/ complaints are raised by citizen for wrong assessment/ delayed assessment by the municipal officials. Having the provision of revision petition and appeals are not catering to the citizen grievances.

Now on introduction of self-assessment system, the citizen can assess/ calculate the Property Tax online on their own without visiting the ULB. Additionally, provision given to download the demand notice, certificate, full payment history and last paid transaction details.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Self-Assessment of Property Tax http://125.18.179.59:8081/PTSelfAssessmentTaxCal/	This system enables the citizen to assess their Property Tax on their own by giving the relevant information online. After giving the information, system will calculate the Tax and enable the citizen to pay the required tax amount in online. Once payment is made by the citizen, the system generates the Assessment number & door number for the property automatically. The same can be downloaded/Printed by the citizen. This eases the citizen to get their assessment done without visiting the ULB and any human interface. This resulted in hassle free transactions for the citizens, saving time energy, and resources thus improved citizen satisfaction and ease of doing things.			Till now 1396 properties are self-assessed.
Revision Petition http://125.18.179.57:8081/PTRevisionPetition/getassessment.do	The owners of properties are entitled to file revision petitions within 30 days from the date of service of special notice showing the property tax fixed in 39 respect of the following cases under Rules 10 and 11 of Schedule II of A.P. Municipalities Act, 1965.			From April, 2019 (New FY), ZERO revision petitions are received.
Feedback/ Grievances https://cdma.telangana.gov.in/Feedback/Dashboard.aspx	Each online service has feedback/ grievance option for citizen. Additionally, mobile based application "Citizen Buddy" (available on Play Store) also has provision for providing feedback/grievance.			Total of 216 feedback/grievance received from citizen for online services.

Implementation Coverage

The self-assessment of Property Tax application is implemented for all 72 Urban Local Bodies of Telangana State. Till Now 1396 properties are self-assessed. The implemented functionality covered all locations of the state and complete set of citizens covered under each municipal limit. The delivery channel is complete online using PC/Laptop/Handheld devices with option for Cash, DD, Cheques (Using Hand held EPOS devices), Debit/Credit card (Using Hand held MPOS devices), After the transaction is carried out successfully, citizen will be handed over with the receipt printed using the hand held machines.

Enablers

Process Reengineering

1. Citizen can calculate Tax by himself by giving property details online and can pay Tax in online without human interface.
2. Through online assessment, citizen can get unique id i.e., assessment number for the property along with door number automatically.
3. There is no interaction with officials of Urban Local Body.
4. Discretionary powers of lower staff is avoided
5. Improved transparency, and avoided human interface
6. Improved service delivery mechanism with better quality, effectiveness and accessibility of municipal services
7. Enhances and augmented tax revenues, eliminate redundancies and reduce costs
8. Provides 'single window' municipal services to citizens anywhere, anytime
9. Improves transparency and accountability across ULB operations, improves efficiency and productivity of employees.

Technologies

Online applications are fully web based and the application architecture is multi-tier and multi user. The various tiers in the existing application are UI layer, Application layer and Data storage layer. The distributed database will provide a single view of the reporting system which is based on IBM DB2 data base. Communication between applications and external systems (NIC, IGRS Dept, Mee Seva) is through Web services.

The centralized dashboard provides single, complete view of the services status rendered to citizen. The dashboard is customized to the viewing by Director of Municipal Administration, Additional Director, Regional Directors' and Municipal Directors.

People

This application is developed in the year 2002 with the partnership of in-house, external and Urban Local Body staff. However as per the changes made to Municipal Act, the software changes have been made in software to make it in line with state municipality rules.

Department/ULB staff acted as knowledge repository and took the role of knowledge sharing partners and external development agency acted as technology partners.

The training to the full staff has been provided by internal training program on how to use these applications and to bring awareness among the citizen.

Value Indicators

Learnings for Sharing

Prior to this initiative, citizens needed to visit the Municipality to get the assessment of Property Tax and to check the status of application. Most of the time, the citizen could not get his assessment done in required time frame in spite of SLA provided under citizen charter.

Upon the introduction of self-assessment system, the citizen can assess/ calculate the Property Tax online on their own without visiting the ULB. Additionally, there is provision to download the demand notice, certificate, full payment history and last paid transaction details. This online service improved service delivery mechanism with better quality, effectiveness and accessibility of municipal services. Provided 'single window' municipal services to citizens anywhere, anytime (including service payment). This improved transparency and accountability across ULB operations, improves efficiency and productivity of employees.

Digital Empowerment

This application is developed in the year 2002 with the partnership of in house, external and Urban Local Body staff. With this initiative Citizens are able to assess/ calculate the Property Tax online on their own without visiting the ULB. This reduces the manpower requirement at each ULB and saves the citizen time/resources thus improved citizen satisfaction.

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Jeevandan (Cadaver Transplantation Programme)

Health, Medical & Family Welfare Dept., Government of Telangana

A. Santhi Kumari, G. Swarnalatha and N Suresh Kumar

Project Overview

Jeevandan is a Cadaver Organ Harvesting and Transplantation System designed and developed by NIC-TS and is being implemented in Telangana State from 2014 onwards. It is an Online, Effective and Secure Application for the management of Cadaver Organ Transplantation (Single & Multi Organs like Kidney, Liver, Heart, Heart Valves, Eyes, Lungs & Pancreas) and allocation process.

Objectives

- Online registration of:(i) Organ Transplant Centres & Non-Transplant Organ Harvesting Centres (ii) Recipients and streamlined process of Approval/Decline for Single or Multi organ Recipients, (iii) Donors and Issue of Donor Cards
- Transparent rule based secure objective approval of Donors
- Online generation of Waitlist based on the criteria specified by Authorities and Sub-Committees
- Online Organ Allocation and follow up process after Organ Allocation
- Context sensitive Real Time Alerts to all Stakeholders
- MIS Dashboard for Administrators and Authorized Users

Scope(Functional)

The Special Chief Secretary, Govt of Telangana, HM & FW Dept. is **Jeevandan Chairman (CTAC)**,The Director of Medical Education is **Jeevandan Chairman (AACT)**, State Level Approval Committee, Chief Administrative Officer (Zonal Centres), Director/Incharge/Supervisor for Approving the Hospitals, Organ Recipients (Indian/Foreigner), Organ Donors (Indian/Foreigner). All the officials have their functional competency to perform their roles in Jeevandan application.

Scope(Geographical)

Jeevandan Head Office is Nizams Institute of Medical Sciences (Hyderabad), Jeevandan Zonal Center, (MGM Hospital, Warangal), Approved Hospitals in the Telangana State

Benefits:-The overall and intended benefits of Jeevandan are:-

- Jeevandan Software facilitates the Cadaver Organ Transplantation Scheme to be implemented in a transparent way and also streamline various real time issues encountered in the manual processes
- Online features eliminates the scope for errors and mal-practices and un-ethical organ trade
- Unique platform for Promotional information and Technical information about the cadaver transplantation
- Serves as a source for the Information required by the RTI

- Grievance Redressal module, MIS and Dashboard reports are helpful for effective management

Current Status

- The Jeevandan Software is being used in entire Telangana State since 2014

Key Aspects

Some of the key aspects of the project are

- Jeevandan is a web based application designed and implemented by the Govt. of Telangana in 2014 and first of its kind project initiative in India
- Organ donation became transparent and rule based, thus eliminating the scope of illegal human organ trade and any mal-practices
- Facility is provided for the Non-Transplant Organ Harvesting Centre NTOHC / OTC for updating the availability of organs from cadaver.
- Approval processes are made online thereby avoiding any delays with respect to Recipient, Hospitals and Donors
- Quick and efficient Decision Making by the Hospital authorities

Effective communication with SMS/Email Transplantation Status Alerts to the Registered Donors, Recipients & Registered Hospitals

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services Since 2013		
Online Registrations	Total Hospitals Registered	29		
	Total Donors (By Age)	719		
	Total Recipients Registered	6920		
Organs Retrieval	Kidneys	1109		
	Liver	666		
	Heart	96		
	Heart Valves	170		
	Eyes	617		
	Lungs	21		
	Pancreas	10		
	Total Organs Retrieved	2687		
Transplant Trends	Age Range	Donor Count	Recipient Count	Transplanted Count
	0-10	3	57	12
	10-20	52	136	42
	20-30	161	572	221
	30-40	124	1252	391
	40-50	134	1710	437
	50 & Above	245	3211	673
	TOTAL	719	6938	1776

Implementation Coverage

Since 2013, the Jeevandan Software is being successfully implemented in Andhra Pradesh & Telangana States. The overall implementation process has always met the targeted goals

New Services / Enhancements

In Aug'2019, 'Live Organ Transplantation' project has been initiated and currently in Development Process

Enablers

Process Reengineering

- Registration of Hospitals for Organ Transplantation Centres (OTC)&Non-Transplantation Organ Harvesting Centres (*NTOHC*) is made online
- Online central registry of patients requiring organ transplantation along with details of hospitals where they are currently receiving the treatment and basic details for cross-matching of compatibility of the donor's organs

Online workflow for allocation of organs to the registered patients strictly observing the priority prescribed under rules

Technologies

- The efficient and effective functioning of Jeevandan Scheme depends substantially on the Jeevandan Web Portal, which shall act as the back-bone for the scheme
- Any Operational issues related to domain, hosting, web portal and data will be handled by the technical experts at NIC-TS, Hyderabad
- General information relating to various entities registered / participating in the activities relating to the Jeevandan Scheme

Security of information and Privacy of the personal data of patients and donors with the help of cyber security methods

People

- Software is projected in various trainings conducted to all the officials of Jeevandan project through in-house trainings, rallies, Tele conferences & Video Conferences
- Organized Transplant coordinator trainings at all the registered hospitals
- Overall Jeevandan processes including the data maintained and displayed in Web portal is well controlled by Technical and Administrative Officials at State and regional levels

Value Indicators

Learnings for Sharing

Key Learning:

- With the help of different discussions, meetings & trainings, able to understand different Cadaver organ transplantation processes and how IT can be applied in these processes
- Role of IT in supporting all stakeholders to manage and to evaluate information coming from different sources (e.g. consultant physicians, results of laboratory investigations, Recipients and Donors etc.)
- The application of an IT system to promote evidence-based inpatient education for improving the result of transplantation

Best Practices:

- Several public awareness Jeevandan events have been conducted with the support of well noted celebrities who had pledged for their organs
- Provision has been given to display the total people pledge count which comes to 54,000 till date. This count may build up confidence in the public attracting more donors voluntarily
- By displaying various results indicators (e.g. Total Hospitals registered, Organs retrieved, Registered Recipients and Donors) more people are able to understand the significance of Organ Donations and even attracting to be part of Jeevandan Project

Process changes:

- Wherever possibility is identified, the manual processes have been automated and made easily accessible through online web portal
- Physical interaction between hospital staff and public has been reduced and adding value in terms of Time & Cost

Digital Empowerment

- With help of many awareness campaigns, public has easily accessed the Jeevandan web portal and shown interest to pledge to donate organs after their death
- Registered Hospitals and Authorities, Donors & Recipients are promptly receiving SMS/Email alerts for status updates & effective communication

Green Governance

- Prior to Jeevandan software, the Donor/Recipient registrations, approval processes and post transplantation formalities etc. utilized huge number of papers. Now, all these activities can be done online
- No Travel required for extensive document submissions and other meetings at hospital premises and saving travel cost by the Donors/Recipients

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Pensioners Life Certificate through Selfie (PLCS)

Telangana State Technology Services (TSTS), Government of Telangana

G T Venkateshwar Rao

Project Overview

Telangana State Technology Services (TSTS), Government of Telangana has developed a document-less presence-less governance mechanism that can be used by Pensioners to submit their Life Certificate through a Selfie taken over a smart phone using T App Folio, the flagship m-Governance initiative of Government of Telangana, using emerging technologies like Big Data, AI, ML, etc.

PLCS made available to citizens, through Pensioner Life Authentication module on the T App Folio, enables pensioners to submit their life certificate from the convenience of their homes, which is being attempted for the very first time in the country. The traditional process required pensioners to physically visit a designated Government office and submit their life certificate once a year to continue to receive pension. The new solution eliminates the need for pensioners to visit any government office for submitting their life certificate.

PLCS is a first of its kind solution attempted in India, that enables pensioners to submit their life certificate from the convenience of their home through a few simple steps on their smart phone, as opposed to the traditional process which requires them to physically visit a designated Government office to submit their life certificate.

The solution follows a three-factor authentication and carries out three key checks:

1. Liveness Check – To authenticate whether the Pensioner is alive by checking the liveness of the visuals captured over Smartphone's camera
2. Photo Match – To authenticate whether person's image matches with that in database of Dept of Treasury & Accounts (DTA)
3. Demographic Check – To authenticate whether the person's demographics match with that in DTA's Database and one of Govt issued IDs

The three checks help the department obtain answers validate if the

1. Pensioner is alive
2. Person submitting the certificate is the legitimate pensioner or not

The citizen can register for the service through a one-time registration submitting his/ her live photo on PLCS module on T App Folio and providing basic demographic details like Name, Father's name and address. Upon approval of the registration by the department, the pensioner can authenticate his/ her life certificate using the authentication module, track the status of the department approval and check the receipts whenever needed.

PLCS has revolutionized the traditional pension system and has provided pensioners an opportunity to submit their life certificate from the convenience of their homes, just using their smart phone. This initiative allows the 2.6 lakh government pensioners in the state of Telangana to authenticate their liveness using mobile application anytime, anywhere at a desired frequency. The solution is being integrated with multiple departments to make their pension disbursement process seamless. PLCS is being integrated with multiple other departments of the Govt. of Telangana.

Key Aspects

Pensioners Life Certificate through Selfie (PLCS) is a pioneer solution, attempted for the first time in the country. It is a unique document-less presence-less governance mechanism which has revolutionized the way pension disbursement process has been carried out in a few departments and is swiftly being integrated with multiple departments in the State of Telangana.

It simplifies the physically intensive, tedious, traditional process of availing pensions through a three factor authentication system involving – liveness check, image check and demographic check to eliminate the necessity for the pensioner to physically visit a designated Government office and submit their life certificate through a few clicks on their smart phone.

The solution eliminates the requirement of pensioners physically visiting a Government office to submit their life certificate. Instead, using PLCS, Pensioners can submit their Life Certificate from anywhere anytime.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Pensioners Life Certification through Selfie – Department of Treasuries & Accounts	Authenticates the pensioners for disbursement of pension	-	-	87

Implementation Coverage

This initiative allows the 3.5 lakhs+ government pensioners of the Department of Treasuries & Accounts in the state of Telangana to authenticate their liveness using mobile application anytime, anywhere at a desired frequency. Due to the ease and success of the solution, it is being integrated with multiple departments to make their pension disbursement process seamless.

New Services / Enhancements

The solution has been integrated with Department of Treasury & Accounts, Govt of Telangana which is responsible for disbursing pensions to most of the pensioners of Govt of Telangana.

In addition, TSTS is engaging with other departments, corporations, water board, etc. of Govt of Telangana to implement PLCS for their respective use cases. TSTS has already conducted POCs with Society for Elimination of Rural Poverty (SERP), Department of Rural Development, Government of Telangana for integrating PLCS with SERP for making the process of welfare benefit disbursement efficient and convenient.

Enablers

Process Reengineering

PLCS has automated the processes of,

- identification of Pensioners records in the database
- comparison of name of the pensioner with the name available in the database
- comparison of the photograph submitted by the pensioner with the photograph provided by the department
- Determining living status of the pensioner by analyzing the image captured over smart phone.

Technologies

- **Face Photo Liveness Verification:** The process flow of PLCS requires checking of the liveness of the person (pensioner) registering/authenticating himself/herself through his mobile phone. The check should ensure that the image of the person is actually coming from the correct and alive human being capturing a photo of himself/herself via his mobile phone. The check should naturally prevent all attempts of spoofing such as a photograph attack or a video clip attack. Liveness Technology is the term used to refer to a service that carries out such a check. The technology of face liveness detection is very niche and upcoming. There are only a limited number of players in the world that offer liveness detection services and some of them have been evaluated for PLCS suitability.
- **Deep Learning Based Photo comparison:** The process flow of PLCS also requires a check whether the live photo captured from the mobile phone is same as the photograph of the person provided by the department. The image comparison service needs to be robust enough to work over quickly, across huge volumes, variations, quality of photos, facial modifications across time and light conditions etc.
- **Demographic Matching:** A Big data and Machine learning based Demographic matching engine need to be used to carry out the comparison across all data fields between the demographic details entered by the pensioner and the demographic details fetched from the Pension database. This field is a niche one and is primarily focussed in India because of the multitudes of variations and diversity over names and address that citizens fill out in various forms.

People

Principal Secretary, IT&EC department of Govt. of Telangana and Commissioner ESD were the pioneers in identifying the need for revamp of an existing process and pioneering a solution that provides the citizen the comfort of availing an otherwise cumbersome service from the convenience of their home.

A strong technical team and a competent PMU team were set up and directed by the Commissioner. The PMU team chalked out an overall strategy, work allocation plan and timeline for the project.

Capacity building: A series of training programs for the user department, campaigns for awareness generation of the initiative are being carried out across multiple media to encourage citizens to use PLCS.

Management of Change: PLCS was conceptualized with a vision to revolutionize the existing pension process that involved drastic changes in the processes at the department's end. Several product ideation meetings were conducting to understand the requirements of the departments, crystallize the use cases to arrive at a fraud proof solution.

Value Indicators

Learnings for Sharing

Driving Adoption: PLCS has been a radical revolution in the existing pension disbursement process and driving adoption of the new process with the citizens has been challenging due to the age group of the target population of this initiative.

Implementation: Implementation of the initiative involved training the partner department in the usage of the product and creating an awareness among the citizens regarding the ease of availing the service through this application.

Process re-engineering: Conceptualization of the solution involved process reengineering of an extremely traditional process, it involved discussions with the user departments, multiple technology partners for the solution and development teams to design the solution for the use case.

Digital Empowerment

Linguistic Inclusion: T App is available in two languages – English and Telugu which doesn't limit the usage of the app to the citizens of Telangana based on the basis of language.

Demographic Inclusion: The application is available to all the citizens of the state and can be accessed just through a smart phone.

Technology Inclusion: The services on T App are accessible not just through a mobile application accessible through a smart phone but also through USSD and IVR which makes even citizens with limited connectivity benefit from the service offering

Green Governance

1. PLCS is a completely digital process and thereby, completely eliminates the need of submission of any document for the submission of the life Certificate by Pensioners.
2. The citizens using PLCS can now avail services from the convenience of their house without having to travel to a Government office or a service center. This reduces the overall carbon footprint because it limits physical travel.

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T App Folio

Department of ITE&C, Government of Telangana

Jayesh Ranjan and G T Venkateshwar Rao

Project Overview

T App Folio is a comprehensive, single-window, Mobile Service Delivery Gateway (MSDG) built by Govt. of Telangana to deliver G2C, B2C, services and to broadcast information to the citizens. T App Folio is one of its kind mobile delivery gateway that caters to feature phone users via SMS, IVRS, USSD along with the usual mobile web and apps.

For the first time in the country, citizens can now apply for government services from the convenience of their home. T App Folio aims to truly delivery Anytime, Anywhere service delivery to the citizens. Implementing such features via T App Folio, required the issuance of several GOs to respective government officers to consider certificate requests via T App Folio.

Objective of the initiative is multi-fold:

- 1. Bringing Service Delivery to fingertips - Citizen Convenience:** Before T-App was launched, the citizens of Telangana, could avail any service, for all Govt. services from various departments by visiting any of the Mee Seva Service Delivery Centres. But citizens had to physically visit any of the Mee Seva centres or Govt. Offices to obtain any of the services and different govt. departments had to invest and build their own service delivery infrastructure. This involved inconsistent, repetitive work across different govt. departments.
After launching T App Folio, Citizen Convenience has improved with respect to time and location. (Anytime Anywhere Anymode service delivery). Citizens are not required to visit government offices. (Saves time and cost for citizens) as services are provided in a jurisdiction less mode as service delivery is not linked to the requirement of having a common physical presence of the citizen and the government officer
- 2. Consistent and low-cost Service Delivery Option for Govt Departments:** All government departments can leverage “T App Folio” infrastructure for consistent and high-quality service delivery to citizens on mobile phones in an efficient and cost-effective manner. For the first time in the country, citizens can now apply for government services from the convenience from their home. T App Folio aims to truly delivery Anytime, Anywhere service delivery to the citizens.
- 3. Digital Authentication of Citizens over Mobile App avoiding a multi-stage cumbersome process:** T - App enables real time digital authentication of identity through a mobile. This would enable the citizens to provide digital verification

utilising multiple identity cards for a width of services from any corner of the state utilising any of T App's channels.

4. Single App Interface for all Apps of various Departments of Govt of Telangana:

Through the Single Sign On feature, all Apps of various Govt Departments would be accessible through T App Folio avoiding the need to do download and install multiple Government Apps on their phone. T App Folio will provide a seamless experience to citizens to move to multiple Mobile Apps without actually installing them.

5. Increased Transparency in Governance: T App Folio brings in high transparency in service delivery by government department in terms of timelines mandated by government, prescribed cost of the services, prerequisites of the service, etc. Citizens are provided with milestone linked updates through SMS to citizens. The involvement of agents & middlemen has been minimized to a large extent by use of technology and separating point of service delivery from point of decision making.

6. Increased Accountability at Government Departments: T App Folio insists and focuses on provision of services to citizens in a time-bound manner which has been prescribed in the Citizen Charter. Clear communication to citizens about the status of their application brings in information symmetry and equips citizens with necessary information.

Scope

T App Folio has about 250+ services including the top Certificate services like Birth, Death, Income; RTA services, fee payments, bill payments, informational services, location services like Mee Seva centers, Ration shops, Hy-Fi hotspots etc.

Some of the key features of T-App Folio are as follows:

- T-App Folio acts as a convergence platform for all government departments. All the government departments can leverage the technology of T- Folio to ensure consistent, economic, quick, and high- quality service deliveries to citizens on Mobile phones in an efficient and cost-effective manner
- The platform is being launched in Telugu and English (native language) for convenience of citizens. In the first phase, about 150+ G2C and B2C services of ESD are being launched
- Support all channels over phone such as App, Web, SMS, IVR, USSD, etc., T-App Folio enables the services directly at your fingertips.
- T - App provides a platform for real-time digital authentication of identity through the mobile. This would enable the citizens to provide digital verification for a width of services
- T-App Folio aims to give access of government service delivery to private developers by providing the APIs to encourage the developer community to bring innovation in the delivery of government services resulting in more choices for the citizens.

T App was developed with a vision to make all Govt. services be accessible to the citizens through a common platform, integrating services of all departments utilizing common infrastructure and allowing private developers to extend their services on a unified platform.

T App has also developed a comprehensive portals/features such as - digital authentication module, events portal, a communication module, single sign-on which can be used by the concerned departments to post information on any event organized by the department. In addition, departments may use the communication module to send out targeted invitations or notices to citizens over SMS, IVRS. T - App provides a platform for real-time digital authentication of identity through the mobile, which would enable citizens to provide digital verification for a width of services from any corner of the state utilising any of T App's channels.

T-App Folio is designed as a common infrastructure that can be used by any government department. It would otherwise be expensive and time consuming for each department to build this their own infrastructure.

This citizen-centric technology and services bring governance to the people, thus propels a digital future.

Benefits & Current Status: T App presently has 3 Lakh+ active users and has catered to transaction volume of ~5 lakh transactions that amounts to over Rs. 20Cr.

Key Aspects

T App Folio was developed with a vision to make all the state government services accessible to the citizens through a common platform, integrating services of all state departments utilizing common infrastructure and allowing private developers to extend their services on a unified platform.

T App Folio is a comprehensive m-governance solution for Anytime, Anywhere, Anyhow Delivery of G2C, VAS & B2C services through one access point One URL, One App and One Short Code, developed by the Government of Telangana. T-App folio delivers hundreds of public services to citizens accessible not just through mobile phone but also through SMS, IVRS, and USSD.

Before T App Folio, the citizens had to avail services by visiting either the department office or a designated centre. With T App, citizens can avail services at the convenience of their homes.

T-App Folio is designed as a common infrastructure that can be used by any government department. It would otherwise be expensive and time consuming for each department to build this their own infrastructure.

T App has also developed a comprehensive portals/features such as - digital authentication module, events portal, a communication module, single sign-on which can be used by the concerned departments to post information on any event organized by the department. In addition, departments may use the communication module to send out targeted invitations or notices to citizens over SMS, IVRS. T - App provides a platform for real-time digital authentication of identity through the mobile, which would enable citizens to provide digital verification for a width of services from any corner of the state utilising any of T App's channels.

This citizen-centric technology and services bring governance to the people, thus propels a digital future.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Income Certificate	Citizens can apply for income certificate through this service	-	1,519	8,141
Community Date of Birth certificate	Citizens can apply for caste certificate through this service	-	1,517	7,929
BR Mart Recharges	Citizens can do prepaid recharges through this service	-	702	7,289
Other Services			3,081	17,899

Implementation Coverage

T App Folio was launched in February 2018 with around 130+ G2C and B2C services and has now grown to a portfolio of close to 200 services of multiple departments of the Government of Telangana in both English and Telugu (native language) for convenience.

These services are supported across all channels over phone such as App, Web, SMS, IVR, USSD, etc., and are available to all the citizens of the states across all platforms.

New Services / Enhancements

Over the past one year, over 50 department services have been on boarded onto T App Folio and are currently in the process of integrating around 30 more services.

Pensioners Life Certificate through Selfie – A new service that has been pioneered, that provides pensioner life authentication and helps in the pension disbursement has been developed and rolled out to benefit over 2.6 lakh pensioners for the Department of Treasury & Accounts. Multiple other departments are in the process of on boarding this service.

In the next one year, T App would expand its portfolio of services to 250 and collaborate with various departments to drive the adoption of new age technology driven services like PLCS to revolutionize various processes in the state.

Enablers

Process Reengineering

T App has had a significant impact on Citizen Service Delivery. The services for which the citizen had to earlier go to a designated centre for can now be availed from the convenience of their home using their mobile – either feature phone or smart phone. They do not have to physically visit any of the offices anymore. For the citizens who were restricted with availing services using the internet can avail the services through an SMS, and not just through the mobile application.

Key impact of T App Citizen Service Delivery in the state.

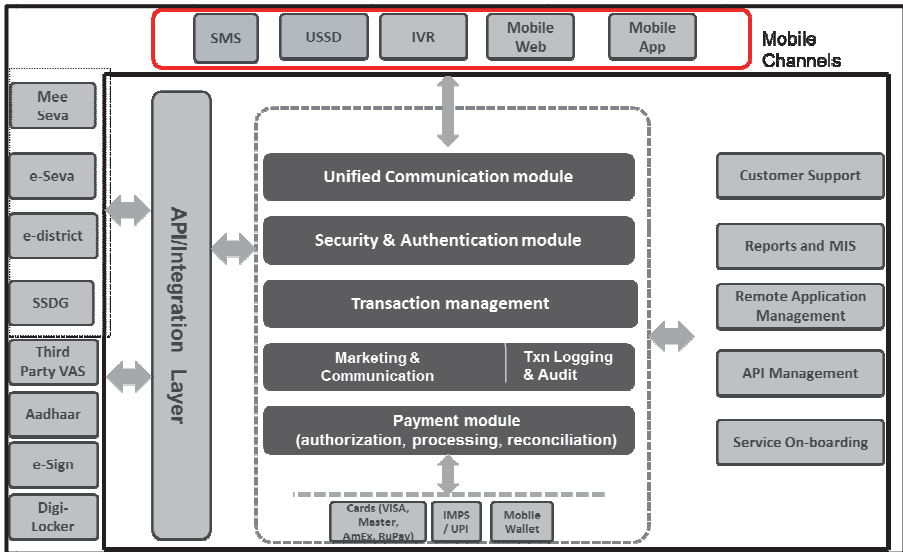
1. Convenience to citizens – Anytime, Anywhere service delivery
2. Efficient service delivery - Saves time, expense for the citizens and the departments
3. Multiple department integration - Different govt. departments can now leverage this comprehensive service delivery gateway to offer service to citizens. This ensures, quick, consistent, efficient, familiar quality service delivery.
4. Single window delivery gateway – saves time, and expense for govt. departments.

The feedback from the citizens is positive about the T App Folio on its path breaking decision to open the G2C services through mobile. Many have given a high rating for the App on design, utility and functionalities, few have suggested improvements which are being looked into to implement.

Technologies

T App Folio is a Mobile Service Delivery Gateway, set up to provide a one-stop shop solution for enabling the delivery of government services, informational services and other value-added services with an efficient and cost-effective manner. T App was developed to facilitate inter-operability across channels, payment instruments and departments to take maximum benefit of the platform.

Multiple channels of service delivery like SMS, USSD, IVR and the mobile app have been provided for the citizen to avail a service with being confined to just one platform. And services from multiple state departments, Meeseva, e-Seva etc., have been integrated to provide a single platform for all of citizen's government service needs. Multiple modes of payments like Net Banking, Credit/ Debit cards, T-Wallet have also been integrated.



To drive its widespread accessibility, services on T App can be accessed both by smart and feature phones.

People

Principal Secretary, IT&EC department of Govt. of Telangana and Commissioner ESD were the pioneers in identifying the tremendously growing volumes of e-services, gap in the financial inclusion of the state populace and a growing need of making the services available over a mobile platform for easy accessibility of both rural and urban population.

A strong technical team and a competent PMU team were set up and directed by the Commissioner. The PMU team chalked out an overall strategy, work allocation plan and timeline for the project.

Capacity building: A series of training programs, campaigns and awareness generation sessions have been carried out to explain the value add of T App and encourage citizens to use T App for a more convenient user experience.

Management of Change: Inclusion of digital solution such as T App involves a series of changes in the processes followed by various departments of the government. Several ideation meetings have been conducted both internally and with the stakeholders to establish the processes and ensure a fool-proof mechanism is established. Departments are continuously striving to bring services onto T App, understand the feedback from end users and incorporate the same for better citizen service delivery.

Value Indicators

Learnings for Sharing

On-boarding of various Govt Departments: T App Folio was envisaged to be the flagship m-Governance initiative of Govt of Telangana. It was expected that all departments will use T App Folio to deliver their services through mobile channel. ITE&C department had to conduct multiple consultations with various departments to communicate the value that can be tapped by using T App Folio. The convincing took significant efforts and ITE&C department was able to on-board services of several key departments on T App Folio. To incentivize on-boarding of other departments, several additional components were added to T App Folio such as Unified Communication Module (UCM). UCM enables a multi-channel communication between Govt departments and citizens.

Driving adoption

There are many apps available in the market which provides B2C services like Bill Payments and G2C services like utility bill payments. This was posing a challenge in the adoption of T App Folio by citizens as many of the services made available through T App Folio was already available through other channels like online portals of departments, commercial apps like Paytm, etc. Hence, there was a need to differentiate T App Folio to drive its adoption. This was achieved by having a key focus on on-boarding such services which are not available on other channels. These included certificate based services of Govt Departments. In addition, several SMS campaigns were undertaken to bring awareness among citizens about T App Folio.

Process Re-engineering: T App Folio facilitates application submission by citizens even where the application requires supporting documents. Prior to T App Folio, citizens were required to visit Mee Seva centres to apply for various certificate based services. By on-boarding many of such services on T App Folio, ITE&C Dept has given an alternate channel to citizen to apply for certificate based services as well.

Digital Empowerment

Linguistic Inclusion: T App is available in two languages – English and Telugu which doesn't limit the usage of the app to the citizens of Telangana based on the basis of language.

Demographic Inclusion: The application is available to all the citizens of the state and can be accessed just through a smart phone.

Technology Inclusion: The services on T App are accessible not just through a mobile application accessible through a smart phone but also through USSD and IVR which makes even citizens with limited connectivity benefit from the service offering.

Green Governance

The following are some of the Green e-Governance practices that have been followed and have resulted in creating good impact on Green e-Governance.

With the advent of T App, the necessity to submit physical documents has been reduced and the citizens needn't print receipts in order to avail the service. With fewer documents to print, T App ensures usage of paper for printing is reduced. The citizens using T App can now avail services from the convenience of their house without having to travel to a Government office or a service center. This reduces the overall carbon footprint because it limits physical travel.

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Voter Helpline App

Election Commission of India, Government of India

Kushal Kumar Pathak

Project Overview

Voter Helpline App is a comprehensive solution for all stakeholders providing deep information and engagement on electoral processes in a simple and effective manner. The application is available both at iOS and Android phones. The application provides convenience to all Citizens of finding names in the electoral roll, submitting online forms for electoral roll enrolment/corrections, checking the status of the application, filing complaints and receiving the reply on their mobile app. All forms, results, candidate affidavit, press notes, Voter awareness, and important instructions are available through the mobile app.

Electoral Search (#GoVerify your name in the electoral roll) is the paramount feature of Voter Helpline Application, which allows voters to search their electoral roll by entering personal Details, EPIC, or by scanning Barcode.

The information can be saved by the voter/ elector to use it as voter slip. He/ she can share this information to their contact list also.

- **Forms:** Submitting the online forms such as New Voter Registration, Update in Details and others, became very easy by the use of Voter Helpline Application.
 - **Types of Forms**
 - **Apply Online (New):** It allows the new users (Overseas also) to fill the application to register themselves as a Voter.
 - **Transfer/ Shifting:** It allows swift transfer/ shifting from one constituency to another to the users.
 - **Deletion:** This form helps the users for objecting inclusion or seeking deletion of name in electoral roll.
 - **Correction Of entries:** It allows the voters to change electoral particular through their mobile phone only.
 - **Transposition:** It allows the convenience of relocation of habitation in one constituency from one place to another.
 - **Duplicate Epic:** In case of correction in electors details or change in address the user can request to issue a duplicate Photo identity card (EPIC) with his/ her new details.
 - **Status:** Real time status of the application can also be viewed by the users on their phone by entering the application id. Each and every step is shown to provide the transparency.
 - **Save Form:** An option to save the form is also available in the application, to allow ease of access to the users.
- **Complaints:** The facility of lodging the Grievances online makes the Voter Helpline application more viable and imitating. **A Universal Helpline**

Number1950 has also been included in the app for those users, who prefer to call and register their complaints.

- **File Complaints:** Registering a complaint has never been this easy, but Voter Helpline App made it a piece of cake for its users. With the convenience of simple clicks, users can file all the Elections or Non- Elections related complaints.
- **Status:** The real time status of the complaints gives the transparency.
- **Candidate:** In order to facilitate the voters/ electors, the application has been expanded and now offers the facility to view all the details of candidates such as Profile, Affidavits, and others. The user can bookmark their favorite candidate to see the step-by-step progress.
 - **Candidate Profile:** It allows the user to view and download the profile of the contesting candidates in their mobile phones.
 - **Affidavit:** Affidavits can also be downloaded by the users, which have been uploaded by the candidates.
 - **Bookmark:** App allows the user to bookmark their favorite candidates to track their progress and get personalized results.
 - **Share:** The voters also has an option to download the profile of the candidate and share the details to their contact list.
- **Result:** Displaying the real time result on the mobile phone for the first time, is one of the crucial features of this application. It allows the users to see the authentic results directly on their phone from anywhere. The user can also view the real time results of his/ her constituency by scanning the barcode of EPIC card.
- **Search your Electoral Officer:** The application also has an option to search the Booth Level officer, Electoral Roll Officer, District Election Officer, and the Chief Electoral Officer and can make a direct call to them from the app
- **Selfie Campaign:** The Selfie campaign has been introduced during this General Election to the Lok Sabha 2019 to encourage the voters to go and vote. ECI also used the social media platform to spread the awareness and made it a full blown phenomenon.
- **News:** The voters can view all the Election or Non-Election related news and press releases through the Voter Helpline App.
- **Gallery:** The app allows the voters view and download all the images of the events, awareness creatives available on the ECI's website along with their voter selfie. Audio files and informative videos are also available for the quick understanding of the applications and Election process.
- **Manuals:** The App consists manuals of all the Applications, Regulatory Audits, and Vulnerability Mappings along with the Handbooks for the officials, media, and political parties. The voters can download these documents at any point of time.

Statistical Reports: Various statistical reports on state legislative assembly and Lok sabha for all the years in which elections were held, can be viewed and downloaded by the users through the app.

Key Aspects

The Election Commission of India designed an innovative mobile application i.e. 'Voter Helpline App' for providing seamless electoral services for the citizens. Electoral Search is the paramount feature of Voter Helpline Application, which allows voters to search their names in electoral roll by entering personal details, EPIC, or by scanning Barcode. The information can be saved by the voter/ elector to use it as a voter slip. A person can share this information with their contact list also. It allows searching of voter names from 910 million records in a fraction of a second. The features of the application is not limited to electoral search only, the users are also given the provisions for filing forms, registering complaints, and tracking the real-time status. Total number of feedback, complaints, and suggestions received from mobile app so far is 1,81,995. The application also has an option to search the details of the Chief Electoral Officer (CEO), District Election Officer (DEOs), Electoral Registration Officer (ERO), and Booth Level Officer (BLO) and can make a direct call to them from the app.

For voters' facilitation, features like hearing/ seeing the name of the contesting candidates as per the Form 7A sequence are available. The complete details of the candidates who are contesting the elections are available from the mobile app. Viewers can see their profile, party name, photograph, and their current application status. They can scan their own EPIC card and see the list of contesting candidates of their constituency. Once the candidature list is finalised, the contesting candidates list can be viewed and downloaded by the user.

Results are also available through the Voter Helpline App. The citizen can simply scan their EPIC No. from the mobile app to see the result of his constituency. The results are made available as and when the returning officer enters the round-wise data. The results are available party-wise and candidate-wise. Users can bookmark the candidates and view selective list at their convenience.

The application also allows for filing of complaints and tracking of them. The replies made by Electoral Roll Officer are instantly available on the mobile app. The application gives the viewer to download the complete content of the website of Election Commission of India right from 1950 elections. All news, circulars, election details, EVM details, publications, manuals and statistical reports are available for downloads directly from the mobile app.

Because this single app integrates all the facilities that a Voter needs, it is a fit candidate for the award.

Result Indicators Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Electoral search	Electoral Search is the paramount feature of Voter Helpline Application, which allows voters to search their electoral roll by entering personal Details, EPIC, or by scanning Barcode.	-	-	9.12 Cr searches from the mobile app.
Electoral Forms	Apply Online (New): It allows the new users (Overseas also) to fill the application to register themselves as a Voter. Transfer/ Shifting: It allows swift transfer/ shifting from one constituency to another to the users. Deletion: This form helps the users for objecting inclusion or seeking deletion of name in electoral roll. Correction Of entries: It allows the voters to change electoral particular through their mobile phone only. Transposition: It allows the convenience of relocation of habitation in one constituency from one place to another.			18,82,441 Total forms filled
Complaints/Feedback /Suggestion	The voter can register Election or Non-election related complaint with the convenience of simple clicks. Any citizen can call on a 1950 toll-free number and can talk with the agent to get Information, Feedback,			5,93,423 complaints filed

Contd...

	Suggestions, and Complaints in more than 22 languages.			
Voter Selfie	The Selfie campaign has been introduced during General Election to the Lok Sabha 2019 to encourage the voters to vote and upload their selfie. ECI also used the social media platform to spread the awareness and made it a full blown phenomenon.			7,000 photos received.
Downloads (Facility) Forms, Press Release, ECI publications, Newsletter, Important instructions, EVM Audio File, Handbook, Manual, Compendium of instructions and statistical report.	All the data including Forms, Images, Audio Files, PDF Files, etc which are available on ECI Main website can be downloaded through the Mobile App.			Total Downloads 34.36 Lacs

Implementation Coverage

As this is a new project, it was launched nation-wide for the first time. Therefore, there was no specific comparison to any numbers. As the nature of the project is soliciting citizen engagement in reporting violations, therefore, no target can be set.

New Services / Enhancements

In a massive campaign called 'Electoral Verification Program', the app has been improved to allow every citizen to view their EPIC card, link their mobile numbers and family members and then verify the details. They are now able to download the certificate of appreciation from the app.

Shortly, Voters who have verified their mobile number with the EPIC card, can download the digital EPIC card on their mobile phone. The Digital EPIC is called as Voter Vault and will provide the benefit to users to carry only their mobile phone with Voter Helpline App which will act both as identifier by way of encrypted QR code and also as the proof of identity.

Enablers

Process Reengineering

Nvsp.in has been in existence for many years, providing facility for anybody to register online, request for transfer, request for change in details and request for duplicate EPIC Card. But now, all these forms are accessible with the ease of simple clicks through the Voter Helpline Mobile app. Voter Helpline app provides a

paperless medium to fill the various forms such as - Form 1, Form 6, Form 6a, Form 7, Form 8 and Form 8a, etc. The Voter Helpline Application came live with 5 disparate technologies into one: Main website, SVEEP website, Electoral Search Website, nvsp forms, and complaint website.

The Application also provides an option to upload the required documents directly from mobile gallery or by clicking a picture from a mobile phone. The user friendly interface of the application helped in improving citizens' experience, and minimizing the complexity. The app also aims to provide a single point of service and information delivery to voters across the country. The mobile application pulls live data from ECI's dynamic portal.

Process re-engineering and process redesign allows leveraging the benefits of IT rather than just replicating existing processes. Thus the process remains the same, but automated through the use of IT. Though the enablement of IT alone cannot bring in dramatic improvements in the functioning of the system. This follows from the fact that many of the processes may be inefficient. The constraints which were present in the previous system, are no longer present or can be overcome through the use of IT. In many cases, processes were defined with compliance in mind rather than enhanced citizen services.

Additionally the infrastructure was designed keeping the most stringent requirements of reliability and manageability factors in mind. To accomplish this, Network Load Balancing Services was used to ensure the highest levels of performance and availability of the App and gateway servers.

Technologies

- Implemented design for the App using latest design pattern i.e. Micro services design pattern.
- Used In-App Push Notifications and SMS Gateway using standard protocol from third party vendors.

Architecture also ensures data security across the networks and used AES encryption for data exchange over network.

People

Citizens can browse the app, based on their own interests and learn more about the Election Process in a more engaging way. The Election Commission of India has significantly modernized this Citizen interface to accommodate a growing user-base.

Various training and awareness camps have been organised by Chief Electoral Officers of the States to popularise the application amongst the citizens. Camps in schools, institutions and various platforms were held to provide learning to citizens. Under the Systematic Voters' Education and Electoral Participation (SVEEP) programme of Election Commission of India, various budget was allocated for publicity. One such video could be seen on youtube at.
<https://www.youtube.com/watch?v=TKOpB-rZUHU>

Value Indicators

Learnings for Sharing

The Voter Helpline Application provided the facility to the voters of verifying their name in the electoral roll. Keeping that in view, a very important program called Voter Verification and Information Programme (VVIP) has been introduced by the ECI to help the citizens in the verification of their names, new registration, corrections in EPIC card, and others. Under the VVIP programme, **#Go Verify** campaign was introduced which encouraged the citizen for the verification of their names in the electoral and be prepared for the Lok Sabha Election.

Later on it was realised that videos provide more contextual and rich information than the photo. Thus a 1 minute video was given as an option in the mobile application. The awareness was also done through various social media.

Digital Empowerment

The Application provides bilingual transliteration facility (English & Hindi). The application also ensures that all the electoral services are available to citizens electronically.

Green Governance

As Voter Helpline is a simple mobile app which can be installed by users on their mobile phones by downloading from the play store, therefore there is very less footprints that it leaves.

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cVIGIL

Election Commission of India, Government of India

Kushal Kumar Pathak

Project Overview

c-VIGIL was built to report Model Code of Conduct violation during elections. The app prioritized the speedy and effective actions by authorities and promised users status report within 100 minutes. This “100-minute” rule made the app a reliable way to report violations. The 100-minute time-lines infused the energy into the enforcement staff and a sense of urgency prevailed.

- **Register Complaints:** The app allows every citizen within the election boundaries to report the Model Code of Conduct / Expenditure Violations by taking photo/ video through their mobile phones by signing into the application.
- **Anonymous User:** The app also allows the citizen to complaints anonymously, without revealing their personal details/ identity.
- **Geotagging:** The app automatically enables a geo-tagging feature when users switched on their camera in the cVIGIL to report a violation, which helps the field unit to know the precise location of the incident.
- **Live Status of complaint:** Real-time tracking allows citizens and other officials, to check the progress of complaints.

Investigator App

cVIGIL Investigator app has been made for the Field units like Flying Squads & Static Surveillance Team to investigate the cVIGIL Citizen cases and conduct Suo-Moto case reporting.

- **Instant Action on incidents:** The application forced the Field Unit to reach the spot of the incidence within 15 mins and only then they could upload their report.
- **Suo Moto:** One of the important byproducts of the cVIGIL was the use of cVIGIL by Field Units themselves to file suo-moto cases.

cVIGIL Monitor App

cVIGIL Monitor App provides access to all cases filed in the jurisdiction to Chief Electoral Officers (CEOs) and ECI Officials from where they can emphasize and highlight important cases for speedy investigation and redressal.

- **Monitor Live Case:** This technology was used for live case monitoring of all the violation complaints directly through mobile devices.
- **Emphasize/ Highlight cases:** Officers can highlight/ emphasize the cases for prompt resolution and enforce the time-bound pressure on flying squads.

cVIGIL Decider App & RO Dashboard

cVIGIL Decider App/ Dashboard enables the District Electoral Officer (DEO) / Returning Officers (ROs) to decide upon the cases which are sent by the Investigator at the convenience of their mobile phones or system.

- **View Live cases:** Decider can access all MCC Violation complaints and check real-time progress.
- **Action on Cases:** Decider/ Returning Officer can take actions such as Drop, Decide, and Escalate on cVIGIL cases after the report submitted by the Field Unit.

cVIGIL Portal

The robust monitoring of cases using cVIGIL portal allowed the Chief Electoral Officers, Returning Officers and the Commission to investigate delays, incorrect decisions, and recurring instances of lethargy.

- **Assignments of cases:** The vigorous case allocation using cVIGIL portal allowed the officers to create a robust response/ redressal system.
- **Real-time status tracking of field units:** Real-time tracking of the field units enforced the time-bound pressure on them, but on the other hand, making sure that they actually reach the location of incidence.

One of the fundamental shifts the cVIGIL brought in its 77% success was the GIS based location tagging. For example, the app automatically enabled a geo-tagging feature when users switched on their camera in the cVIGIL to report a violation. This meant that Flying Squads could know the precise location of a reported violation, and the image could be used as evidence in a court of law. Here then is a case where the First Information Report also becomes critical evidence, should a legal process unfold. Technology-enabled enforcement mechanisms ensured that flying squads were at the site of a reported transgression.

Key Aspects

India being the largest democracy requires strict enforcement of Model Code Conduct (MCC) to ensure free and fair elections. From past many elections, the enforcement machinery has been brought into place which used to identify and take appropriate action against violators. So far, the complaints about violations of Model Code of Conduct often could not be followed instantly, leading to the violators escaping detection from the action squads. Also, the lack of any documented evidence in the form of pictures or videos was seen as a hurdle in verifying a complaint. Further, the absence of a robust response system to quickly and accurately identify the scene of occurrence of violations with the help of geographical location details hampered election officers' ability to apprehend the violators.

The Election Commission of India designed and developed a simple yet effective mobile app called as cVIGIL. At its core, cVIGIL draws on the idea of community policing. It spurs citizen engagement, and participation in the enforcement process. It assumes officials need citizens, and a trust-based partnership to properly conduct

elections. The mobile application facilitates that partnership by creating awareness, building trust, and confidence.

cVIGIL has firmly taken root in the Electoral System of India. The initiative of the Election Commission of India will not only go meaningfully a long way in engaging Citizens in the electoral process but also meaningfully bringing in a level playing field. Over the next few years, cVIGIL will become the linchpin of democracy. However, there are many things that need to be done. The first thing is about its reach. A lot of efforts need to be made for its availability to the common man.

By introduction of cVIGIL in the Lok Sabha elections saw 92% of cases getting registered through cVIGIL mode in comparison to other modes such as letters, phone calls or by post. A whopping 99 % of cases were resolved during the lok sabha phase and every case which was resolved through the cVIGIL was informed to the complainant.

cVIGIL is a major transformative application which has simplified the recording, reporting and resolving the complex model code of conduct violations during the elections period. By use of this technology, Election Commission of India has ushered in an era of greater transparency and involvement of common man in the electoral process. As citizens become more aware about it, the more they will feel part of the elections and better will be the participation in democracy.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Reporting Model Code of Conduct Complaints/ Incidences	Citizens can report violations securely, and easily; and that the Commission acts on those complaints speedily and effectively; is bound to deter violators.	-	-	6,99,203 Cases Reported

Implementation Coverage

As this is the new project, it was launched nation-wide for the first time. Therefore, there was no specific comparison to any numbers. As the nature of the project is soliciting citizen engagement in reporting MCC violations, therefore, no target can be set.

Enablers

Process Reengineering

C-Vigil was built on a back-end platform that prioritized speedy and effective action by authorities. To this end, the app promised users status report within 100 minutes. This “100-minute” rule made the app a reliable way to report violations. To illustrate

the point, consider a complaint that enters the C-Vigil system. A 100-minute countdown starts, with several in-built checks: the nearest “flying squad” of the Commission had to accept or acknowledge the complaint within 15 minutes; complete a preliminary inquiry in the next 30 minutes; and the returning officer decides the case in the next 50 minutes. The 100 minute time-lines infused the energy into the enforcement staff and a sense of urgency prevailed. Though the time was indicative, it brought almost 60% of the cases i.e. over 85,000 cases that were resolved in 100 minutes or less. A robust case allocation and monitoring system allowed the Chief Electoral Officers (CEOs), Returning Officers (ROs) and the ECI to investigate delays, incorrect decisions, and recurring instances of lethargy.

One of the fundamental shifts the cVIGIL brought in its 77% success was the GIS based location tagging. For example, the app automatically enabled a geo-tagging feature when users switched on their camera in the cVIGIL to report a violation. This meant that flying squads could know the precise location of a reported violation, and the image could be used as evidence in a court of law. Here then is a case where the first information report also becomes critical evidence, should a legal process unfold. And, technology-enabled enforcement mechanisms ensured that flying squads were at the site of a reported transgression. Finally, a delivery-oriented culture was promoted among ECI officials by rewarding speedy and effective action. Officials could see a leader board, on which the names of the most effective officers were displayed. This encouraged colleagues to act with greater speed, and take complaints more seriously when their own turn came.

Citizens reported quotidian transgressions, and the ECI promptly dealt with them. In doing so, ECI created a culture of deterrence. Political actors and potential code violators knew that a vigilant citizenry and determined election machinery was watching their every step. This is bound to have a salutary effect on violators.

Technologies

- Application architecture is horizontal scalable and robust. Application design is based on latest design pattern i.e. Micro services based.
- Developed number of micro services which are loosely coupled.
- Used Google Maps APIs extensively in different Mobile Apps.
- Used In-App Push Notifications and SMS Gateway using standard protocol from third party vendors.

Architecture also ensured data security across the networks and used AES encryption for data exchange over network.

People

The cVIGIL is android and iOS based application which is available free for download and use by Indian citizens. Once the elections are announced, the cVIGIL becomes operative in that location based upon the GIS Location. Each and every state, district and assembly constituencies have been demarcated in the maps. Once the

application becomes available, citizens can click the photo / video / audio along with geo time stamping of the location and send it to the respective Returning Officer.

Various training and awareness camps have been organised by Chief Electoral Officers of the States to popularise the application amongst the citizens. Camps in schools, institutions and various platforms were held to provide learning to citizens.

Under the Systematic Voters' Education and Electoral Participation (SVEEP) programme of Election Commission of India, budget was allocated for publicity. One such video could be seen at youtube at

https://www.youtube.com/watch?v=YTjVY9i_Hfl

<https://www.youtube.com/watch?v=FDqDKSipTDA>

The cVIGIL Mobile Technology also empowered the enforcement agencies, especially Field Units, which included Flying Squads, Static Surveillance Team, Video Surveillance Team etc. in identifying the location of incidence on-the-fly, getting the cVIGIL case along with the photograph or video on the mobile, and the best of all they need not create any paperwork for cVIGIL cases, as they simply had to file the report through the application itself. There were a total of 45892 field units, which were formed and 78782 Flying Squads staff were there. One of the biggest challenges is to prevent slack in the system, especially when it is so huge to manage. For the first time, the technology was used as a monitoring tool too. The cVIGIL Investigator enforced time-bound pressure on Flying Squads, but on the other hand, making sure that they actually reached the location of incidence. The application forced the field units to reach the spot of the incidence and only then they could upload their report. This way, technology made the common man believe in the power of the cVIGIL too when they saw Field Units reaching the spot within 15 minutes.

Value Indicators

Learnings for Sharing

The initial concept was to simply allow citizens to report the model code of conduct violation by sending a photo directly to the Returning officer to take action. However, as we experimented, this was fraught with danger of cross party attacks and wrong reporting. The exact location was not available and the address given by citizens would most of the time not accurate.

Similarly, an old photo would be sent as part of the model code of conduct violations in the recently conducted elections, thus wasting precious resource and energy of law enforcement agencies. Thus the application evolved with provision of auto capturing of location, allowing only live photo to be captured and enforcement of time. This trio ensured that the evidence through cVIGIL can be fairly relied upon and acted upon on time.

Later on it was realised that videos provide more contextual and rich information than the photo. Thus a 2 minute video was given as an option in the mobile application.

Digital Empowerment

The application is very simple to use and report the MCC violations. The applicant can report the violation in a simple guided interface.

Green Governance

As cVIGIL is a simple mobile app which can be installed by users on their mobile phones by downloading from the play store, therefore there is very less footprints that it leaves.

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PCTS App (Pregnancy Child Tracking & Health Services Management System)

Health & Family Welfare Department, Government of Rajasthan

Tarun Toshniwal and Anju Mittal

Project Overview

PCTS App, the App of PCTS (Pregnancy Child Tracking & Health Services Management System) designed and developed by NIC Rajasthan is a tool for service delivery for the Department of Medical, Health & Family Welfare, Government of Rajasthan covering all functions related with RCH (Reproductive & Child Health).

Before PCTS App, there was a time gap between occurrence and reporting of the health services provided to the beneficiaries by the ANMs. The ANMs had to travel 10-50 Kms to reach their respective PHC (Primary Health Centre) / CHC (Community Health Centre) / data entry point to update the service delivery data on PCTS. Also, the ANM had to search the service registers to prepare the list of beneficiaries to whom services are to be provided on a particular day / month. To overcome these issues, the PCTS App has been developed.

The PCTS App facilitates ANMs to capture RCH details from source for various health services provided by them to the beneficiaries at village level on Real Time basis. It includes :

- **Monthly Work Plan** – Now there is no need to prepare any due lists manually by the ANMs as App provides the monthly work plan of individual ANM. The work plan includes the beneficiary wise details of due services (ANC, PNC & Child Immunisation) during the month. This gives name of beneficiary, service name and date when service is to be provided.
- **Case Details** - It provides details of services delivered to individual beneficiary.
- **ANC (Ante Natal Care)** - It gives the list of beneficiaries (pregnant women) whose ANC is due. It also helps ANM to capture the ANC details.
- **PNC (Post Natal Care)** - It gives the list of beneficiaries due for PNC and helps to capture the details of PNC.
- **Child Immunisation** - It gives the list of children due for immunisation and helps in capturing the immunisation details.
- **Maternal Death** - The details of maternal deaths are being entered by using this option.
- **Infant Death**- The details of infant/child deaths are being entered by using this option.

- **Contact List** – It provides the contact list of the officers / officials posted at all levels of the department with Phone Dialer facility.
- **Educational Videos** – It also provides the educational videos for the ANMs and the beneficiaries.
- **Dashboard** - The App also provides the Monitoring Dashboard for the department.

In addition, PCTS App helps in Geo Tagging of Health Facilities. It also works as a decision support system for the ANMs. The App has been rolled out for all more than 20 thousand ANMs posted at more than 16700 government health institutions spread across the state.

The PCTS App is a Unicode enabled App with complete user interface in Hindi. It has Role based user authentication to access the App. It is integrated with ASHA-Soft for online DBT to ASHA Sahyoginis. Payment for incentives to all more than 51 thousand ASHA Sahyoginis are made through this system.

Key Aspects

The Pregnancy, Child Tracking & Health Services Management System (PCTS) App is a gigantic step for improving maternal and child health care in Rajasthan. It helps the Rajasthan government to reduce infant and maternal mortality and is better placed in terms of providing efficient health services to pregnant women and children. Planning and monitoring of health services has improved at every level of health administration.

The App covers entire state which includes more than 20000 ANMs and other officials located at all more than 16700 government health institutions spread across the state. The system makes it possible to monitor each of these health institutions online and facilitates to maintain details of individual beneficiary getting services from them.

The App also facilitates Geo-Tagging with capturing of service details to check and monitor for providing timely health services at door step.

The project is nominated under the PROJECT category. CSI SIG e-Governance is a prestigious award for ICT projects and PCTS App is very suitable project for nomination in the category.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
ANC	ANC (Ante Natal Care) checkups being provided to the pregnant woman by ANM.	27,21,997	28,39,759	39,54,088

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PNC	PNC (Post Natal Care) services are being given to the woman and new born child within 42 days of delivery.	34,80,312	34,99,765	44,92,539
Immunisation	Data of child immunisation is being captured under this service. Vaccination of child is being done upto the age of 16 yrs since birth.	1,45,90,409	1,59,73,045	1,93,90,416

The Services delivered through ICT intervention

- ANC check-up chart for individual pregnant woman who has registered at the Health centre
- Immunisation schedule for every child
- Expected schedule of deliveries for ANM
- Automatic calculation of vaccine requirement for every institute
- Automatic identification of cases which need counseling for sterilization
- Online availability of mobile nos. of institution in charge doctors, ANMs, ASHA etc.
- Graphical analysis on key indicators
- State level dashboard for all parameters with drill down for District, Block, PHC and Sub centre.
- No latency data. Real time data is now being captured in PCTS through PCTS App.
- The PCTS App is used as a tool for service delivery. Manual registers are not required.
- There is also no need to prepare any list of due cases manually.

Implementation Coverage

100% services of the department involving mother & child health are fully covered with this ICT intervention.

Geographical Coverage

All government health institutions including 113 hospitals, 119 city dispensaries, more than 610 community health centres, about 2360 primary health centres and more than 13500 health sub centres spread across the state.

New Services / Enhancements

- Mobile App for citizen to be launched in next 3 months as per the direction of GoR.
- Development of App for Household Health Survey conducted by Field officials (ANMs & ASHAs) every year is initiated and will be launched in next 6 months.

Enablers

Process Reengineering

- a. Major front end process changes and implemented
 - Every pregnant woman and new child is assigned a unique ID which helps in tracing the health records, immunization history etc.
 - Multiple channels in data reporting have been done away. This has improved speed of communication between departmental units.
 - Processes involving Manual Data Compilation at PHC, CHC, Block PHC, District and state levels have been completely abolished.
- b. Major back end process changes and implemented
 - User friendly input forms have been designed which make it simpler for the ANM at sub centre to enter real time information. Minimum effort is required in data capturing.
 - System outputs like Immunisation charts, delivery schedules, and ANC schedules have been introduced, which help in better resource planning.

Technologies

- a. Disaster Recovery & business continuity plan has been planned and Disaster Recovery centre has been proposed to be at Jodhpur.
- b. Developed using web & Android technologies and hosted on high end servers.
- c. The web API has been deployed in the secure environment of data centre of NIC with adequate security provisions including firewall. Role based password protected access has been given to the users. Salted SHA-256 hashing algorithm used for password encryption.

People

- a. Development and technical support team comprising of officers of NIC is located at Jaipur. Mobile and e-mail support is extended to all the field units. Implementation monitoring is through the demography cell of Medical Health & Family Welfare department.
- b. In order to initiate change, user appreciation of the system was a mandatory requirement. As such user awareness and user training were given due importance. Adequate written instructions were provided by NIC to all the user locations. Video Conference sessions of PCTS App were conducted for all ANMs.
- c. At the level of Additional Chief Secretary and the Mission Director NHM, the implementation of the project had been taken up as one of the top most priority.
- d. Funded under National Health Mission by the Medical, Health and Family Welfare Department, Government of Rajasthan.

Value Indicators

Learnings for Sharing

- Initially the ANM and other officials have resistance to use their mobile. To resolve this issue, the department has sanctioned a fixed amount for the officials for using the App.

- Training to the field officials located at last mile at village level was the main issue. To overcome this problem, NIC and the Department jointly organized regular video conference based training sessions for ANMs and other officials.
- Facility of Geo-Tagging has been given in the App to check and monitor for providing timely health services at door step.
- There is no need to prepare any due lists manually by the ANMs as the PCTS App has been enriched with the monthly work plan of individual ANM.
- All Input forms to capture the details of services are designed in such a way that ANM can update details of services easily with minimum entries.

Digital Empowerment

- Payment for incentive to all more than 51 thousand ASHA Sahyogin is working across the state are being made through DBT by this system. Annually more than 120 crore rupees are being transferred to ASHA's bank account.
- Rajasthan being Hindi speaking state, all user interfaces are provided in Hindi (local language).
- The App has been developed to cater the needs of all the stake holders such as pregnant women, their children, field level officials including ANMs & ASHAs and all the administrative officers at state, district and block level.

Green Governance

PCTS App is a Green e-Governance initiative.

The App provides e-SDRs (Service Delivery Registers) to all more than 20000 ANMs. The manual service delivery registers maintaining at all health institutions are not required.

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Harnessing Digital Technologies for Empowering Stakeholders – NALCO

Government of India

Subrata Mohanty and R. Vijaya Chakravarthy

Project Overview

Objective

To empower stakeholders by way of providing relevant information on near real-time basis

1. Self-service web applications for employees.
2. Mobile Apps for Customers, Vendors, Retired Employees, Contractors and Citizens in general for information dissemination.

Scope

To provide a medium (Mobile App &/ Portal) for online access for submission and tracking

Stakeholders

The stakeholders are the Employees, Customers, Vendors, Retired Employees, Contractors and Citizens in general.

Benefits

The identified benefits have been

- Improved efficiency of administrative tasks.
- Transparency of information.
- Updated information.
- Improved employee morale.
- Enhanced data security.
- Reduced environmental footprint.

Current Status

Majority of the stakeholder are covered and efforts are being made to bring each one on board. Regular enhancements are being made to the system to provide better and more information based on feedback from the system.

Key Aspects

1. Shows ongoing initiative, leadership and dedication
2. To encourage and exemplify the virtue of empowerment
3. Demonstrate innovation or creativity in delivering lasting results
4. Improved efficiency of administrative tasks.
5. Transparency of information.
6. Use of Digital Technology for ease of doing business.

Result Indicators

Services

Name of e Service	Brief service description with benefits		Volume (Nos) of Services year wise		
		Metric	2016-17	2017-18	2018-19
NISARG	For Public Mobile App for General Public to remain connected with the organization by knowing CSR activities of NALCO and engaging in two-way communications through feedback, suggestions and grievance redressal system. BENEFITS 1. Raising awareness on Nalco's CSR initiatives 2. Online access to information.	No of Downlo ads	2	24	68
NAMASYA	For MSE Vendors Mobile App for MSE Vendors to remain connected with the organization by knowing various policies/guidelines/events/sourc ed products, MSE registration, viewing bill status and engaging in two way communications through feedback, suggestions and grievance redressal system. BENEFITS 1. Online business transactions 2. Online access to information 3. Defined channel for two way communications	No of Registr ations	1	10	146
NAGINAA	For Aluminium Customers Mobile App for Customers. It provides details of Nalco's products, points of sale, product price, MOU scheme and other related information to interested customers. Existing customers can know their lifting details against MoU targets, despatch details, truck placement plan, and account summary. BENEFITS 1. Online status of Material	No of Registr ations	-	256	315

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	and Financial data. 2. Defined channel for two way communications through feedback, suggestions and Grievance redressal.				
HameshaN alconian	For Retired Employees Mobile App enabling retired employees to remain connected with the organization by way of Online Medical Claims, access to related policies, circulars, eMagazines. BENEFITS 1. Online access to information. 2. Well defined channel for Grievance redressal.	No of Registrations	6	257	565
Contract Labour Management System	For Contractors Contractor Portal for Managing contracts with worker management like allocation to Contracts, Gate pass processing, Safety Processing, Attendance regularization and final wage payment for every month. BENEFITS 1. Worker master 2. Worker Allocation 3. Safety and Gate pass 4. Processing with multiple approvals 5. Attendance processing 6. Wage Processing	Enrollments	1000 Workers; 25 Vendors	3000 Workers; 140 Vendors	3196 Workers; 180 Vendors
Attendance	For Employee Integrated Attendance Management Systems through Bio-Matric Punching. BENEFITS 1. Online access to punch / attendance data.	Employees	6961	679	6324
Leave	For Employee Online processing of attendance and leave application system for all employees.	No. of Transactions	128563	137368	135299

	BENEFITS 1. Online and paperless application workflow 2. Saving time and efforts by employees and processing departments 3. Digitalization of data and usage of data for analytics in decision support system				
Loans	For Employee Online Loan System for enterprise level loan data management for all type of loans and advances like Special Advance, Composite Personal Advance and Motor Vehicle Loans. BENEFITS 1. Employee friendly online environment.	No. of Loan Requests	45	469	2489
Tour & Travel	For Employee Travelling Allowance system is developed to 1. Improve employee participation in latest in technology and trend in ESS mode. 2. Interactive, quick, easy, approval and 5 level of easy recommendation of tour programs. BENEFITS 1. Uniform rules and platform. 2. Easy MIS. 3. 90% paperless excluding the statutory hard format requirements. 4. Reduction of functional man hour cost and saving of company claims.	No. of Tour Requests	-	-	29354
Medical Claims	For Employee Centralized System for employee online claims of medical bill with tracking facility. Provision for	No. of Medical claims	-	-	18573

Contd...

	Companywide statistics on medical claims BENEFITS 1. Online application of medical claims 2. Tracking of applied medical claims. 3. Online approval 4. Management Statistics				
Property Return	For Employee Online entry and processing of Property Returns by employees (NALCO Property Return System and Lokpal and Lokayukta Property Return System) BENEFITS 1. Online and paperless application workflow 2. Saving time and efforts by employees and processing departments 3. Digitalization of data and usage of data for analytics in decision support system	No. of Returns	333 +1672	349 +1716	453 +1609
Scholarship	For Employee Online application and processing of Scholarship for children of NALCO Employees BENEFITS 1. Online and paperless application workflow 2. Saving time and efforts by employees and processing departments 3. Digitalization of data and usage of data for analytics in decision support system	No. of scholarship requests	286	233	200
My Data	For Employee Individual oriented Human Resource Information System(well known as 'My Data') provides Employee self-information of Punch Attendance, Leave balance, Pay Particulars, Loan Balance,	No. of Employees	6961	6790	6324

	Income tax, Payslip, Saving(LIC, TIG, etc.), PF & NPS Balance, Medical, Telephone, and TA Bills, Miscellaneous reports, PRP Statements, Appraisal Ratings, and Capex performance. BENEFITS 1. Payroll and employee information errors reduced 2. Single source for Employee self-information and transactions from different applications.				
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Implementation Coverage

NISARG	The Application covers all envisaged functionalities required for CSR Application
NAMASYA	150 MSE Vendors are using the App
NAGINAA	708 Active and Prospective Customers
Hamesha Nalconian	862 retired employees registered on the App/Portal
Contract Labour Management System	7196 active Workers allocation completed
Attendance	All Employees (6324)
Leave	All Employees (6324)
Loans	All Employees (6324)
Tour & Travel	All Employees (6324)
Medical Claims	All Employees (6324)
Property Return	All Executive Employees (1747)
Scholarship	All Employees (6324)
My Data	All Employees (6324)

New Services / Enhancements

NISARG	1. App was enhanced as per requirement in the MIS Reporting part.	1. Odiya Version to be implemented
NAMASYA	1. Bill Tracking Feature was implemented	1. Planned to cover all other type of vendors through enhanced or separate App and Portal.
NAGINAA	1. Push Notifications on price alerts	1. User Experience Survey 2. Domestic Alumina Customers to be included
Hamesha Nalconian	1. Secure Site (https://) 2. Inclusion of ePublications	1. SoS system - Button on App to intimate identified well-wishers on an

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		Emergency situation with location details linked to Google Maps
Contract Management System	1. Fully automated Safety and Gate Pass clearances. 2. Wage and attendance Processing	1. SMS, email integration
Attendance	1. Program Fine-Tuning for better Performance. 2. Screens for Easy Navigation.	1. HTML-5 with ASP.Net Framework 4.5
Leave	1. New rules were implemented to streamline employee discipline 2. Data Analytics was used for various types of HR Analysis activities	1. Extend the features through Mobile App.
Loans	Program Fine-Tuning for better Performance.	1. Data Analytics
Tour & Travel	1. Fine Tuning of TA bill and approval screen, inclusion of Auto DA calculation, Bulk Payment options, Summary JV, Recovery Screen and recovery transfer, Mismatch Statement.	1. SMS, email integration
Medical Claims	1. Included Claim for Glasses and Aids 2. Provision for identifying bills with Non-availability certificate against in-house medical store.	1. SMS, email integration
Property Return	1. Enhancement in data search and consolidation of both PRS Systems	1. Data Analytics
Scholarship	1. Reports for different categories.	1. Application enhancement for increase in scholarship amount.
My Data	1. Report for Loan Repaying Capacity, PRP statements, Income tax Annual Report Non-Executive Wage Revision Statements.	1. Performance optimized. 2. Single Dashboard

Enablers

Process Reengineering

1. The physical process of submitting applications for various facilities (Leave/Loans/Scholarship/Medical claims, Tours & Travel, etc.) was re-engineered to a digital platform.

2. Online approval based on delegation was enabled.
3. Moved from Sybase database to SQL database

Technologies

Based on the targeted stakeholders, two major technologies were adopted

1. ASP.NET is an open-source server-side web application framework designed for web development to produce dynamic web pages, accessible on every desktop.
2. Java & Xamarin- Single technology stack to Code for All Platforms with “close to native” performance.

People

As identified during the design phase the major enabler for a successful project are the people.

1. For a sustained and impactful delivery of value added services the first and foremost activity was to take ownership of the project.
2. Internal teams were identified and enabled to lead modules independently
3. Meticulous planning for communications to handle change management
4. Buy-in of Top Management support, very essential and crucial for any project of such magnitude.
5. Launch/Release of individual milestones was well strategically planned and carried out with lots of fanfare.

Value Indicators

Learnings for Sharing

Challenges & How we overcame

Inadequate Skill sets on web domain: Outsourced the development while retaining the design in-house.

Scope creep: Effective project management.

Information Integration: Critical information in SAP (Transactional System) was maintained on a staging server for access by all non-SAP systems. All Master data maintenance modules of non-SAP systems were disabled.

Application Security: Adopted secure system engineering practices

Documentation: From design to self-help manuals, every step is documented.

Key learnings

1. Active involvement of process owner resulted in effective implementation
2. Adopted responsive design pattern in coding resulting in common code for all screen sizes.
3. Decentralized modular development by plant IT teams resulting in parallel application development, Application maintenance ownership by respective plants IT teams and broad basing the technical skills.

Best Practices

1. Authentication and authorization via MS membership scheme
2. A two system landscape (Development-cum-Testing & Production)

Digital Empowerment

Adoption being the main bottleneck: Sections of Employee were/are unable to manage the change to online platforms: Virtual kiosks have been enabled in modules for competent colleagues to help.

“Train the trainer” was adopted successfully to reach out to varied stakeholders thereby creating and expanding the expert base.

Explicit Circulars were issued by Module owners with the scope and grievance redressal mechanism.

Every Module contains Standard Operating Procedures explaining the steps for operations.

Mobile Apps were launched at opportune moments where reach could be maximized

1. Hamesha Nalconian: App was launched during a function for Retired employees where about 200+ retired employees were present.
2. Namasya, Nisarg & Naginaa has a very high profile launch by Central Government ministers at events attended by targeted stakeholders. This results in wider publicity to reach intended stakeholder.

Green Governance

1. One of the major purposes of the project was to reduce usage of paper. Most of the processes are paper-free. Some modules have reduced the paper usage by about 50%.
2. Server Virtualization was introduced to save on power and hardware cost.
3. Servers deployed in a state-of-art data centre where the environment is precise and controlled. This results in major savings on power.
4. Use of multi-channel Video conferencing resulting in minimizing official travel

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Kanya Utthan Yojana DBT Portal

Social Welfare Department, Government of Bihar

Atul Prasad, Shailesh Kumar Shrivastava and Rajesh Kumar Singh

Project Overview

The primary objective of the Mukhyamantri Kanya Utthaan Yojana is to eliminate child mortality rate, female foeticide and child marriage cases in society. This scheme aims to inspire girls towards education and provide them financial help right from their birth till they get graduated through which the girls may get a better life. The Government has made the scheme available to all girls of Bihar state without any discrimination. The scheme is being implemented by three departments of the state govt. namely Social Welfare Department, Education Department and Health Department. An online portal has been developed for ensuring registration of beneficiary at all the levels of the scheme.

The following are the list of benefits under Mukhyamantri Kanya Utthaan Yojana

S.No.	Stages/Conditions	Amount Details
1	On the birth of a girl child	Rs. 2000
2	After attains one year	Rs. 1000
3	If whole Immunisation is completed within two years	Rs. 2000
4	Class One admission	Rs. 600 (For uniform)
5	Between 3 rd to 5 th Std	Rs. 700 (For uniform)
6	Between 6 th to 8 th Std	Rs. 1000 (For uniform)
7	Between 9 th to 12 th Std	Rs. 1500 (For uniform)
8	For graduation	Rs. 10,000
9	After the completion of graduation	Rs. 25,000

- Rs. 54,100 from birth to the end of graduate education.
- The Government provides an incentive of Rs. 2000 to the parents at the time of birth and also a sum of Rs. 5000 will be given to the parents on the maturity of the girl child after 20 years.
- The beneficiaries under this scheme will get the amount in their account at the fixed time frame by the government.
- The government has allocated a budget of Rs. 2221 crore for the implementation of this scheme for benefiting the girl child of the state.



Bihar Mukhyamantri Kanya Yojana Objective

- Decrease in infant mortality
- Reduction in female feticide
- Full vaccination of girl child
- Promote girls' birth and education
- Abolition of child marriage Making girls self-reliant
- To improve the quality of girls life.

In this financial year 2019, every girl passing a bachelor's degree has been provided assistance of Rs 25,000 under the Chief Minister's Kanya Utthaan Yojana in Bihar. This amount is being given once in the form of payment to every girl graduated from the state colleges. Incentives will be paid in spite of close division, marital status, caste, community or religion.

All the girl children of residents of Bihar are eligible under this scheme. This is considered to be a game changer scheme of upliftment of women education and reduction of female feticide. The scheme is "very progressive" which helps lift female literacy and also combat child marriage and control population surge. The portal aims to address needs of all kind of beneficiary starting from birth to passing graduation. Kanya Utthan Yojana DBT portal is a one stop solution for all the participating departments for transferring funds after proper verification of beneficiary.

Key Aspects

1. This is flagship programme of state government for uplift of girl child.

2. Mukhyamantri Kanya Utthaan Yojana is to eliminate child mortality rate, female foeticide and child marriage cases in society and this portal facilitate proper service delivery.
3. The life of project is around 21 years for each child
4. Integrated platform for covering a wide variety of services
5. Online DBT portal for monitoring progress of girl students
6. Unique of its kind in State with aadhaar authentication and smaller fund release cycle.
7. Automated work flow based processes and alerts to stakeholders on milestones.
8. Integrated framework of Web, Mobile and GIS Platform
9. AI technique used form ghost identification
10. Service upto Panchayat level and highly participative by panchayati Raj Institutions.

It is an Integrated framework for automated transaction validation and management with timeline management.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Registration at Birth				4,04,000
Registration after Immunization				1,01,000
Registration after Aadhaar Card				95,326
Payment for Dress of Students				66,03,045
Payment for Napkins				7,04,334
Payment after passing 10+2 and should be unmarried				3,92,000
Payment after Passing Graduation				1,25,000

Implementation Coverage

Improvements/ enhancements specifically rolled out during the last one Year:

1. Creation and Updation of Beneficiary database of 80 Lakhs girl child.
2. Verification and validation of accounts and beneficiary.
3. Physical Verification of Documents submitted by Students

4. Aadhaar verification of each Beneficiary
5. Transfer/Release of Funds to beneficiary account through PFMS/AEPS
6. Generation of Utilization Certificate.
7. Mobile App for Application.
8. SMS alert to all beneficiary on each stages of processes.

New Services / Enhancements

Improvements/ enhancements specifically planned to be rolled out during the next one Year:

1. Integration with external systems such as UMIS
2. Integration with PFMS/Banks
3. Integration with Aadhaar payment Bridge.

Creation of State Citizen Beneficiary Register including students

Key learnings

- Every state must have girl child up-liftment programme through single database.
- Integration with Aadhaar platform for digital identity verification
- Integration with AEPS for payment disbursement
- Involvement of Panchayati Raj Institutions/Aganwadi Kendra for Social Audit.
- Co-ordinated effort required between related departments such as education, health, social welfare.
- Digitized records access is required from universities and Board in digital mode.
- Centralized payment disbursal system
- Exhaustive training of various kinds to various stakeholders.
- Keeping track of child progress and behavior

Innovative use of technology and Best Practices

- Three tier architecture for data, application and middleware management.
- Data Analytics to identify ghost beneficiary
- SMS and email Integration for alert
- Fuzzy logic for matching names of Beneficiary and name received from Bank
- Social media platform for analysis of comments and public requirements
- XML based data transfer between various systems
- API integration for offline applications.
- Host to Host Integration with banking networks

Process Changes

1. Online Web and Mobile Application
2. Capturing mother details from PHCs itself
3. Online Application for students to apply online.
4. Role based software for Block, District and HQ Level
5. Integration with PFMS for payment release
6. Aadhaar Integration Framework

7. Online verification of student Records
8. Centralised Payment to students and their family members
9. Reduction in Payment Cycle.
10. Online verification and submission of applications.
11. Online Tracking and automated alerts

Technologies

- The application is GIGW compliant and has adopted e-Government standards notified / recommended by the GOI.
- Work flow Management System with separate roles defined for each stakeholders
- Three tier architecture for data, application and middleware management.
- Data Analytics to identify ghost beneficiary
- SMS and email Integration for alert
- Fuzzy logic for matching names of Beneficiary and name received from Bank
- Social media platform for analysis of comments and public requirements
- XML based data transfer between various systems
- API integration for offline applications.
- Host to Host Integration with banking networks

People

- **State PROJECT Core Team:** NIC, Bihar and Social Welfare Department, Government of Bihar has notified officers as Project Members of project team. This also has administrative officers, engineers, who advise and assist during project implementation. This team is supported by a team of programmers well versed in adopting online web applications and provides technology implementation of the Project. This team work under overall supervision of Additional Chief Secretary, Social Welfare Department, Government of Bihar and State Informatics Officer, Bihar. The project team consists of officers nominated by NIC along with hired programmers well versed in application development using technologies such as web applications, GIS applications, Mobile Applications, other multi-channel delivery Systems.
- **User Department Core team:** In order to support project at department level it is necessary to create and train a group of resource persons who can work at department level and integrate MIS applications with GIS. User department has formed a cell with hired manpower and domain experts. These people have been trained on using application by Central Core Bihar team. These people not only co-ordinate with Central Bihar team but also interact with field formation for collecting data. In addition the cell can motivate decision makers to use ICT in decision making process and create an ICT enabled environment for planning and monitoring.
- **Resource Persons at District level:** In order to support project at district and Block level large chunk of data has to be uploaded to department level at regular basis. Kind of Parameters required at decision making has to be identified by the

district. District officials dealing with data have been trained and equipped both for uploading data, data standardization and also they can use ICT as a tool for decision making. Proper h/w and software infrastructure has been created at field level for updating data. District Informatics Officer/IT Manager has been trained to use the application and provide technical support to the Project.

- **Workshops on adoption of latest technologies:** Workshops have been conducted for various stakeholders of the project to make them understand about available technologies and best practices. In order to support project at district and Block level large chunk of data has to be uploaded to department level at regular basis numerous training programme has been conducted by Master trainers as well as Video Conferencing. Currently there is emphasis on using Mobile technology to deliver services and gather data from field formations.

Project Management & Monitoring adopted

State Level Apex Body: This has been constituted under chairmanship of Chief Secretary, with Additional Chief Secretary/Principal Secretary/Secretary of Participating departments as members along with State informatics officer. Departments such as Education and Health are taking active part in executing various segments of the scheme.

State Level Steering Committee: This has been constituted under chairmanship of Additional Chief Secretary, Social Welfare Department with Nodal Officer of Participating departments, two Representatives from districts and Project Co-ordinator, NIC, Bihar as members.

District Level Executive Committee: This has been constituted under chairmanship of District Magistrate of respective district of Govt. of Bihar with Nodal Officers of participating departments, Two Representatives of Blocks and DIOs/ADIOs of NIC as members.

Use of new and emerging technology:

- Online System facilitating access by all Block offices, Universities, Bihar Schools Examination Board, District offices, PHCs, APHCs DHCs of the state.
- Integration of SMS service for communication [Both PUSH and PULL Service]
- SMS alert at every stages of processes
- E-mail being used as mode of communication to stakeholders.
- Help Desk and Enquiry Facilities through Website.
- Mobile App for uploading data from remote locations
- GIS technology to facilitate spatial analysis.
- SMS based reporting and DASHBOARD for stakeholders
- Use of technology in the grievance solving
- To dispose the complaints within the given time frame
- Making the process transparent

Key learnings

- Every state must have single programme for girl child progress monitoring
- Integration with Aadhaar platform for digital identity verification
- Integration with AEPS for payment disbursement
- Involvement of Panchayati Raj Institutions for Social Audit.
- Co-ordinated effort required between farmer related departments such as education, health and social welfare.
- Centralized payment disbursal system
- Exhaustive training of various kinds to various stakeholders.

Innovative use of technology and Best Practices

- Three tier architecture for data, application and middleware management.
- Data Analytics to identify ghost beneficiary
- SMS and email Integration for alert
- Fuzzy logic for matching names of Beneficiary and name received from Bank
- Social media platform for analysis of comments and public requirements
- XML based data transfer between various systems
- API integration for offline applications.
- Host to Host Integration with banking networks

Process Changes

- Online Web and Mobile Application
- Role based software for Block, District and HQ Level, PHCs, University Level
- Integration with PFMS for payment release
- Aadhaar Integration Framework
- Online verification of Student Records
- Integrated framework for very long period
- Reduction in Payment Cycle.

Digital Empowerment

Parameters	Earlier Initiative	New Software
1. Platform	Manual	SQLSERVER 2008 and .net Platform, C#, AJAX, ARCGIS Server, Silver light, IIS
2. Localization	English	English and Unicode Support
3. Online	Offline	Online Software with work flow management
4. Mukhyamantri Kanya Utthan Portal	Not Available	on-line facilities and Mobile App
5. SMS Support	Not Available	SMS Alert and SMS Monitoring facility has been added for monitoring

Contd...

6. On-line Receipt Financial Disbursements	Not Available	Direct Benefit Transfer has been done in the project
7. Help Desk and KIOSK	Not Supported	Available for Search Facilities
8. GIS Mapping Plots and other facilities	Not Done	Available with web interface
9. Mobile App	Not Available	For Enquiry and Online Reporting
10. Dashboard	Dashboard	User based dashboards most of the stakeholders

Green Governance

- The project has tried to popularize its motto of **“THINK BEFORE PRINT - save trees” among stake holders and citizen.**
- **Most of the task is being performed online**
- **SMS and email is used for communication.**
- **Documents are submitted in Scanned Copy and verified online.**
- **Online submission of forms.**
- **Online records are being processed very fast**
- **Online grievance redressal mechanism**
- Special training sessions are conducted for participants on Green ICT and its impact.
- Avoid printing files if reading the same on the monitor will suffice.
- Use virtualization on servers, when available, to allow multiple operating systems to run on each machine.

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Online Filing of Assets and Liabilities by Rural Local Body Members State Election Commission, Karnataka

S. Umesha, Raju R and Lakshmeesha S

Project Overview

Objective: The main objective of the online application was to facilitate the capture of the Assets and liabilities information of the members of the local bodies within the stipulated time during the financial year.

Scope: The scope of the application is to cover all the elected members of the local bodies both rural and urban except for members of Bruhat Bengaluru Mahanagarapa like. About 1 lakh members are covered. The members are enabled to file the assets and liabilities online after authenticating with OTP/Biometric

Functional: The online application captures the Assets and Liabilities information for the given financial year. The SMS alerts are sent to all the members to login and file the information. The data capture format is as per the State Government mandated format. Once the information is filed, through the work flow it is approved/received by the identified authority and then sent to State Election Commission (SEC) online. SEC has a dashboard to view the progress and also generate intermediate alerts to members to file. After the last date of submission, the defaulting members would get system generated notices.

Geographical: The application covers all the districts in the State. About 6024 Gram Panchayts, 200 Taluk panchayats, 30 Zilla panchayats covering 1,04,000 members.

Intended benefits: The members have the comfort of filing the information online at their convenience. This online system has reduced the travel time and expenditure incurred towards filing of information physically. SEC being the nodal agency would be able to monitor the filing of information and ensure compliance of the ACT.

The application is eco-friendly and paper usage is reduced drastically.

Key Aspects

Our project adheres to the CSI convention (2020), whose theme is, “Digital democracy – IT for change”. This is a unique initiative of the State Election commission to bring in transparency and accountability of the representatives of people. This has also strengthened the administration to ensure the compliance by the members and initiate legal action suo moto on defaulting members.

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Filing of online Assets and Liabilities	The online system has enabled the decision making authority to monitor the filing of information by the Gram panchayath, taluk panchayath and zillapanchayath members at every stage. Since the data is consolidated at a single point, the authorities are able to detect the defaulting members and issue notices The online system has resulted in taking Corrective and preventive actions to adhere to the Act.		1,01,664	1,01,183
Generation of Notices to defaulting members	This service has helped the management to track the defaulting members and take preventive action against the defaulting members		222	152
Delivery of SMS	SMS delivery has kept the rural body members informed about the new features in the system and also helped in authenticating the user		1,20,000	1,50,000
Vacant seats	Provision was made to declare the seats vacant on the expiry of the member		243	481

Implementation Coverage

The actual scope of the project is to file the Assets and Liabilities online by the Rural Local Body members. The platform for the same is implemented and the target of 100% is achieved.

New Services / Enhancements

Karnataka State Election Commission has already implemented the Online Filing of Assets and Liabilities of the Rural Local Body members for the last financial year. Now, the Government of Karnataka is in the process of forming new districts, new taluks, Taluk Panchayaths and new Gram Panchayaths from the existing districts. New features have to be incorporated in the online application for facilitating the

Administrator to create the new parameters and transfer the data online covering all the new features, without backend updations

Processes Rengineered:

- ✓ Bio-metric authentication and OTP integration for logging in to the online application and final submission of Assets and Liabilities statement
- ✓ SMS facility is provided to the administrator login for alerting the officers and elected members.
- ✓ Comprehensive dashboard is developed for facilitating the officers at every level of Elected Local body
- ✓ Comprehensive Data aggregation facility is provided to view the member details with reference to the online submission of Assets and Liabilities statement with a drill-down approach till the last node.
- ✓ Online facility is provided to freeze and unfreeze the elected rural local body members.
- ✓ Online facility is provided for comparing the Assets and Liabilities statement with reference to any year within the tenure of the elected rural local body member's membership
- ✓ Online facility is provided for generation of notices to the members and officers for defaulting in the online submission of annual declaration
- ✓ The online system also ensured the disqualification of the defaulting members and were able to bring in a semblance on the members to adhere to the rules of the State
- ✓ This online system would drastically reduce the litigations in the court with reference to filing of assets and liabilities in the coming years

Technologies

- ✓ The Software environment of the project:
 - Database : Microsoft SQL SERVER 2012
 - Technology : Microsoft ASP.NET technology
 - Reports : .rdl type reports
 - Authentication : OTP based and Biometric based

Since the data is consolidated at a single point, the authorities are able to detect the defaulting members and issue notices.

People

- ✓ During the online filing of Assets and Liabilities statements, the entire training programme was taken up in a phased manner. In the beginning DMIS (District Management Information System related officers) and TMIS (Taluk Management Information System related officers) were nominated and trained as master trainers through video conferencing. The DMIS and TMIS handled the training in their respective districts and taluks, thus helped the organization in capacity building of the entire set of officers and operators. Training of local districts and taluks was taken up locally. Also, the State Election Commission officers and

operators were trained locally to handle the districts and taluks allocated to them to handle MIS centrally.

- ✓ The department made extensive use of satellite based Video conferencing system to train extensively all the members of Zilla Panchayath, Taluk Panchayath and Gram Panchayath members
- ✓ Extensive training was imparted at head office for Panchayath Development Officers, who are the last point of contact at Gram panchayath level and who interact between Gram Panchayath members and the State Election Commission.

Key learnings

This system has evolved over a period of one year resulting in :

- ✓ Authenticity of the user
- ✓ Total transparency in the system
- ✓ Better monitoring methods to ensure data correctness
- ✓ Timelines are adhered to at every stage thus ensuring discipline from grass root level
- ✓ Confidentiality and integrity of data in the system

Digital Empowerment

- ✓ Bio-metric authentication and OTP integration for logging in to the online application and final submission of Assets and Liabilities statement
- ✓ SMS facility is provided to the administrator login for alerting the officers and elected members.
- ✓ Comprehensive dashboard is developed for facilitating the officers at every level of Elected Local Body
- ✓ Comprehensive Data aggregation facility is provided to view the member details with reference to the online submission of Assets and Liabilities statement with a drill-down approach till the last node.
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- ✓ Online facility is provided for comparing the Assets and Liabilities statement with reference to any year within the tenure of the elected rural local body member's membership
- ✓ Online facility is provided for generation of notices to the members and officers for defaulting in the online submission of annual declaration
- ✓ The online system also ensured the disqualification of the defaulting members and were able to bring in a semblance on the members to adhere to the rules of the State
- ✓ This online system would drastically reduce the litigations in the court with reference to filing of assets and liabilities in the coming years
- ✓ All the members of Rural Local Bodies were trained to file their online Assets and Liabilities and the success rate of online filing was achieved 100%

Green Governance

This online system has eliminated the need for maintaining the physical records thus reducing the usage of paper to a larger extent and saving the environment. The old physical statements filed earlier are catalogued and maintained district wise and taluk wise. The physical records maintained shall be disposed of as per the category of the file maintained in the record system.

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ASI e-Governance system

Ministry of Culture, Government of India

Usha Sharma, Gunjan Kumar Srivastava and Shiv Kumar

About ASI

The Archaeological Survey of India (ASI), under the Ministry of Culture, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation. Maintenance of ancient monuments, archaeological sites, and remains of national importance is the prime focus of the ASI. Besides, it regulates all archaeological activities in the country as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958. It also regulates Antiquities and Art Treasure Act, 1972.

For its prime focus and objectives, the entire country is spread across 24 Circles. The organization has a large work force of trained archaeologists, conservators, epigraphist, architects and scientists for conducting archaeological research projects through its Circles, Museums, Excavation Branches, Prehistory Branch, Epigraphy Branches, Science Branch, Horticulture Branch, Building Survey Project, Temple Survey Projects and Underwater Archaeology Wing.

About ASI e-Governance System

The principal theme of 'ASI e-governance system', is to have single face of the organization internally¹ and externally². The objective of the system, through process optimization to begin with, has been to achieve enhanced transparency, efficiency, accountability, predictability, and ease of doing business by minimizing the role of discretion. ASI has certain distinct characteristics, i.e. ever-growing volumes-reach-&-stakeholders, high-value & National-prestige assets,

A few of the initial achievements include bringing down major processing time, (likes of different permission approval, ACP and estimate approval etc.) and costs (likes of travel, courier, and stationary) with the roadmap to continue leverage the power of technology. Further, the system has helped stakeholders practically NOT to visit ASI offices across the Nation.

ASI is uniquely placed to embrace and implement Digital Journey through a structured well-planned roadmap.

Project Objective

Objective of "ASI e-governance system" is to bring all internal & external stakeholders and processes on one common platform through appropriate state-of-the-art-technology interventions. The project has been envisaged with the roadmap approach. The stakeholders' interactions include G2C, G2G, G2B, G2E, and other G2S³. The primary focus is to leverage natural benefits of Digital/ Information &

Communication Technology (ICT), i.e. enhanced efficiency, transparency, accountability, collaboration, security & safety, performance, process optimization through process re-engineering, agility, scalability.

Scope

The overall scope of the project has been to conceive, design, develop, deploy, and maintain with change management across the organization. The project scope covers 3 years maintenance with provision to continually techno-functionally enhance the application. The system is divided in 51 modules; annexure 1 provides a list of these modules.

ASI has great potential to be part of larger Digital India (DI) and Ease of Doing Business (EoDB) plans of the Government, through integration with other functions of Indian Government like Film Facilitation Office (FFO), National Film Development Corporation of India (NFDC), Tourism etc.

Key Stakeholders

- Archaeological Survey of India, HQ through All 120 offices
 - Circles
 - Mini Circles
 - Science Branch
 - Horticulture Division
 - Excavation
 - Epigraphy
 - Regional Director Office
 - Museums
- Citizen
- Other Government Agencies
- Institute of Archaeology
- Academician, Researchers, and Students
- Industry/ Commercial Enterprises

Process Optimisation and Re-Engineering

As a part of Project Vision, ASI leadership team was very focused on eliminating the unwarranted processes, removing any duplicate processes, and streamline the processes with enhanced transparency and process optimization, without compromising any business fundamentals. The natural benefits of modernization like focus from people to processes, minimize the role of discretion, Citizens not having to visit Department offices. Department is fully geared to deliver services with new focus and manage the enhanced work load better with same resources.

Organization-wide Change Management was led by ASI Leadership team by ensuring they remained integral part of entire change process and started accepting digital files only, monitoring the processes & people through dashboards, regular reviews etc

Strategy

- Process Optimization through re-engineering
- One Go organization-wide implementation
- Permissible 100% digital with reference to. internal and external engagements
- Aligned with National Objectives like Digital India, Ease of Doing Business, Open Standard, Open Source, Go Green, ...
- Led by Top Management with absolute commitment
- Strong focus on regular techno-functional reviews
- Agility with zero tolerance
- Organization-styled change management
- Active support from NIC at critical juncture of the project to ensure non-negotiable of the project are delivered.
- Strategic partnering with technology service providers, ...

Methodology

- Functional Requirement gathering through 'As-Is' → 'To-Be' process mapping
- SRS: System Requirement Specification
- Prototyping (Wireframe / HTML) for User Acceptance of requirements
- Development, building on Prototype
- Testing: unit-level and integrated testing – techno-functional
- Quality Control of overall solution
- Demo-led UAT (User Acceptance Test)
- Enterprise-wide User Training
- Data Migration
- Go-Live
- Hand-holding

Challenges

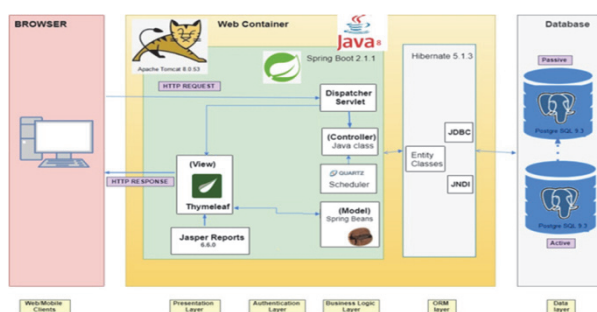
The main challenges in ASI before implementing “ASI e-Gov system” are:

- All communication and file movement within ASI horizontally and vertically was manual. The files and communication used to travel by post/ courier leading to inefficient system with low or no accountability.
- All the interactions and engagements with external stakeholders were manual.
- Citizen Request permission lifecycle was entirely physical. Citizen has to visit offices minimum 3 times.
- Delay in file processing with practically no monitoring and accountability.
- Excessively time taken to retrieves records, as all documents and records were available in physical form.
- No common platform between Offices of ASI and HQ for regular sync, and across departments at HQ
- Physical communication and document movement across ASI departments and offices leading to inefficient, costly, and time-consuming with very low predictability.
- File once moved used to get stuck with next level, unless processed.

- Duplication of work due to de-centralized system.
- Physical Approval of Annual Conservation Program (ACP) and Work Estimate lifecycle.
- Physical monitoring of budget, leading to literally no proper monitoring.
- Typical delays in Leave and tour processing due to manual systems
- Insufficient up-to-date information on Inventory level of goods

Solution brief

The application architecture is modular, scalable, secured across layers, performance-led, highly available with integration and interoperability strategy to grow with user requirements. The application has been deployed on Cloud to optimize the cost and maximize the infrastructure investments. The architecture is future-proof to adapt & support emerging technologies like Artificial Intelligence, BOTS/ ML, Mobility, Social etc.



Architecture Diagram

Features

• Role based system • e-File System • Real time file tracking • Audit trail • MIS reports and dashboard • Digital Signature • Online Payment	• Simple & User Friendly • Configurable • Modular • Scalable • Hosted on Cloud • System & Data Security • Integration-friendly
--	--

Technology

Technology	Specifications
Technology & framework	Java/J2EE, Spring MVC
Operating System	Linux (64 bit) – (Red hat 7 ersion preferred)
Database	PostgreSQL
Email	SMTP
Web Server	Tomcat
Script	JavaScript , HTML, JQuery

Security

Security of system across various deployment architecture layers is of utmost importance, especially since

- Internet based system with external users accessing the system in real-time
- Modern day's systems are subject to internal and external attacks for more than one reasons
- Now the entire system is online with NO manual processes.

Some of the below mentioned activities have been undertaken to remain compliant with GoI requirements and guidelines:

- MIETY Security Guideline Compliant
- Security Audited by CERT-IN Empaneled Agency
- Used Encryption Technique
- Followed OWASP 10 Vulnerabilities
- Audit Trail Management
- User Authentication
- Captcha on every input form

Application uploaded on cloud server so data and system both are secured.

Benefits

- 100% permissible automation with all internal and external stakeholders (G2G, G2C, G2B, G2E, and G2S in larger context) engagements.
- Real Time Integrated Reporting, likes of different permission status, Annual Conservation Program (ACP) and Estimate, budget expenditure,...
- Traveling time & cost has significantly gone down with new system, as field offices can achieve anything & everything digitally. Further, helping field offices with enhanced productivity & resource deployment.
- Automatic letter/ certificate generation - digitally signed
- Enhanced Accountability due to personalized pending task list
- Assure Data Security due to digital File
- Promote Innovation due to less repetitive task
- Agility to support continuous process optimization
- No duplication of work with new system, as all work on same platform.
- Online approval of ACP and Work Estimate.

Time and Cost Efficiency

Some of the quantifiable benefits with respect to time and cost are:

- ACP and Work Estimate approval
 - 30-40 days to <=1 Week
- Citizen Approval processing
 - Minimum 3 visits to practically ZERO visit
 - >30 working days to <= 7 working days
- Less Travel Cost for Approvals

Less Paper Cost

- Rs. 5.13Lac → Rs. 3.18Lac with growing volumes

Monument 3691	Users 3500	Offices 120	Roles 200
Permission Application 1000+	Current e-files 9000+	Migrated Files 18241	Visitors Annually 5 Cr
Revenue Through E-Ticketing Rs 300 Cr		Budget 1036 Cr	

Roll out/implementation model

- Firstly, created and shared account of all users of ASI
- Organization-wide implementation
- Multiple training given via Video Conferencing as well as physical visit at 31 circles and other offices.
- Support team is available who resolves issues on call and via mail
- Parallel run of <= 2 months, basis different modules

Learning for Sharing

To make the centralized system, input was taken from the department for conceptualizing the system. After development feedback was taken from every stakeholder many times individually and through a committee constituted for the purpose.

Changes suggested by stakeholder were communicated with every one and after finalization of changes in the module; the same were implemented in all modules as and when required.

Digital Empowerment

The system generated takes care of the geographical or linguistic barriers of the users through its simplicity/ minimalistic and easy to understand command.

- Virtually from Anywhere through Online system
- 120 ASI Pan-India offices
- National level: No of State(s) covered: 28 States and 9 UT
- 24*7 Availability

Green e-Governance

After developing this system, huge amount of paper are saved in department due to online file management. Now, for various permissions an online interface is available.

Annexure 1

• File Management	• Purchase Requisition	• Monuments	• Attendance Processing
• Excavation & Exploration	• Indent For Purchase	• Science	• Employee Management
• Drawing	• Quotation / Inquiry	• Antiquity	• Advances to Employee
• Conservation	• Purchase Order / Work Order	• Horticulture	• Claim Management
• Photo	• Material Inward	• Cultural Exchange Program	• Employee Service Cycle
• Central Antiquity Collection	• Material Outward	• National Cultural Fund	• GPF
• Building Survey Projects	• Sale of Material	• Budget & Fund Management	• Leave Processing
• Epigraphy	• Temple Survey	• Accounts & Reconciliation	• LTC Request & Processing
• Pre History	• Circle Operations	• Bill	• Tour Management
• Publication	• Parliament Questions	• Receipts	• New Pension Scheme
• Institute of Archaeology	• Court Cases	• DMS	• Payroll Processing
• NMMA	• World Heritage	• Planning	• Pension Scheme,
• RTI	• Grievances	• Hindi	• Training Management

1. Internally: across departments, across locations
2. Externally: Government, non-Government
3. G2S: Government to Stakeholders like Academia, Researchers ...

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Plantation Management Information System (PMIS) for 50-Crore Plantation Drive Maharashtra Forest Department, Government of Maharashtra

M. K. Rao and Ekta Barokar

Project Overview

In view of the development induced climate change, environmental degradation is now a reality. In line with the global initiatives to mitigate the effects of climate change, India under the leadership of Hon'ble Prime Minister Shri Narendra Modi has committed itself to Intended Nationally Determined Contribution (INDC) at COP-21 at Paris to bring down India's Carbon emissions to 30% below 2005 levels by 2030. This international effort and policy directive needs to be kept in mind in addition to the falling groundwater tables and deteriorating overall habitat. This impelled Hon'ble Minister (Finance and Planning, Forests) Shri Sudhir Mungantiwar to envision Green Maharashtra Mission'. Under this Green Maharashtra Mission, Maharashtra Forest Department would be planting 50-Crore saplings in the span of 4 years. Plantation of 2-Crore saplings in 2016, 4-Crore saplings in 2017, 13-Crore saplings in 2018 and 33-Crore saplings in 2019 are steps in this direction.

Key Aspects

The Plantation Management Information System (PMIS) was developed to ensure near real-time Plantation monitoring on Forest as well as Non-forest lands capturing district-wise, taluka-wise and village-wise and site-wise data for registration of plantation sites. All plantation sites belonging to Forest Department were geo-tagged. The sites were tagged with the Departments existing Nursery Management Information System (NMIS) to support adequate seedling stock. This helped in planning plantation activity well before the initiation of the programme. This application provided for advanced manpower planning as per the sites to streamline the implementation within limited time.

Integration of PMIS with Geo-spatial platform to display the spread of plantation on common dashboard was ensured. Maharashtra Forest Department's website (www.mahaforest.gov.in) hosted PMIS to capture database of Forest areas. Green Army Maharashtra website (www.greenarmy.mahaforest.gov.in) provided capturing database of Non-forest stakeholders. Integration of these 2 was secured on common dashboard. Department launched a mobile app 'MyPlants' to enable individual to upload their plantation information. Past data remain in public domain (http://mahaforest.gov.in/internal.php?lang_eng_mar=Eng&id=249).

The ultimate objective of the project remains to provide transparent, credible and accountable Forest governance and successful implementation of 50-Crore Plantation Drive (Green Maharashtra Mission).

Result Indicators

Services

Name of e Service	Brief service description with benefits	Volume (Nos) of Services year wise		
		2016-17	2017-18	2018-19
Plantation Management Information System: 2-Crore Plantation Drive Year 2016	The system envisages the Plantation, Planting Monitoring and Post-Plantation survival status follow-up.	2,81,38,634	250	65,674
Plantation Management Information System: 4-Crore Plantation Drive Year 2017	The system envisages the Plantation, Planting Monitoring and Post Plantation survival status follow-up.	5,43,35,049	16,80,022	94,257
Plantation Management Information System: 13-Crore Plantation Drive Year 2018	The system envisages the Plantation, Planting Monitoring and Post-Plantation survival status follow-up.	15,88,71,352	38,27,457	1,45,672
Plantation Management Information System: 33-Crore Plantation Drive Year 2018	The system envisages the Plantation, Planting Monitoring and Post Plantation survival status follow-up.	35,13,76,361	95,19,635	2,82,641

Implementation Coverage

(a) Implementation Coverage achieved in comparison to the plan / target

The PMIS was designed to monitor real-time plantation achievement of the entire State, both Forest and Non-forest agencies. As far as the plantation achievements go, the figures of achieving targeted goals is provided in the table given above.

The system is designed to meet the needs of the Department which is pre-plantation works monitoring, near real time plantation mapping as well as post-plantation survival monitoring.

New Services / Enhancements

While designing the scope of the application, it was devised to handle the 4 Crore plantation drive in 2017, 13 Crore plantation drive in 2018 and 33 Crore plantation drive in 2019. Application was developed in a way to simplify data entry, enable advanced analytics and mapping of survival of plantation sites. User interface

adapted was similar to existing department applications in order to ensure easy adoption by field staff.

The IT system deployed for the 2-crore plantation drive has been scaled up, based on internal Departmental as well as other Department feedback to monitor plantation of 4 crore carried out as part of a 3-year project to plant 50 crore plantations during a 3 year period from 2017 to 2019. The scaled-up system consists of a re-designed data entry Department portal to support better ease-of-use, improved analytical tools as well as a provision to accommodate more stakeholders. A provision was made for data entry by general population through the Green Army portal. During 2017, an improved connectivity network was deployed across all field offices of the Department to improve access to the Departments servers and ensure uninterrupted access to central servers.

As an extension of the initiative, a web-based Carbon foot print calculator and Carbon sequestration calculator and Web-based applications will be made available on our website with a view to encourage citizens to become carbon neutral citizens.

Enablers

Process Reengineering

1. The traditional process of preparing plantation estimations has been manual and time consuming and the process cannot address the scale of plantations that were envisaged in the 50 crore plantation drive. The online PMIS developed by the department mapped the entire plantation estimate preparation business process from estimate preparation to post-plantation survival monitoring covering all plantation works carried out on a plantation site over 5 years.
2. Extensive training was imparted to field officials to make them IT literate, so as to ensure proper uploading of information. Mobile based plantation application enabled these people to fill information, with little or no internet connectivity. Upon coming into network it was possible to upload data. Therefore, near real-time objective of mapping of plantation achievement was achieved with a gap of 1 to 2 hours.
3. Plantation estimates were captured online, linked to plantation sites; each site was geo-tagged. Polygons were made and Nurseries were plotted, linked to plantation sites. Provisions were also made to register real-time plantation achievements through mobile application.
4. Subsequent to the success of 2-Crore plantation drive, existing process was reengineered in order to capture Non-forest stakeholder data for 4-Crore Plantation Drive. It was ensured that through Green Army platform, common citizens could participate in the Plantation Drive by entering plantation site information
5. BSNL was requested for 100 Mbps connectivity to overcome the problem of limited bandwidth connectivity, thus improving server access.

6. The 50-Crore plantation application captured data through multiple sources, include Plantation and Nursery Management System application, Green Army Website, My Plants Mobile App and Department's Call Centre.

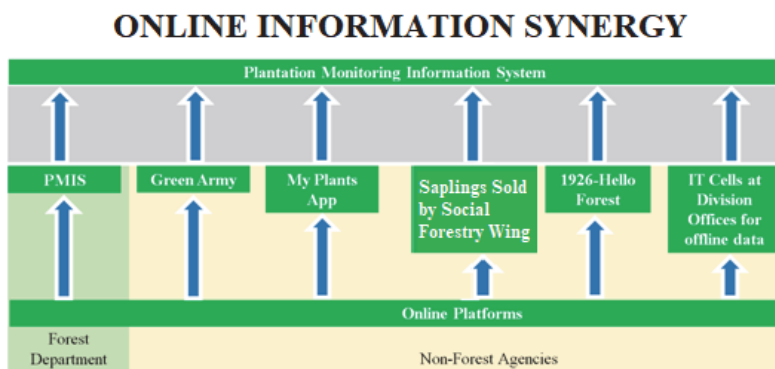
Technologies

All, including opinions from field officers, were taken into consideration for replication of the conventional processes of plantation to eliminate potential glitches for developing Plantation Management Information System.

To address the problem area, the Plantation Management and Information System (PMIS) system was developed. The Green Army portal was developed for registration of volunteers and site-wise co-coordinators were appointed to register plantation achievements. Individuals planting saplings could register their plantation achievements through 'My Plants' Android based mobile application, freely downloadable from Google Play store.

A series of discussions were performed for finalizing the processes for plantation drive for Forest Department as well as Non-Forest Departments for generation and seamless flow of plantation information.

Maharashtra Forest Department being the nodal agency for 'Green Maharashtra Mission – 50-Crore Plantation Drive' customized the existing conventional plantation process and ensured its contribution in government process re-engineering activity.



People

Yes, Large number of General public, Schools, Educational Institutions and NGOs participated in the Plantation drives because as the system ensured a credible, transparent and verifiable tool to monitor plantation sites, sapling plantation and post-plantation survival mapping. Maharashtra Forest Department website (www.mahaforest.gov.in) supplemented by Facebook (@Maha Forest. Official) with 105,300 likes, Twitter (@Maha Forest) with 3,484 followers and Instagram (@mahaforest) with 3,677 followers were regularly updated during the plantation drive to disseminate information on near real-time basis. This initiative was very well

received by citizens and helped out to build a positive opinion about the Department.

Maharashtra Forest Department reached out every Sarpanch and People representatives through postal cover on Plantation Drive to ensure their active participation. Moreover, in a bid to reach out every section of society Hon'ble Minister initiated 'e-Sanvaad', video conferences with Sarpanches, Gram Panchayat members and Villagers followed by Question & Answer session which motivated the people to realize value of plantation, encouraging them to come forward and register their participation in the plantation drive.

Social Media Platform	Before November 2016	Current Status
	26,312 likes	105,300 likes
	Inactive Account	3,484 Followers
	No Presence	3,677 Followers
	Inactive Account	2000 Subscribers

Value Indicators

Learnings for Sharing

- Near Real time Plantation Monitoring was never attempted in the past. Interior areas being widespread with poor network connectivity, by and large IT illiteracy among the Forest Guards and Foresters, posed formidable technical and field challenges.
- Linking of plantation activity on field to MIS/Web based/Mobile application to enable its monitoring with visibility at all the levels within the Department Intranet within limited bandwidth
- Monitoring of Digging of pits as per target for every site within specific time before plantation, as sites often fell outside network coverage, was challenging. Drone videography in rugged forests with strong winds and rains was challenging.
- Supply and transport of saplings to every registered plantation site posed logistics barrier- An application to monitor Nurseries 'Nursery Management Information System (NMIS)' was integrated with Plantation Management Information System (PMIS) for effective distribution of seedling stocks.

- Extensive training was imparted to field officials to make them IT literate, to ensure proper uploading of information. Mobile based plantation application enabled these people to fill information, with little or no internet connectivity. Upon coming into network it was possible to upload data.

It has been the Departments objective to not only ensure successful plantation drive but also establish a credible framework for post-plantation monitoring of survival rates of plantation sites. MRSAC (Maharashtra Remote Sensing Application Centre) has devised a Plantation Survival Monitoring Mobile Application 'Vanyukt Shivar'. (<http://mrsac.maharashtra.gov.in/forest/>).

The User enters data through the 4 modules of the app. Users can upload site photographs and lat-long for plantation sites as well as average tree height and total surviving trees on the site. Survival Rates are calculated automatically. This application is designed to work offline at remote locations and user can upload the file/data wherever and whenever the connectivity is established.

The mobile phone communicates to MRSAC's servers. Through a custom web service, this data is made available to MFD's database. Plantation data is viewable on MRSAC geo-portal (<http://mrsac.maharashtra.gov.in/forest/>).

Forest Department perpetually faced criticism on the survival percentage of Plantation. This application provides a credible verifiable and measurable tool for monitoring of Plantation achievement and survival. This resulted in reduction of trust deficit.

Digital Empowerment

For the first time such a large-scale participation of non-forest department stakeholders was seen, which ranged from Corporate, NGOs and Educational trusts & Institutions. They participated on largest number of sites on a single day and but for harnessing the power of IT, the real-time monitoring could not have been possible. Large number of General public, Schools, Educational Institutions and NGO's participated in the Plantation drives because as the system ensured a credible, transparent and verifiable tool to monitor plantation sites, sapling plantation and post-plantation survival mapping.

Green Governance

- The Department was able to manage this vast exercise with minimal paper work in integrating data from 65674 sites comprising 2.82 crore saplings planted over on a single day i.e.1st July 2016, 94257 sites during 1st to 7th July 2017 with 5.43

crore saplings planted in one week, 1,45,672 sites during 1st to 31st July 2018 with 15.88 Crore saplings planted and 2,82,641 sites during 1st July 2019 to 30th September 2019 with 35.13 Crore saplings planted.

- Green Army portal and 'My Plants' mobile application, ensured the ease for participation for Non-forest stakeholders
- Department's social media channels and Maharashtra Forest Department's website were extensively leveraged to disseminate regular plantation updates along with the Department's common plantation dashboard showcasing real-time plantation figures.
- Citizens were free to join the Forest Department and carry out plantation on forest sites. Moreover, saplings were made available to citizens at nominal rate under the 'Saplings at your doorstep' scheme.

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Section – IV
Sustenance Initiatives

Projects of 2013-14 Award of Excellence Winners

Online Pre-Harvest Test System (PHT) using Farm Enrollment Database

K S Srinivas and Usha Singh

Project Overview

Aquaculture shrimp is the major export item from India contributing nearly US \$ 2.5 billion. The aqua farms producing shrimp for export are mandated to be enrolled with MPEDA and other agencies by the competent authority. The aqua farms details are collected through series of campaigns in the farming clusters by the representatives of MPEDA. The information collected is digitized into several attributes of aqua farms database. The data entry started in December-2012. Each farm requested for enrolment is physically verified to obtain Geo Spatial information through capturing co-ordinates of the aqua farm with the help of a GPS instrument and capturing other requisite information by the representative of MPEDA. Each application for enrolment is given an acknowledgement number, a copy of which is available with the farmer and is recognized by a unique identification number of 8 characters. The GIS data is processed in a sophisticated GIS software (ArcGIS) to arrive at the unique GIS reference - the centroid of the farm recognized by its latitude and longitude. More than 70000 applications are received by MPEDA for enrolment purpose, of which 52500 had been physically verified and unique GIS reference is recorded for more than 45000 farms. MPEDA started issuing Enrolment cards to the Farms for the farms for which GIS reference are recorded and as of now around 33417 enrolment cards are issued to the Aqua Farmers based on the status of ownership of the farm. The farm enrolment is a continuous process and data base is a multipurpose data base.

The boundary coordinates (way points) of the farms are collected with the help of a GPS instrument and polygons are also created using GIS software (ArcGIS). Now all the spatial data is being mapped on to bharatmaps.gov.in, the Multi-Layer GIS Platform named "Bharat Maps", which is an end to end geo-spatial electronics delivery systems as part of Mission Mode Projects in the national e-Governance domain. The data of one district in Andhra Pradesh is given to the team to map it in Bharat Maps, they agreed to provide an interface to MPEDA to manage the data in Bharat Maps

As part of the guarantees provided by Govt. of India to leading importing countries/markets, aquaculture shrimp exported to E U should have a PHT certificate. A sample of shrimps is collected before the harvest is done and tested for residues of any antibiotics which are banned. The manual system of pre-harvest test was in operation since April, 2009 till March, 2013. The whole process of request for a sample, sample collection, testing in the lab, further testing in high end labs, generation of certificates, printing of certificates, verifying the authenticity of certificates, verification of sample collectors visit to the farm, identification of farm by the sample collector, etc. were incorporated in the PHT system which relied on

the farm enrolment database. The on-line Pre-Harvest Certificate system started on 15th April, 2013. An exhaustive set of reports for monitoring of the PHT system, operation and maintenance of the labs/chemicals, employee work assessment, production related reports etc, are generated.

The application is now enhanced with the additional feature of Farmer login and digitally signed PHT Certificate. The farmer can login to the system using their Farm ID and OTP received in the registered mobile. Farmer can submit request for sample collection by giving harvest details (Harvest period, approximate production, species, size of the shrimp etc) for getting Pre Harvest Test (PHT) certificate. The farmer can pay the required fee online using payment gateway. Sample Request status and Certificate status are available in the Farmer login. The digitally signed PHT certificate is generated in the system and the farmer can download the certificate. The Exporters use the PHT certificates for getting Health Certificates from EIC (Export Inspection Council) for export purpose. Hence the new enhancements will be hosted after linking it with EIC system for issuing Health Certificates.

Business Case

Top Reasons

The Farmer need not come to the LAB or to telephone to the LAB for requesting to collect sample and can pay the fee online for testing his samples. The Farmer gets digitally signed certificate from the system or by e-mail

Enrolment cards with QR code are issued to Aqua Farmers based on classification of farms.

Using Bharat maps, other stakeholders (Exporters / MPEDA / Researchers) gets various attributes of the Aqua Farms

Technological Changes

1. Development platform is upgraded to .NET 4.5
2. Database is upgraded to SQL 2012
3. Hosting environment is migrated to National CLOUD (NIC Cloud)

Top Functionality and Services Improvements

Added Farmer login facility: - OTP based Farmer login is incorporated in the application. The Farmer can login to the system with Farm ID as user name and an OTP is sent to the attached mobile No. The farmer has to enter the OTP to login to the system and request for sample collection by giving the required details of the production

Online Payment is incorporated: While giving sampling request, the Farmer can pay the testing fee using the payment options of the payment Gateway.

Generating Digitally signed PHT certificate: The PHT certificate is digitally signed and sent to the Farmer by e-mail. The farmer can collect the certificate from the Lab also.

A mobile Application is also developed for the farmer to request for PHT test.

Organizational Enablers

1. Chairman / Secretary / Director – Review the system periodically and give necessary instructions for the smooth and timely completion of tasks.
2. Joint Director / Deputy Directors – Review enrollment process, ELISA lab requirements, Compliance of Lab procedure, smooth functioning of Lab equipment etc. on daily, weekly and monthly by different levels; and interact with other Govt. bodies (like EIC) and overseas bodies (like EU FVO mission)
3. MPEDA field office officials / ELISA Lab Staff- Lab staff receives farmer request, collect sample, do the testing and records the details in the software and issue PHT Certificates. MPEDA officials do Farm inspection as and when required and records the details in the system to issue the PHT certificate in time. They help the aqua farmers for enrollment also.
4. Systems Analyst – Administrator level support as and when required and other software support.

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Open Government Data (OGD) Platform India – A Sustainable Initiative

Alka Misra and D. P. Misra

Project Overview

The Open Government Data (OGD) Platform India (<https://data.gov.in>) has been set-up by the National Informatics Centre (NIC) under the Ministry of Electronics and Information Technology (MeitY), Government of India, in compliance with the National Data Sharing and Accessibility Policy (NDSAP) 2012. The objective of the policy is to provide proactive access to Government owned shareable data along with its usage information in open/machine readable format, through a wide area of network across the country, in a periodically updated manner, within the framework of various related policies, rules, and acts of the Government.

Developed using Open Source Stack, the project is one of the initiatives under Pillar 6 (Information for All) of Digital India Program. The Platform has a rich mechanism for citizen engagement, which could help Ministries/Departments/Organizations prioritize the release of Government Datasets. Besides, enabling citizens to express their need for specific datasets or apps, it also allows them seek clarification or information from nodal officers of participating government entities.

Till 2014 the portal focused on development of the single window Open Government Data Portal. After receiving a grant-in aid fund from MeitY, the project has focused in enabling various stake holders and create the Open Government Data ecosystem in the country. In this process new objectives were added.

Main objectives of the project

- (a) Wide Accessibility and better discoverability of datasets in machine readable formats
- (b) Engaging Ministries/Departments by conducting regular Workshops/Trainings to Sensitize/Capacity Building of departments
- (c) Handhold govt. departments through onsite pool of project resources on rotational basis towards data preparation, sanitization, cleaning and contribution of datasets
- (d) Engage researchers, academia, industry, civil society, communities and startups for conducting Challenges/Hackathons/Developer Contests, through Challenge Awards, for exploring open government data and development of potential Apps, Visualizations and Info-graphics around published datasets
- (e) Promoting the Open Government Data Platform by conducting awareness sensitization in various events/conferences/forums to sensitize Open Government initiative and its different perspective

G2A (Government to All) Model

To achieve the data-driven innovation goal Government Open Data License – India has been developed to give legal framework to the data consumers wishing to use and build on top of public data. License also gives assurance of what they legally can and can't do with the data both commercially and non-commercially.

All users are provided a worldwide, royalty-free, non-exclusive license to use, adapt, publish (either in original, or in adapted and/or derivative forms), translate, display, add value, and create derivative works (including products and services), for all lawful commercial and non-commercial purposes

Government Open Data License - India (GODL) has been drafted by the committee under Chairmanship of Law Secretary, Department of Legal Affairs. After several rounds of discussions and deliberations, followed by a public consultation on MyGov, the License has been gazette notified on February 13, 2017.

To empowering Community engagement activities a dedicated Community Portal (<https://community.data.gov.in>) has been developed. This is to encourage Citizens to contribute Blogs, Visualizations, Info-graphics and Apps created using various datasets.

OGD demonstrated its potential to the App Developers' Community through various contests. Recently OGD Platform in association with Internet and Mobile Association of India (IAMAI) has organized #OpenGovDataHack2019 Hackathon in four cities. The event is still going on and scheduled to be over by January 2020.

The Platform has also organized number of events for engaging industry, students and startups through '12th Plan Hackathon', 'In Pursuit of an Idea', 'CMA Hackathon', '#Open Gov Data Hack' in association with IAMAI, '#Open Data Apps Challenge' in association with NASSCOM and 'Code for Honor 2014' in association with Micro soft etc. to name a few.

A dedicated event portal (<https://event.data.gov.in>) has been created for management of workshops, hackathons, challenges, etc.

A dedicated Visualization Engine (<https://visualize.data.gov.in>) has been developed to create, save, clone and embed Visualizations using datasets available on OGD Platform as well as user's own data.

To show the methods of data-driven decision making a separate Indicator Dashboard has been developed using the available datasets. Currently the dashboard focused on various Sustainable Development Goals (SDGs).

- (e) Targeted and Focused Engagement with Stakeholders to tap the Potential of Government Data

The Detailed Project Report (DPR) of OGD 2.0 is at the final phase of approval from MeitY. The new project is initially proposed for a period of Five years.

Business Case Sustainability

Top reasons

- Ministry/Department/State have started sharing their datasets through Web Services for regular, up-to-date and easy transfer of data. As on date more than 25% of the total 3.23 Lakhs datasets are being published and updated through Web Services.
- Application Programming Interfaces (APIs) to Query Datasets - Direct and dynamic query to access data items of selected datasets have also been provided through the Datasets APIs. Till date more than 16,500 APIs are available.
- Government Open Data License – India has been developed to give legal frame work to the data consumers wishing to use and build on top of public data. License also gives assurance of what they legally can and can't do with the data both commercially and non-commercially.
- Some states have either adopted National Data Sharing and Accessibility Policy (NDSAP) or created Open Data Policy on lines of NDSAP. Some States are utilizing the services of OGD Platform for sharing of their data with public in open formats.

Services and Usage

Year 2013-14	Year 2018-19
No. of Resources: 6,335	No. of Resources: 3,22,507
No. of Departments on-boarded: 64	No. of Catalogs: 7,706
No. of Times Viewed: 11,20,000	No. of Departments on-boarded: 157
No. of Times Downloaded: 3,80,904	No. of Times Viewed: 2,40,70,000
No. of Visualizations: 148	No. of Times Downloaded: 74,50,000
No. of workshops/events/Hackathons: 13	No of APIs created: 16,400
No. of events participated: 32	No. of Visualizations: 1,846
Data Controllers Nominated: 82	No. of workshops/events/Hackathons Conducted: 50+
Sensitization/Training/Handholding Support	No. of events participated: 100+
Ministry/Department: 51	Nomination of Chief Data officers (CDO): 339
	Sensitization/Training/Handholding Support to Ministry/Department: 120+

Improvement in Functionality & Services

OGD is available in Software as a Service (SaaS) model. Currently dedicated OGD SaaS Instances are being used by Governments of Sikkim (<https://sikkim.data.gov.in>), Tamil Nadu (<https://tn.data.gov.in>), Odisha (<https://odisha.data.gov.in>) Kerala (<https://kerala.data.gov.in>), Punjab

((<https://punjab.data.gov.in>) and Smart City Mission (<https://smartcities.data.gov.in>). Work is in progress for on boarding Karnataka. Dedicated Visualization Engine (<https://visualize.data.gov.in>) has been developed to create, save, clone and embed Visualizations using datasets available on OGD Platform as well as user's own data. This also allow users to create Maps up to district level. The map services were consumed from Bharat Maps

Cataloguing of Datasets and its OGD Enhanced Search through Custom Search API which interact with Elastic Search to fetch relevant indexes and provide desired results to the users. Community engagement through Datasets Suggestions, Blogs, Info graphics, Feedbacks etc. Event Management through OGD event portal Enhancement of Platform with many other new features and functionalities.

Technological, Architecture Changes

On the Infrastructure Front, there has been some major shift like.

1. OS Migration from Cent OS 6.8 to 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6
2. Migration from Apache Web Server to Nginx Web Server
3. We have started using varnish caching instead of PHP based APC Caching.
4. Migration from PHP 5.x.x to 7.x.x with some hops on Stable Releases.
5. Migration from Mysql5.x.x to Mariadb 10.1.38 with some hops on Stable Releases.
6. We have started storing index data on Elastic search Cluster.
7. We have started storing session and caching data on Couch base Cluster.
8. OGD Portal & its SaaS Instances using Drupal Domain Access Module
9. Visualization Engine's Frontend has been development using HTML, JavaScript and jQuery. Visualization Engine's REST API Module has been developed using Light-Weight PHP Slim Framework and MySQL database
10. Migrated to Drupal 7.67
11. Community and Event portal developed using Word press 5.2.3
12. Elastic Search upgraded to 5.6
13. Custom Search API Module was written in Drupal which interact with Elastic Search to fetch relevant indexes.
14. TYK with Elastic Search for APIs

Organizational Level Enablers

Ministry of Electronics and IT (MeitY): Being the nodal ministry in rolling out this initiative in Government Departments, entrusted this responsibility to its attached office NIC and monitoring and managing the initiative through PRSG. PRSG reviews the project on a regular basis and give their suggestions. It also monitors the activity with respect to the DPR and financial outlay. It plays a crucial role and work like a catalyzer.

National Informatics Centre-NIC has developed this entire Platform and providing complete Implementation and Enhancement support. NIC is also providing the Roll

out and Promotion support for this Initiative. Project is being executed through Open Government Data Division of NIC.

NDSAP Project Management Unit (PMU): The main activities of NDSAP, PMU is to manage the OGD Platform, provide advice to the ministries/departments/States, handhold for dataset contribution as well as capacity building of Data Contributors and Chief Data Officers. The Unit is also conceptualized, plan and conduct all the required training, workshops, challenges, hackathons, etc. Following are the impact of the work done by the PMU:

Till 30th September, 2019 OGD India has 3,22,507 datasets, 7,706 catalogs contributed by 157 Ministry/Departments, 1,846 Visualizations created, 16,400 Application Programming Interfaces (APIs) created, 339 Chief Data Officers OGD India has 24.07 million times viewed and 7.45 million datasets have been downloaded. More than 50 workshops/events/Hackathons were organized so far. OGD is strongly promoted through Newsletters, Social media, Workshops, Challenges and participation in Data-meets etc.

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Towards Digital Transformation

Selected eGovernance Initiatives 2019

Over the years, the various Government entities have embarked on a journey of usage of Information and Communication Technologies for bringing about transformational changes in governance, primarily for the benefit of the citizens.

This compendium titled, *“Towards Digital Transformation - Selected eGovernance Initiatives 2019”* presents some of the key aspects of Government's transformational initiatives, coming across from a wide spectrum of Central and State Government entities, undertaken by them in the country. Successful roll out of such initiatives is helping in moving towards digital transformation, for increased productivity, effective service delivery etc.

The critical success factors, the intricacies of implementation, the learnings, the infrastructure development, adoption of emerging technologies, training of human resources, process reengineering, and other related factors, as articulated by the authorities of various government entities, form the core content of this engaging compendium.

The sectors covered and included are wide and varied - Agriculture, Animal Husbandry, Education, Environment, Employment, Energy, Water, Food and Civil Supplies, Housing, Urban Development, Police, Security, Courts, Revenue, Finance, General Administration, Social and Citizen Welfare Services.

The Special Interest Group in eGovernance (SIG eGov) of Computer Society of India (CSI) has been at the forefront of bringing for the discerned readers, year on year for the last several years, publications like this one on “Select eGovernance Initiatives” across India.

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