PursuIT

The e-Journal, June 2022

**USE OF INFORMATION TECHNOLOGY
IN CITIZEN SERVICES**

Contents

About the Journal

PursuIT, the e-Journal, is a platform for sharing of experience and inculcating professional excellence in the emerging areas in the domain of Information Technology. e-Journal aims at having features on emerging areas of Information Technology viz. cybersecurity, Data Security, e-Governance etc. It also looks into the technological developments, future of technology, national policies and standards, as well as articles on IT Audit conducted by SAI India.

Editorial Board

Feedback/Suggestions

We strive for constant improvement and encourage our readers to provide their valuable feedback/suggestions to make the endeavour successful. Send us your suggestions, comments, and questions about the e-Journal to icisa@cag.gov.in

Disclaimer

Submission of Articles

To support this initiative of e-Journal, we welcome you to contribute electronic submission of articles from emerging areas in the domain of Information Technology. The article should be relevant to the theme of the upcoming e-Journal and should be in the range of 1000 to 3000 words. All submissions should be accompanied by a short profile of the author. The article is to be sent to icisa@cag.gov.in.

Director General's Message

With a view to disseminate knowledge and share experiences among the officers and staff of IA&AD, PursuIT -the e-Journal of iCISA in its journey is always keen to explore new dimensions in Information Technology Auditing.

The theme of this issue is **"Use of Information Technology in Citizen Services"** *Hopefully this issue will widen the knowledge of the reader which includes articles such as*

- *"Use of IT in Citizen Services with Special Focus on Waste Management";*
- *"Transforming Public Service Delivery using AI";*
- *"Changing Landscape of Public Service Delivery: Maharashtra State perspective" and*
- *"A Tailor-Made Audit Module under PFMS/CFMS".*

Article on Information System audit of "Direct Benefit Transfer" will enlighten on why it is required and what should be checked during audit. A new feature from our Audit Report has been added and this time Highlight of "Functioning of Unique Identification Authority of India (UIDAI)" has been included.

I am glad to acknowledge the efforts of contributors and members of the Editorial Board. Looking forward to your valuable suggestions to improve PursuIT, the e-Journal for future editions.

Ms. ILA SINGH
*Additional Deputy CAG
& Director General, iCISA*
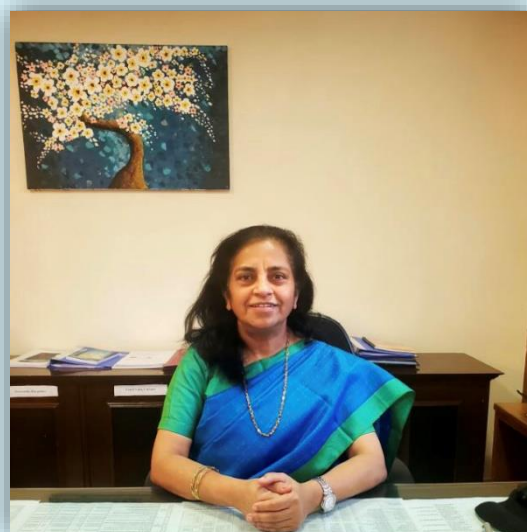
Changing Landscape of Public Service Delivery: Maharashtra State Perspective

Mr. Karan Vohra, IA&AS with Mr. Raghoothaman EPV, Sr. AO

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Introduction

Citizens avail public services from various Government departments, authorities of the Government, local bodies, or Government Companies. The service may include getting a certificate/document issued from a government entity e.g., Age, Nationality and Domicile Certificate, Caste Certificate, Income Certificate, Senior Citizen Certificate, Property Card, Birth Certificate, Death Certificate, No Dues Certificate, Below Poverty Line Certificate, Ration Card, Shop and Establishment Registration, Society Name Registration, Police Clearance Certificate etc.

Citizens expect to receive a high standard of service and this fact has been recognized by Government departments /authorities. As a result, the way services are delivered has changed considerably. The focus on good governance and the use of technology for delivery of services are the drivers behind this change. The three mainstays of good governance i.e., transparency, accountability and responsiveness of the administration can be better achieved by using IT in delivery of public services.

Digitalization of processes makes government services available to people by using internet and mobile technologies which reduces the bottlenecks in the manual process and increases accountability. Government organizations are adopting digitalization in a big way to provide user-friendly government services to citizens and simultaneously offer the services at nearest possible place.

Government initiatives for improving Public Service Delivery

The Government is investing significant amounts of time and money for improving delivery of public services. Since 2005, the Central and the State Government have introduced a range of initiatives with the aim of improving the delivery of public services. The major initiatives in this regard can be depicted on the next page:

Governmemt Initiatives for improving Public Service Delivery

Policy Interventions through Citizens Charters, Enactments, e-Governance Policy

Use of IT to bring public services closer to citizens
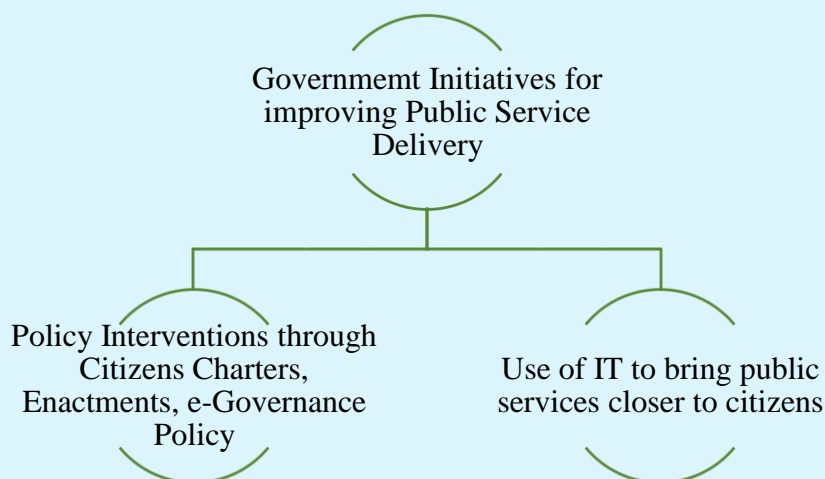
Policy Interventions

Citizens Charter

Citizens Charter identifies the services rendered by a Government department, together with the time limit for providing such services to the general public. In 2005, Government of Maharashtra introduced an Act, Maharashtra Government Servants Regulation of Transfers and Prevention of Delay in Discharge of Official Duties Act, 2005 which provides for every office or department to prepare and publish Citizens Charter. However, there was no penalty if the time limit prescribed by the Citizen's Charters was not adhered to. The Maharashtra Right to Public Services Act, 2015 (MRTPS Act) removed this gap and introduced a penalty for any lapses in service delivery.

e-Governance Policy of Maharashtra – 2011

The objective of the e-Governance Policy of Maharashtra – 2011 is to enable citizens to avail various services online, or at a place near their home, without having to visit Government offices and at minimum possible cost.

It also include provisions for e-enablement of services with features such as (a) the state government shall follow a standardized state-of-the-art Service oriented Architecture for various e-Governance projects keeping in mind GoI guidelines in this respect (b) each department shall prepare a list of citizen services for e-enablement of services in a time bound manner and departmental e-Governance initiatives shall be done in a planned manner in

consultation with the IT Department (c) e-enablement of services shall include information availability, submission of online forms, online processing and payments, online verification, online status tracking and online availability of services and (e) all e-Governance projects shall be accompanied by plans for reengineering business processes and change management systems associated with them. It also provides for various citizen services to be made available online through the State Portal.

Maharashtra Right to Public Services (MRTPS) Act, 2015

MRTPS Act aims to bring transparency and accountability in the departments and agencies of the Government and other Public Authorities which provide public services to the eligible persons. It gives citizens right to demand services and casts statutory obligation on the government to provide the public services within prescribed time frame in an efficient and transparent manner. The Act also emphasized need for promoting use of digital platform and improving quality of public delivery system.

The Act stipulates that the Public Authority shall, within a period of three months from the date of

commencement of this Act, and thereafter from time to time, notify the public services rendered by it along with designated officers for the services to be provided, stipulated time limit and first and second appellate authorities.

Improvement in service delivery cannot be effective without a good system to redress the public grievances. MRTPS Act empowers citizens by providing mechanism for public grievances redressal. In case of delay in providing services or denial without adequate justification, eligible person can file first appeal with first appellate authority and second appeal with second appellate authority within the department. Further, if the eligible person is aggrieved by an order of second appellate authority, he/she can file an appeal before the Maharashtra State Commission for Right to Service.

Use of IT in Service Delivery

Common Service Centre/Aaple Sarkar Seva Kendra

In September 2006, Government of India initiated Common Service Centre (CSC) Scheme under National e-Governance Plan (NeGP). The objective of the CSC is to provide e-services in the locality of citizens, by creating the physical service delivery infrastructure for accessing various e-services. The revised guidelines for implementation of Common Service Centers 2.0 (CSC 2.0) scheme were issued by Central Government in December

2015. The Scheme was implemented in the

State of Maharashtra in 2008 and since 2015, CSC Centers in Maharashtra are known with a common brand name of 'Aaple Sarkar Seva Kendra'

Aaple Sarkar Portal

The Aaple Sarkar Portal has been made available by the Maharashtra State for providing online services to the public. This platform is not only useful for availing services but also gives real time data regarding online services provided by the departments, number of services made available for public by the concerned department and number of applications received and disposed.

Screenshot from https://aaplesarkar.mahaonline.gov.in/
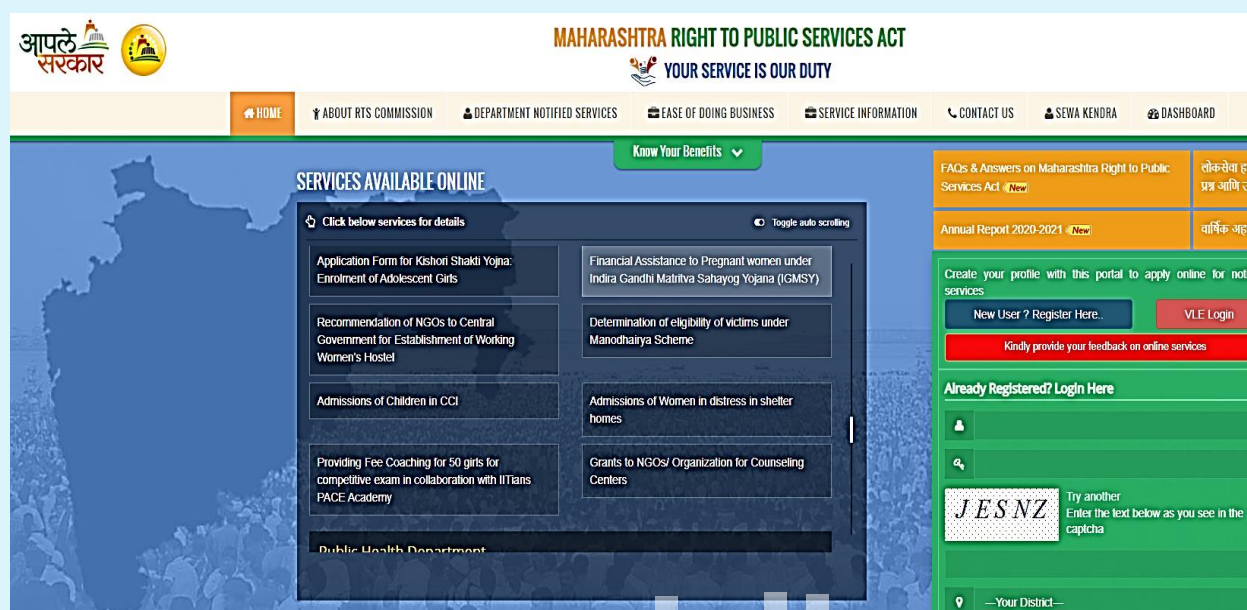
Auditor's role in improving delivery of public services

The growth in the efforts of the Government and the means for delivery of services to the public necessitates the need to assess the performance of such endeavors. Auditors, having insight into the structures and management processes of government departments and bodies can contribute to improving the service delivery. A Performance Audit of the machinery for public service delivery/IT Audit of the system for online delivery of services can highlight the shortcomings as well as achievements of the endeavors by the Government and recommend m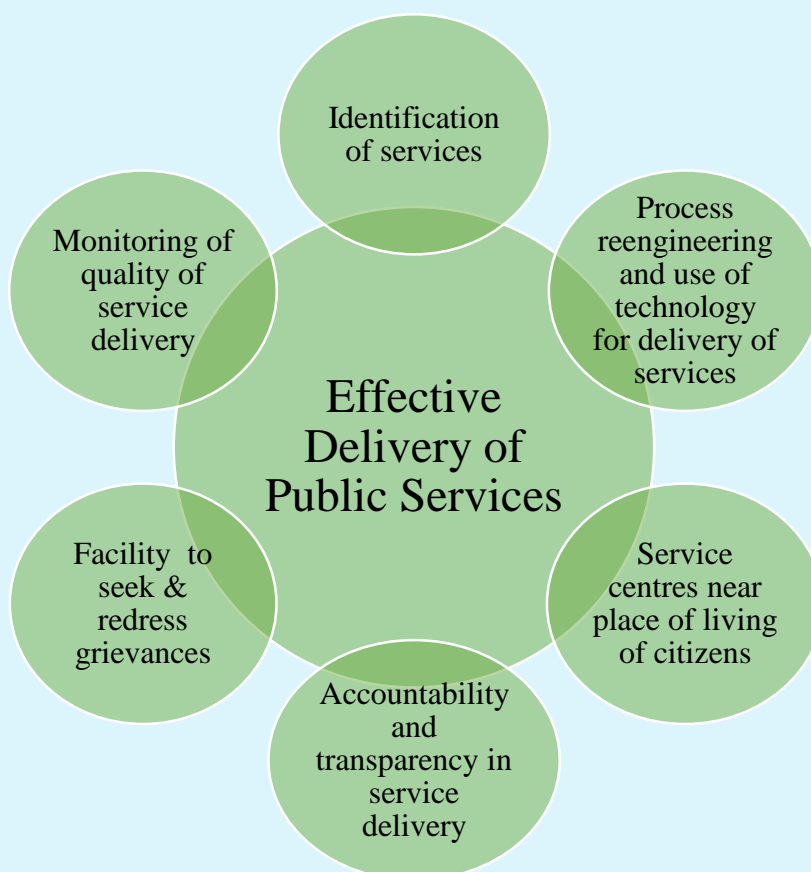eans to improve the delivery of public services. It can provide suitable evaluation to the responsible parties, helping to take appropriate action and can also contribute in a direct way by providing useful information to the citizens.

Aspects of effective service delivery

Considering various initiatives of the Central and the State Governments, Audit could consider six aspects which are most likely to impact the public service delivery. These are outlined in the given figure:

Identification of services

Process reengineering and use of technology for delivery of services

Monitoring of quality of service delivery

Effective Delivery of Public Services

Facility to seek & redress grievances

Service centres near place of living of citizens

Accountability and transparency in service delivery

Auditor's perspective

Some of the key questions related to different aspects of service delivery an auditor may consider are discussed below:

Identification of services

- Has the Government departments and bodies identified the public services to be delivered offline/online?
- Is there any time-bound plan for identification and notification of such services?

Process reengineering and technology for delivery of services

- Is there an approved business process reengineering plan for effective implementation?
- Does the organisation have a documented and well-designed application system for e-enablement of services?
- Have all the risks associated with the new system been considered and addressed?
- Is the application for service delivery hosted in a cloud environment for better access?
- Have the records been retained in the electronic form as per the provisions of the IT Act?

Service centres near place of living of citizens

- Have sufficient number of service centres been established for delivery of public services?
- Is the distribution of the service centres based on objective criteria?
- Are these centres functioning efficiently and as per defined guidelines?

Accountability and transparency in service delivery

- Are the applicants kept informed at regular intervals about status of the application for services and complaints?

- Are the services provided within the stipulated time period?
- Whether proper justification is given in case of rejection of application/delay in processing of application?

Facility to seek & redress grievances

- Have the Public Authorities made efforts to create awareness about the citizen's right to services?
- Does the organisation have a proper procedure for citizen seeking to make a complaint about a service?
- Are the grievances redressed timely?

Monitoring of quality-of-service delivery

- Is there an efficient MIS developed for monitoring the service delivery?
- Does the Government have programme management structures in place to ensure quality and continuous learning to improve process and services?

Conclusion

Central and State Governments have initiated various endeavors for improving the quality of public services. These projects are aimed at making the citizen as the fulcrum of the public service delivery and empowering the citizen to demand the public services as a right. Most of these initiatives formulated with the use of IT have made the administration responsible, answerable, and accountable. e-Enablement of services will ensure that citizens receive the standard of service they are entitled to and the authorities deliver the services efficiently and effectively. Auditors have a key role in helping departments and authorities to achieve this goal.

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https://aaplesarkar.mahaonline.gov.in
https://darpg.gov.in/citizens-charters-historical-background
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Use of IT in Citizen Services with Special Focus on Waste Management

Dr. Nanda Dulal Das, IA&AS

Mr. Nanda Dulal Das did his M. Phil on "Dynamism of Agricultural Land-Use around Metropolitan Cities with a special focus on Delhi" and Ph. D. on "Convergence between Natural Resource Based Livelihood Programmes: A Case Study of Watershed Development Projects & MGNREGS" in India, from Jawaharlal Nehru University, New Delhi in the year 2009 and 2014 respectively. Mr. Das had extensively used techniques of Remote Sensing and GIS in his research. Mr. Das has worked at different times in Vidyasagar University, West Bengal Civil Service and Indian Defense Accounts Service before joining the Indian Audit & Accounts Services (2015 batch).

Data driven systems are driving innovations in public, private and public-private partnership models. Generation of large quantity of data, processing and analysis of them, storage and retrieval of the same are essential components of a decision-support system. Citizen services are increasingly becoming linked with such decision support system. Numerous innovations in the area of waste management have opened the sector towards possibility of a smart waste management services for the citizens. Around 148 thousand tons of daily municipal solid waste is generated in India and about 60% of it is processed[1]. Despite this, numerous areas of waste management practices require widespread technological intervention.

Following are the major areas of IT applications in the field of waste management, which have already been under implementation in many world cities and have the potential for upscaling.

Technology enabling identification and segregation of trash

Most of the applications have been developed keeping in view twin objectives of making the city clean and turning waste into resources. Such applications make the citizens aware about the need for segregation and to derive benefit of recycling from the segregated resources of economic viability. **'Zero Waste Cambridge'** is one such app which enables citizens of Cambridge city (Massachusetts, USA) to segregate household wastes into recyclables (paper, plastics, glass etc.), compostable (kitchen waste, garden waste etc.) and trash (mixed and non-separable wastes) and scheduling of such pickup is arranged by the City Administration.

Almost 95% of all textile garments can be recycled for a second life and Cambridge City Administration has started curbside collection of such waste, as it cleans the city as well as makes such collection an economic proposition for the civic bodies to recycle such wastes[2].

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[1] http://swachhbharaturban.gov.in/writereaddata/Statewise_status_of_implementation.pdf, data as upto January 2020, Ministry of Housing and Urban Affairs, Govt. of India.
[2] https://www.cambridgema.gov/Departments/publicworks/news/2021/11/cambridgetolaunchcurbsidetextilescollection
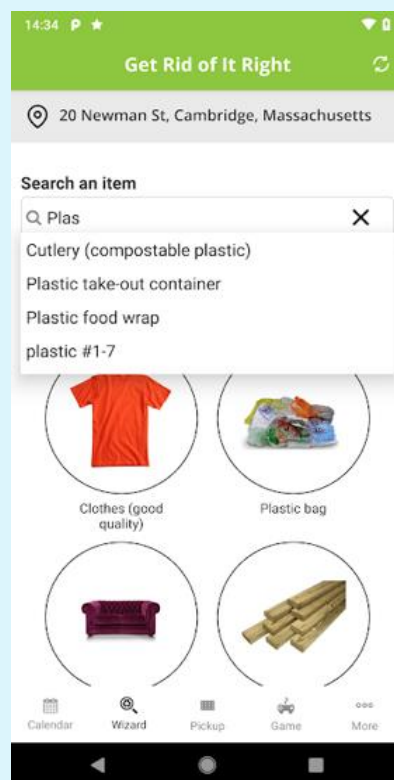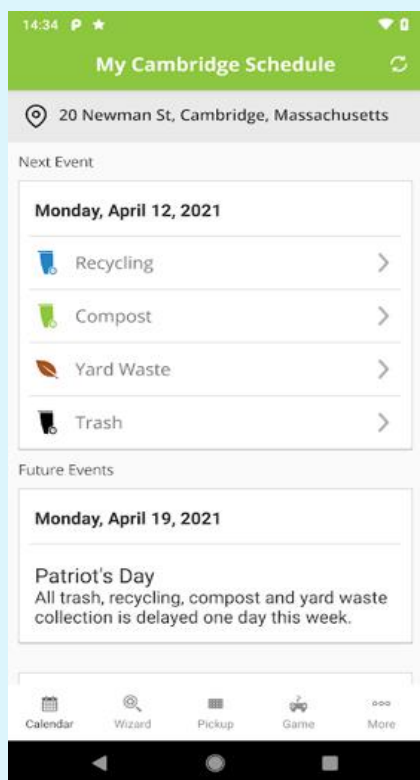
Image: Interface of the 'Zero Waste Cambridge' / 'Get Rid of It Right' app

Technology enabling efficient collection and transportation of trash

Overflowing of garbage bins in public places are common images across the Indian cities. Waste generation rate at different places of the city may be different needing different sized dustbins to be placed at different places. Further, if one is pre-informed about the quantum of trash deposited in a dustbin and can empty such bins at appropriate times (say, when they are filled 90%), it would increase the efficiency of the collection systems. Moisture Sensor for segregation of wet and dry waste within the dustbin; infrared sensor for identifying of level of filing of dust-bins and

Radio Frequency Identification (RFID) tags fitted dust-bins are widely in use in developed countries for scientific waste collection and transportation system. Government of India's "Innovate India" program saw amalgamation of many such technologies into one prototype, which has the following features:

a) Moisture Sensor for segregation of wet and dry waste
b) Infrared Sensor for measurement of level of waste filled in the dustbin
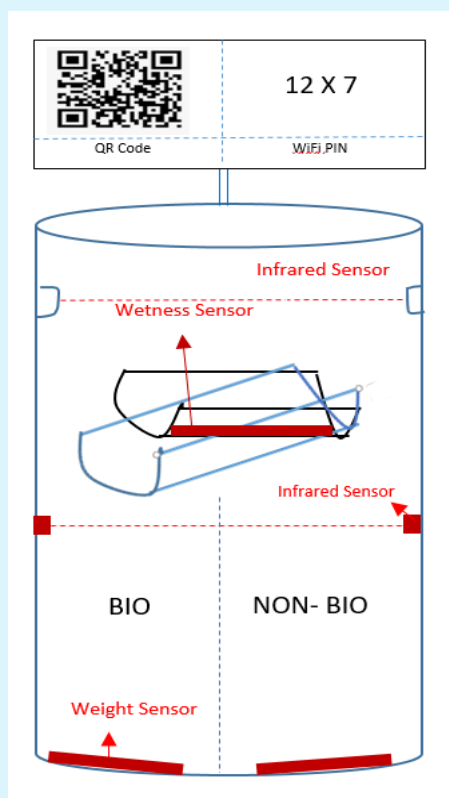c) QR Codes Scanning facility to incentivize citizens using dustbins by giving a limited Wi-Fi facility

Image: Prototype of a Smart Dustbin[3]

Like QR Codes, there are Radio Frequency Identification (RFID) tags and GPS receivers attached to the private and public dustbins which have opened multiples dimensions of citizens' engagement in waste management. Some of these are detailed below:

1. Public dustbins which have RFID tags attached, can be programmed to open when a person with RFID tag reader scans it. Such persons dumping waste can be rewarded depending on types of garbage dumped (wet/dry) and an incentive package in the form of rewards/cashback points can be thought of, which would further incentivize general public to use dustbins[4].

2. On the other hand, RFID tags which are fitted into the private dustbins and assigned to different households in the city, can be useful to determine the quantum of waste generated by each household, to determine user charges (in the way of electricity meters) or penalty structure for littering. This would help citizens to reduce waste generation and increase reuse of household goods.

3. City councils/Municipalities are charged by the outsourced contractors based on total quantum of waste collected from different areas of the city. Since the garbage trucks fitted with RFID Readers scan the tag in different dustbins to collect the waste (whose weight and volume can be measured by the Infra-Red sensor and inbuilt weighing machine fitted into the

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[3] (**Credit: Shreyaans Jain, Innovate India** https://innovate.mygov.in/wp-content/uploads/2018/08/mygov1533303464381986.pdf

[4] P. Ranjana *et al* 2021 *J. Phys.: Conf. Ser.* **1818** 012225, available at https://iopscience.iop.org/article/10.1088/1742-6596/1818/1/012225/pdf

dustbins), city administrators have a control with them to check the claim of the contractors with that of scientific evidence[5].

4. Besides, RFID tags and GPS receivers can also attach and send locational information about the dustbins which need to be emptied based on the data on filling of dustbins.

Further, Collection vehicles are also nowadays fitted with GPS to help efficient planning of routes for saving time and cost of fuel. Many cities in India and world have adopted this system of tracking of waste collection vehicles. Brihanmumbai Municipal Corporation has been operating for long a Vehicle Tracking and Management System (VTMS)[6.] A modern control room monitors the movement of collection vehicles from starting point to different collection points, measurement (weighing points) to the point of disposal.
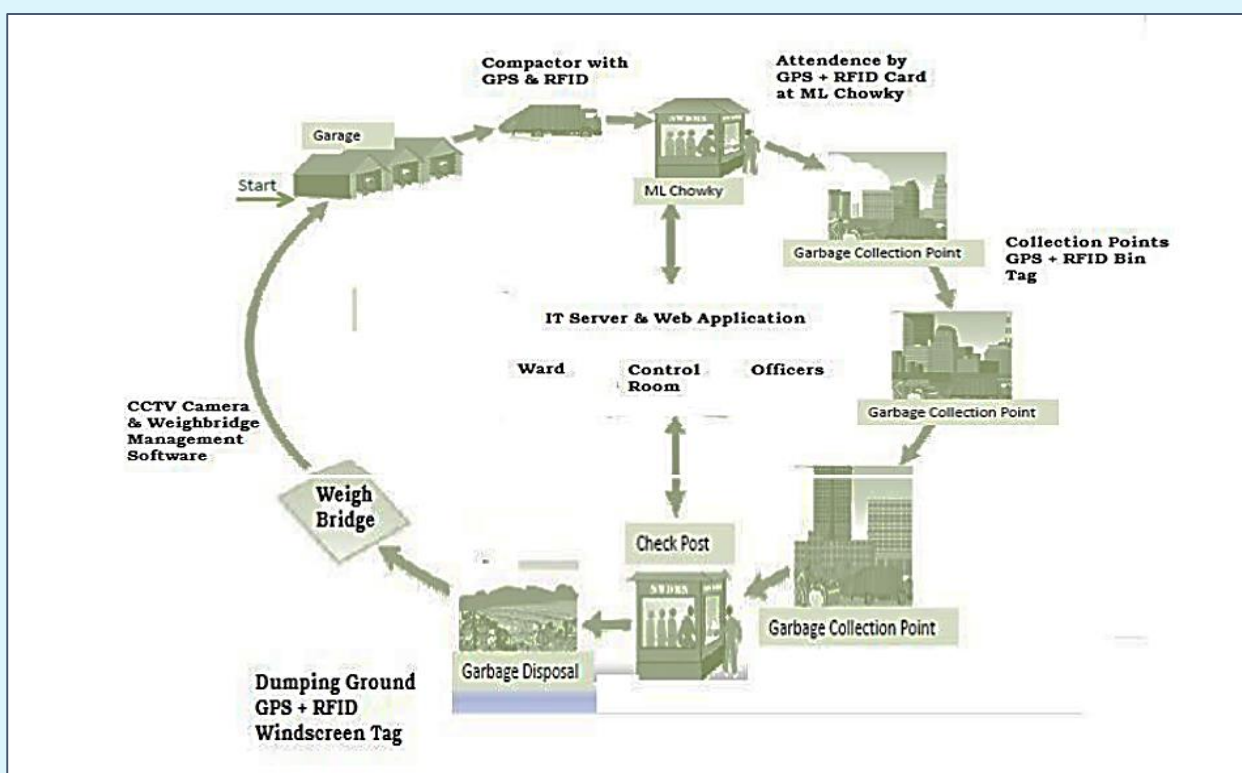
Image: Flow Diagram of the Vehicle Tracking and Management System (VTMS) of the Brihanmumbai Municipal Corporation (BMC)

This system is an integrated system of several software and hardware which are managed by a well-developed IT management system. Navi Mumbai Municipal Corporation (NMMC) has also been using RFID tag in its garbage bins for long. All the NMMC garbage collection trucks are fitted with RFID tags, GPS and GPRS and their location is tracked through an application[7].

5 https://www.randwick.nsw.gov.au/about-council/news/news-items/2017/august/rfid-tags-in-your-rubbish-bins
6https://www.mcgm.gov.in/irj/go/km/docs/documents/MCGM%20Department%20List/Solid%20Waste%20Management/Docs/SWM%20PPT%20Feb-2020.pdf
7https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1626016
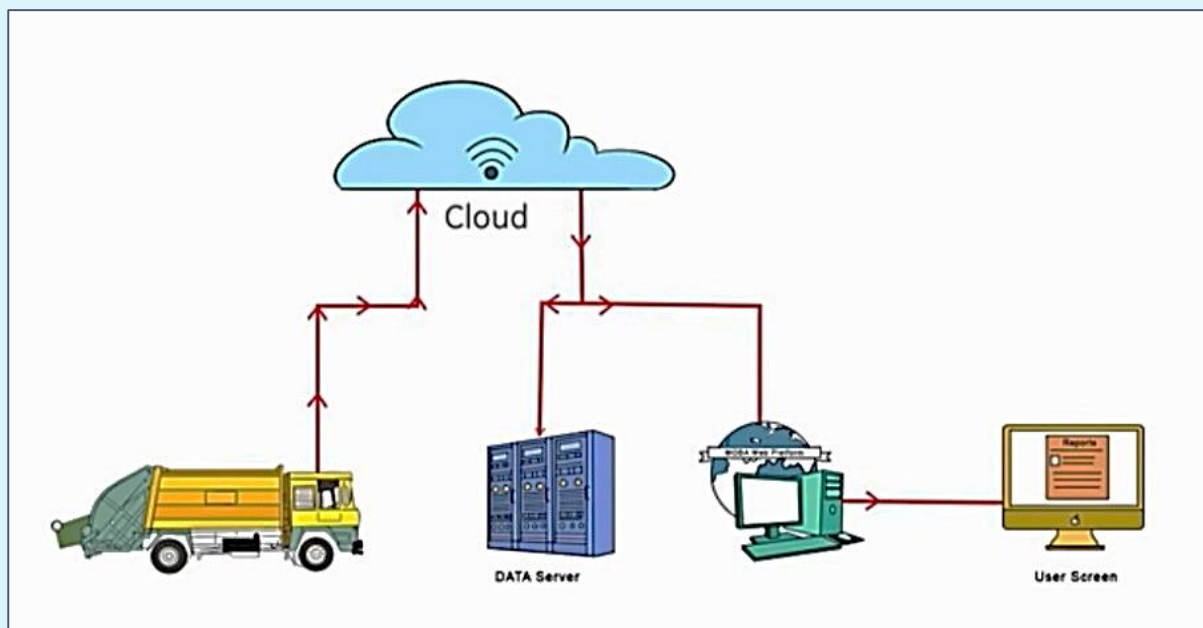
Image: Waste Collection Tracking in Navi Mumbai Municipal Corporation

This has enabled the NMMC get 5-Star Garbage Free City Rating in 2020. A well-developed information technology system has thus helped alleviate a commonplace problem for the whole region.

All of these components discussed above can form part of a network, which is integrated and developed into the Internet of Things (IoT-Diagram next)[8].

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[8] Kellow Pardini, et.al. A Smart Waste Management Solution Geared towards Citizens. Sensors (Basel) 2020 Apr; 20(8): 2380. Published online 2020 Apr 22. doi: 10.3390/s20082380PMCID: PMC7219336
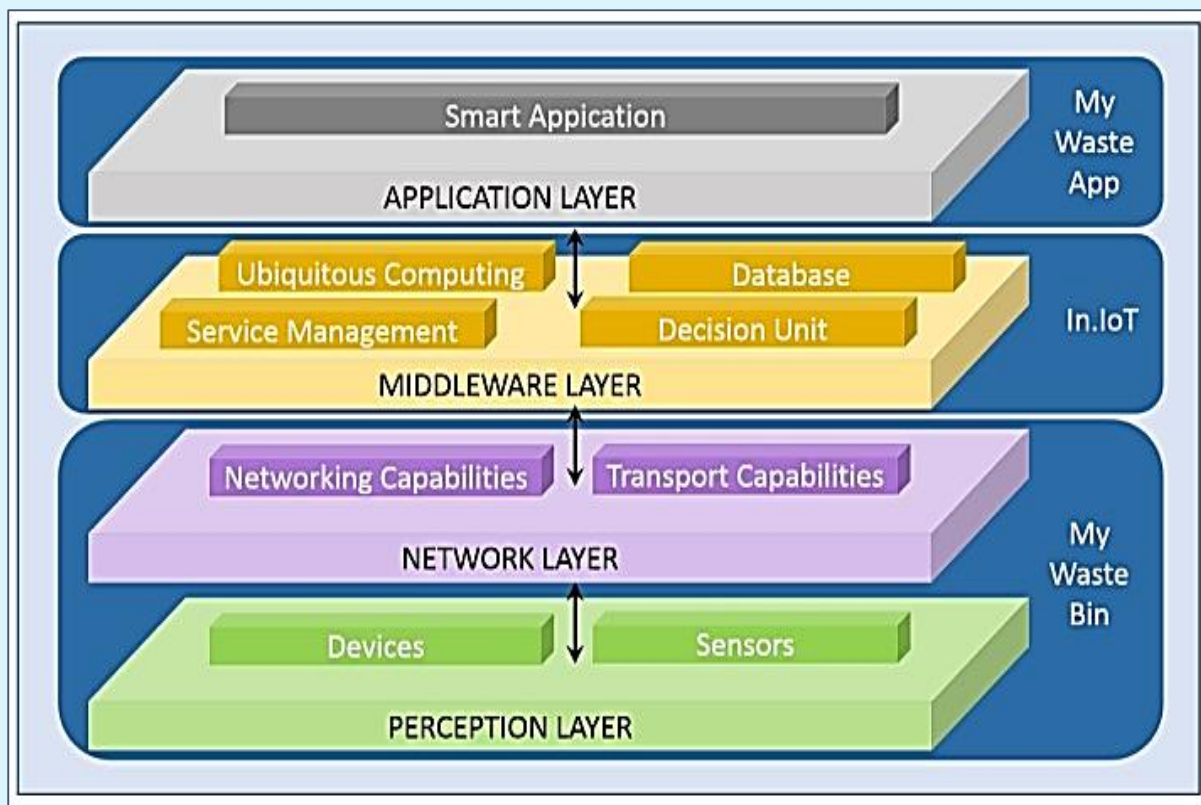
Diagram: Layers in an IoT based Waste Management System

While RFID tagged dustbins, IR sensors, weighing machines all form part of the sensors and devices that are constituents of the 'Perception Layer' of the IoT system; the 'Network Layer' and 'Middleware Layer' are composed of the different software, hardware, data computation and networking components.

Above all, an 'Application Layer' provides the interface for the citizens and city administrators (Zero-Waste Cambridge, VTMS etc.) to have real-time information on waste management activities. The potential for IoT in integrating numerous smart components of solid waste management is enormous and a Decision Support System based on IoT is a paradigm shift in waste management.

Transforming Public Service Delivery using Artificial Intelligence

Ms Stefi S, IA&AS

Ms Stefi S is 2013 batch IA&AS Officer. She is a B. Tech and currently holding the post of Deputy Secretary National Recruitment Agency (NRA) Department of Personnel and Training, New Delhi.

The concept of public governance has transformed significantly over the last few decades. Governments worldwide have acknowledged the importance of citizens in the process of governance. New theories of public administration identify citizens as the key stakeholders who are entitled to take part in the decisions affecting them, especially those pertaining to the service delivery processes. This shift in Government- citizen relations call for developing policies and designing services that respond to the needs of the citizens. Thus, citizen-centric service delivery becomes the focus of responsible democracies as citizens are voters too, who hold the policymakers accountable through elections.

While striving for high-quality service delivery, Governments face numerous challenges that include the diversity of the client requirements, limited resources, changing perception of the priorities, etc. Various studies at the global level point out the gap between the citizens and the service delivery of the Government. Over the years, the Government shifted to technology-based platforms to improve the quality of services. Online solutions have increased the ease and speed with which the citizens can access information, request services, and provide feedback. Citizen-centric services using IT aided in the governance systems evolving to an era of e-Governance based service delivery.

Owing to the role of quality-of-service delivery in determining the satisfaction of citizens, Governments seek to measure the citizen centricity of their activities. Sustainable Development Goal 16.6 aims to develop effective accountable and transparent institutions at all levels. The SDG global indicator 16.6.2 aims to measure the proportion of the population satisfied with their last experience of public services. The report of Organization for Economic Co-operation and Development (2015) identifies access, responsiveness, reliability, and quality as the key indicators to measure public services. While acknowledging the inevitable role of IT tools in shaping up the service delivery processes to what they are now- more efficient, reliable, and responsive; there are a few aspects that require attention. Though the citizens engage with the latest technology-based applications in their daily lives, they may have to interact with the Government on old, yet to be updated digital platforms. This may be underwhelming and frustrating for them. A quick analysis of the private sector service delivery reveals that they have moved far ahead, adopting Artificial Intelligence(AI) in almost all the significant areas of customer engagement.

The journey of digitalization of service delivery takes a turn to Phase 2 of e-Governance with the use of AI. Acknowledging the Government's efforts in this direction, it is time we understood the opportunities as well the challenges that AI offers us.

Understanding AI in the context of service delivery

In AI, computers are programmed to carry out tasks that require human intelligence. Computers understand and analyze visual/ spatial/ auditory information to make predictions and aid in the decision-making process. AI is beyond the automation of the tasks, and they are powerful for the role they play in decision making. Hence, bringing AI to the realm of service delivery may be differentiated from the mere process of

automation through digitization. The benefits of AI in service delivery are numerous and often contextual. The use of AI in the service delivery process aids in reducing the paperwork and the related administrative tasks and, helps the administration to devote time and energy for strategic activities. AI aids in learning more about what is valuable to the citizen with respect to the services delivered by the Government. AI has potential uses in various services such as the use of prediction to target social service interventions, detecting frauds, disaster management, informing the citizens proactively about their entitlements, improving crime reporting, etc. One of the significant uses of AI is that it helps the Government to address the challenges related to the user-centeredness of the services. Personalization of the services assesses if the Government identifies and responds timely to the needs of the citizens. This cannot be an unrealistic expectation from the side of the citizen especially when he/she receives personalization from online services such as Facebook, several OTT platforms, and Siri as well as Alexa.

The AI applications that aim to automate the tasks may not result in the transformation that was anticipated. AI-based applications may be applied strategically to efficiently deliver citizen services, reduce administrative burden, and augment human efforts. Research studies reveal that AI-mature systems should have a mixed workforce in which public servants and technology co-exist and support each other. Countries all over the world have already adopted the use of AI in public service delivery. Research points out that the public sector organizations fall into different categories when it comes to their approach towards AI in governance. The 'Emergents' acknowledge the potential of AI but are yet to set out their transformation journey. The 'Adopters' utilize AI in processes but are yet to embed AI across their institutions. While 'Adopters' have not yet utilized AI in services, 'Innovators' have already integrated AI into their core services. They have clear guidelines and processes in

place. The 'Transformers' use AI to transform public service delivery. 'Transformers' have a strong commitment to AI across their leadership levels. They have accepted AI as one of the key strategic priorities and have allocated resources in developing governance systems conducive to the growth of AI. The global AI readiness Index conducted by Oxford Insights and the International Development Research Centre (IDRC) in 2019 covered 194 countries and territories and ranked them according to their preparedness to implement AI in the delivery of public services and internal operations. US, Canada, and various European countries acquired the top 20 positions in the ranking. India stood third in the Asia Pacific region after Singapore and Hong Kong and 19th in the global index overall. According to surveys, India is one of the most prepared economies with regard to government readiness for artificial intelligence.

India has identified AI as one of the key priorities of the Government, bringing in National Strategy for Artificial Intelligence in 2018. Over the last few years, state governments had been utilizing AI in managing complex real-time issues. The role of AI in crowd management had been successfully explored by Uttar Pradesh during Kumbh Mela. Cameras enabled with AI technology could send alerts when overcrowding was observed at crucial sites of the processions during Kumbh Mela 2021. Telangana released an actional AI framework in June 2020, becoming the first Indian state to do so. Andhra Pradesh had announced the introduction of an AI-based Real-Time Beneficiary Identification system in 2020 replacing the old Pensioner Identification System. The Union Budget of 2022 welcomes the use of AI in agriculture, launching Kisan drones to support farmers in the assessment of crops. The use of AI is key to mitigating the risks in service delivery to citizens belonging to diverse backgrounds in a social and geographical context. Adopting AI to the core services call for attention to areas of huge concern related to Algorithmic ethics, AI data

management and challenges to principles of equity, transparency, and accountability.

AI and data privacy

AI utilizes huge chunks of data from various stakeholder groups for data analysis and predictions. The protection of personal data is significant in the context of the right to privacy, a fundamental right embedded in the Constitution (Article 21). AI applications must maintain the privacy and the security of the data. The key principles of data protection such as lawful processing and individual participation are intrinsically derived from the object of protecting the autonomy and the dignity of the individual. The Government may bring in measures to ensure the privacy of personal and confidential data. The draft Data Protection Bill (2019) aims to be the overarching comprehensive legislation that outlines various facets of the protection of personal data.

AI and unintended biases

One of the key concerns in the use of deep learning and machine learning for decision-making is the tendency of the systems to be biased due to various inherent complexities in the model. AI systems may amplify the bias across large data sets. Also, as AI systems work on probability-based prediction techniques, they may cause the exclusion of entitled citizens. The social cost of this incorrect decision can be very high. Governments may have to ensure that they engage with high-accuracy models and introduce human intervention whenever such decisions are made.

AI and accountability

The use of AI applications brings in higher accuracy and boosts the confidence of citizens in the Governance systems. However, the opaqueness of underlying AI systems may result in the Black Box problem where the inputs and operations are not visible to the user, or another concerned party. An impenetrable AI system may overlook the principle of accountability. Also, it may be difficult to audit for compliance with the relevant rules and regulations. The government may ensure that the stakeholders involved in the design, development, and use of AI-based service delivery applications must be responsible for their actions. Further strong grievance redressal systems may be set up as this helps the citizens to come forward and participate in the course correction. AI operates on the data that is provided to the application. The integrity, accuracy, and reliability of this data is one area where the Government may have to put in all its efforts to reap the benefits of AI in the right way. The Government must be data prepared and best practices may be followed to manage the data.

AI will permeate the ways citizens engage with the Government in the days ahead. It is imperative that we look for sustainable deployment of AI systems in service delivery processes, adhering to societal morality and constitutional principles. AI in service delivery, for the benefits they offer, will be a journey successful at the destination. However, it is important that we do not leave anybody behind and that we ensure, that the course of the journey was a joined effort of all the stakeholders placing trust in each other.

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Information System audit of Direct Benefit Transfer

Mr. Rakesh Kumar Singh, Sr. AO

Shri R K SINGH, Sr AO has conducted various Financial, Compliance, Performance Audit and CCO based audit of Public Works Department, Irrigation Department, Rural Engineering Service, Minor Irrigation and Estate Department of Uttar Pradesh. He has also done an Environment Audit- Compliance of Environment laws in Lucknow City and Special Audit of Governor House. Currently he is handling various IT Audit & Research related tasks as Sr AO, R&I in iCISA.

What is Direct Benefit Transfer[9] (DBT)

Direct Benefit Transfer (DBT) is transfer of benefits whether in cash, in kind or transfers/honorariums given to various beneficiaries/enablers of government schemes, under various Government Schemes and Programs using Information and Communication Technology (ICT).

Why DBT

Direct Benefit Transfer (DBT) vision is a governance regime which ensures a simple and user-friendly Government to People interface and directly delivers entitlements to eligible individuals and households in a fair, transparent, efficient and reliable manner. DBT is a major reform initiative of the Government of India to ensure better and timely delivery of benefits from Government to the people to minimize intermediary levels and to reduce delay in payments to intended beneficiaries with the objective of minimizing pilferage and duplication.

Status of DBT implementation in India

The Government of India alone implements its 313 Scheme relating to 53 Ministries besides schemes of state government. Besides the optimum use of Information Technology, the role of JAM i.e. 22 crore Jan Dhan Accounts, more than 100 crore Aadhaar and about 100 crore Mobile connections provide a unique opportunity to implement DBT in all welfare schemes across country both of union and safe.
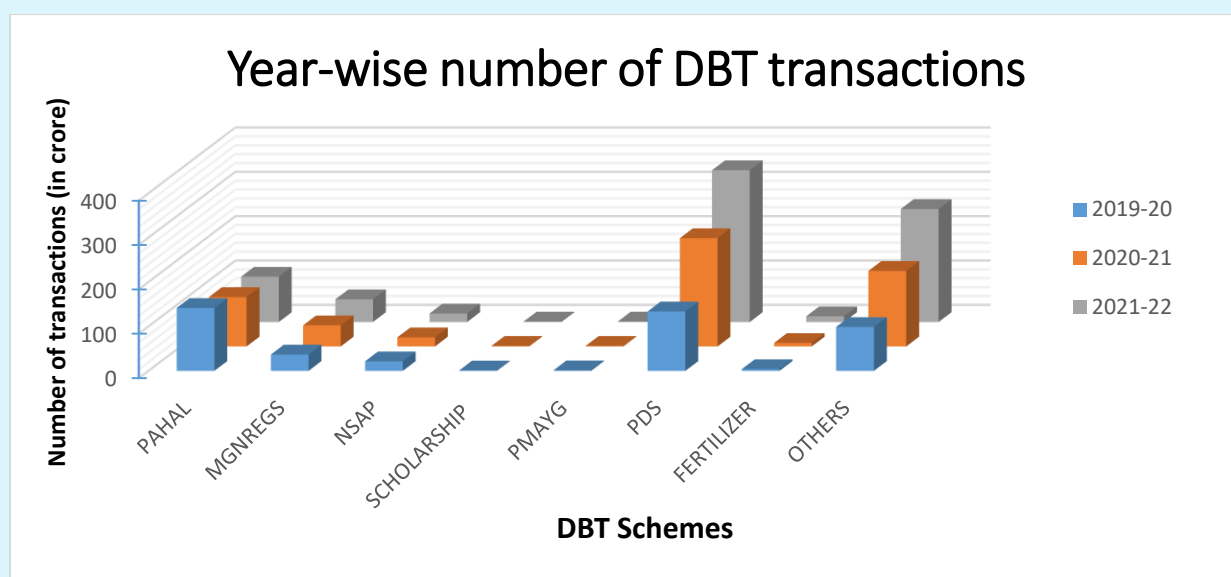
In 2021-22 alone more than Rs. 6.18 lakh crore rupees were transferred under various welfare schemes through 783.93 crore transactions. The details of transactions and amount disbursed under various group of schemes in the last three years are given in table on next page:

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[9] Rule 87(1) of General Financial Rules ,2017

		Total DBT amount (in ₹)	Total No. of Transactions	Total DBT amount (in ₹)	Total No. of Transactions	Total DBT amount (in ₹)	Total No. of Transactions
Total Direct Benefit Transfer						
S No.	Scheme Group Name	Total DBT amount (in ₹)	Total No. of Transactions	Total DBT amount (in ₹)	Total No. of Transactions	Total DBT amount (in ₹)	Total No. of Transactions
		2019-20		**2020-21**		**2021-22**	
1	PAHAL	26,171.51	141.56	15,054.90	111.14	4,881.75	101.95
2	MGNREGS	46,046.08	36.81	67,218.29	47.55	73,551.31	51.02
3	NSAP	8,114.48	21.45	7,230.56	20.38	6,097.09	19.12
4	SCHOLARSHIP SCHEME	7,011.19	1.08	9,121.29	1.30	7,647.22	1.13
5	PMAYG	43,883.45	1.20	48,251.15	1.25	39,768.02	1.12
6	PDS	81,888.19	133.78	1,67,099.14	243.85	2,17,001.65	342.11
7	FERTILIZER	46,357.44	3.96	83,660.90	7.90	1,23,961.84	12.89
8	OTHERS	1,22,159.21	98.79	1,54,891.02	170.05	1,45,137.81	254.64
	Grand Total	**3,81,631.55**	**438.62**	**5,52,527.25**	**603.43**	**6,18,046.69**	**783.97**

Source: https://dbtbharat.gov.in/reportnew/scheme-group-report

It can be seen that both number of transactions and amount is increasing at a very rapid pace. The graph below is depicting the same

Year-wise DBT amount disbursed

Total Amt. disbursed through DBT **(Rs. in crore)**

DBT Schemes: PAHAL, MGNREGS, NSAP, SCHOLARSHIP, PMAYG, PDS, FERTILIZER, OTHERS

Legend: ■ 2019-20 ■ 2020-21 ■ 2021-22
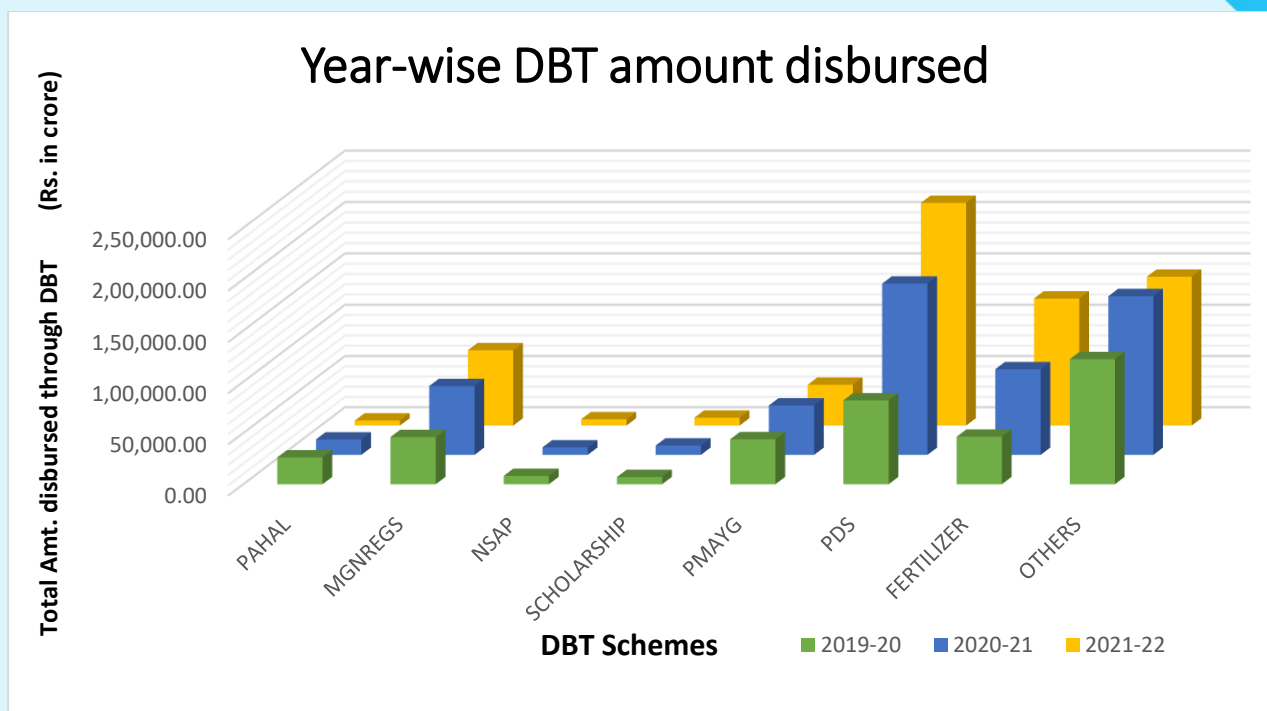
Among[10] the 36 states and Union Territories Haryana, Uttar Pradesh and Tripura are top three performers in implementation of DBT whereas Telangana, Assam and west Bengal are last three as shown in the table below:

Ranking	State	Score
1	Haryana	88.8
2	Uttar Pradesh	85.2
3	Tripura	80.2
4	Gujarat	77.8
5	Uttarakhand	74.3
6	Jharkhand	73.1
7	Goa	69.4
8	Jammu and Kashmir (including Ladakh)	68.3
9	Bihar	67.6
10	Madhya Pradesh	66.9
11	Puducherry	65.3
12	Odisha	63.3
13	Mizoram	62
14	Himachal Pradesh	60.7
15	Punjab	59.9
16	Tamil Nadu	59.3
17	Delhi	58.5
18	Rajasthan	57.5
19	Andhra Pradesh	54.9
20	Manipur	54.8

[10] https://dbtbharat.gov.in/state/state-ranking

21	Kerala	53.8
22	Chhattisgarh	52.9
23	Nagaland	51.1
24	Sikkim	50.5
25	Karnataka	49.1
26	Maharashtra	48.4
27	Meghalaya	46.6
28	Andaman and Nicobar Islands	45.3
29	Chandigarh	44.3
30	Dadra and Nagar Haveli	43.7
31	Arunachal Pradesh	39.9
32	Daman and Diu	38.9
33	Lakshadweep	38.1
34	Telangana	29.6
35	Assam	26.4
36	West Bengal	13.2

Stakeholder[11] for implementation of DBT

The flow chart given below depicts stake holder for implementation of DBT Scheme:
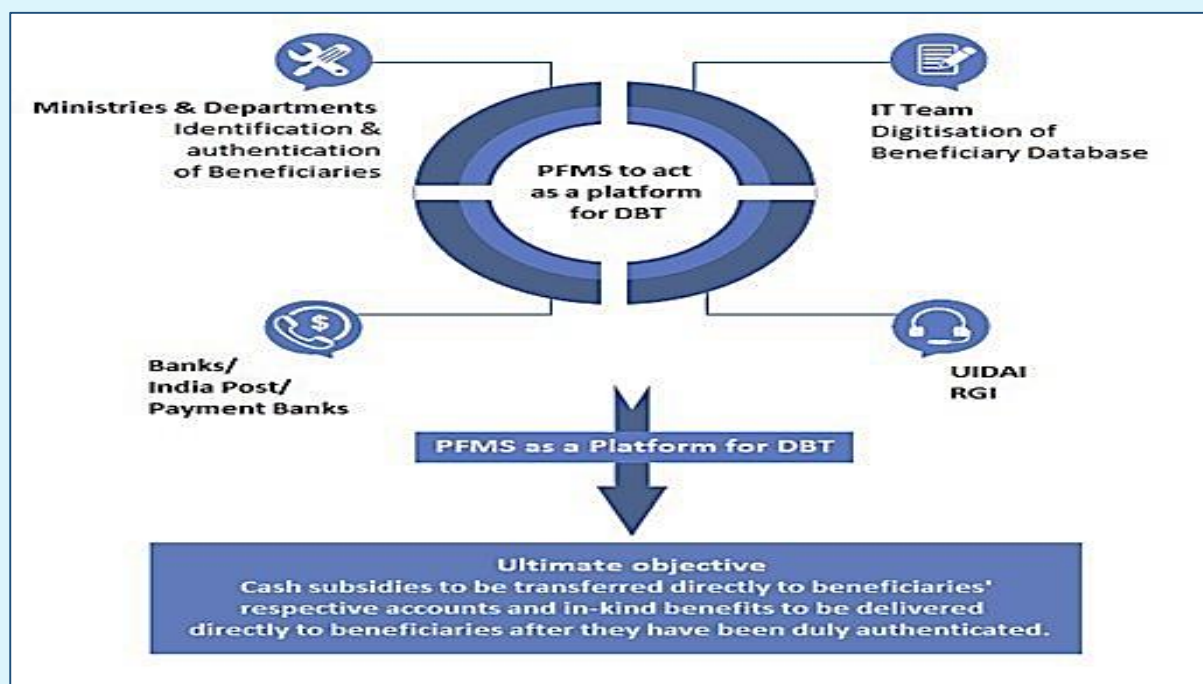
[11] As per DBT framework of Standard Operating Procedure (SOP) issued by DBT Mission
hhtp://cabsec.nic.in/dbt/origin.html

What is Prerequisites for Implementation of DBT

The pre-requisites [12] of DBT payment are:

- Digitization of database of beneficiaries
- Opening of bank accounts of beneficiaries
- Enrolment of beneficiaries for generation of Aadhaar number

Various Processes of Direct Benefit Transfer

Under DBT, various schemes in the categories of Cash and in-kind are being covered. Following process is to be followed by implementing agencies through PFMS or other payment systems:

- Beneficiary identification and enrolment in DBT scheme Management Software
- Beneficiary validation/registration on financial management system (PFMS, like CFMS, CTMIS, RTGS/NEFT or any other system, including first time validation of bank account details
- Generation of payment file instructions
- Processing of payment file and payment to beneficiary

Beneficiary Identification and Enrolment

The steps involved in beneficiary identification and enrolment are to be carried out in respective Scheme software or a common software depending on the situation. In this connection, following issues are important:

- The fields for beneficiary records to be captured in the scheme management system as per the scheme requirements that may vary across schemes.
- Aadhaar authentication to be performed with UIDAI's Central

Identities Data Repository (CIDR) based on demographic, OTP, or biometric details of the beneficiary. Central Identities Data Repository **(CIDR)** is a government agency in India that stores and manages data for the country's **Aadhaar** project

- Bank account details should ideally be captured at the time of beneficiary enrolment.

Central Ministries/ State government to evolve their own process to ensure outreach and communication for timely updating of beneficiary records including financial address (bank account/Aadhaar). It has been seen that beneficiary identification is done in both modes i.e., online and offline.

Beneficiary validation/registration

Before making the first payment to the beneficiary, there needs to be a mechanism for beneficiary first time validation (including validation of bank account details) in FMS or in the DBT funds transfer platform used.

Generation of Payment file instructions

After satisfactory completion of payment conditionality's, i.e., eligibility conditions for beneficiaries under the scheme guidelines, payment instructions file will be generated, either in Scheme Management Software or in PFMS/Payment system directly. Payment files on PFMS for beneficiaries send to Checker using FMS with or without digital signature. Authorizer verifies and approves the payment files by digitally signing either through Scheme MIS Portal interfaced with FMS or directly on FMS.

Processing of payment file and payment to beneficiary

Once the payment instruction is generated, the same is pushed to sponsor bank after structural

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[12] SOP issued by DBT Mission, GoI

validation for making the payment to beneficiary. Payment process and feedback loop in PFMS (this may vary with other funds transfer platforms) is as below:

- Once approved and digitally signed by the Authorizer, the payment files are sent by PFMS through an automated process to the corresponding sponsor bank of Ministry/Department/State Department/Implementing Agency.
- Amount is debited from the sponsor bank of Ministry/Department and beneficiaries' bank accounts are credited through the appropriate payment bridge.
- The sponsor bank routes all transactions through NPCI through an automated process, the sponsor bank of Ministry/State Department/ Implementing Agencies shares the payment status response files with PFMS.

- PFMS then shares the payment status response files with the Ministry/ State Department /Implementing Agency. These response files contain the details of successful and failed transactions along with reasons for the failure.

Feedback is given to beneficiaries through SMS alerts-credit/debit information by corresponding Bank. PFMS/Program Division through SMS intimates scheme-wise payment amount details to beneficiaries.

Time line for DBT Payment

DBT is implemented to ensure a better and timely delivery of benefits to the people by speeding payments and enhancing financial inclusion. The maximum total time permissible is four days after the authorization to process payment by PFMS which includes submission of response file after process of payment (success/failure) to the originator of payment file.

Steps for processing DBT payments, with timelines (for PFMS) are described below: -

Transaction time (maximum permissible time in days)	Process Step Description	System/Dependencies
T_0/T_1 (1)	Structural validation of payment file in PFMS/ payment system & pushing to sponsor bank	PFMS/Payment system, Sponsored Bank
T_1/T_2 (1)	Sponsor Bank to initiate payment process using NPCI/ Payment system Platform, NPCI to push payment instruction to Destination Bank	Sponsored Bank, NPCI/ Payment system, Destination Bank
T_2/T_3 (1)	Destination bank to process payment and submit response to NPCI/ Payment system	Destination Bank and NPCI/ Payment system
T_3/T_4 (1)	Response (success and failure) from NPCI/ Payment system to Sponsored Bank to PFMS to Scheme Software	NPCI/ Payment system, Sponsored Bank, PFMS, Scheme software

Creation of State DBT cell and its functions

DBT cell has to be created in every central Ministry and State to aggregate benefit transfer information and the activities through an electronic platform. Main features of State DBT portal should be

- Aggregated Dashboard of DBT Schemes,
- Scheme wise or location wise Reports,
- Progress Monitoring System for DBT applicable scheme / service and
- DBT Scheme Code Management.
- It coordinates with all Departments in compiling a list of schemes and programs to which DBT is applicable and providing onboarding facility of schemes decided to be implemented through DBT.
- The Departmental user is created for each department and user id and password are assigned for accessing the scheme uploaded on the State DBT portal. The Departmental user furthers creates scheme Owner (s) by creating User id and Password and assign the scheme(s) to the scheme Owner for uploading the data on the State DBT portal.
- For every DBT Scheme there is a unique and randomly generated 5- digit alpha-numeric code for identification of with a purpose of distinguishing DBT applicable component / scheme during financial transactions and for reporting of data on the DBT portal.
- As a step-in technology enablement, all benefits transferred, be it in cash or in-kind, are captured and adequately represented as part of an aggregation web-interface. DBT Bharat portal (https://dbtbharat.gov.in) has been conceptualized and developed as a national aggregator for all Direct Benefit Transfer information in the country.
- DBT Cell monitors the progress made by Departments with regards to the DBT on-boarding process viz. (i) Beneficiary database digitization, (ii) Seeding of beneficiary database with validated Aadhaar no., (iii) Transfer of benefit – for cash: using electronic means, and for in-kind: upon beneficiary authentication from Aadhaar CIDR.

How being implemented

It has been seen that implementation schemes through DBT are not uniform in all the states as

- In some state beneficiary identification is done manually without inviting application by local representative /official
- In some cases, registration on some portal is required and uploading of self-declared certificates needed,
- Some where it is fully automated.

Similarly, sanction and disbursement are fully automated in some case where as in some cases sanctions are made in different software application and payment is made by making a consolidated payment to a designated bank which take longer time than specified, case of failed transection were also noticed.

Few instances of mode of beneficiaries' identification and payment system used in different states for Social Assistance Schemes implemented through DBT mode are depicted in table:

Sl. No.	States	Social Assistance Schemes implemented through DBT mode	Beneficiary data collected through	Payment system used
1	Kerala	Indira Gandhi National Old age Pension (IGNOAP)	Sevana Pension Software (Developed by Information Kerala Mission (IKM)	Treasury system. By initial credit of amount in to a dedicated bank account and there after direct transfer to beneficiaries account
		Indira Gandhi National Widow Pension (IGNWP)		
		Agriculture Labour Pension (ALP)		
		Indira Gandhi National Disability Pension (IGNDP)		
		Pension for Unmarried Women above 50 years (PUW)		
2	Chhattisgarh	Indira Gandhi National Old Age Pension scheme (IGNOAPS)	National Social Assistances Programme(NSAP) Portal	Public Financial Management System (PFMS)
		Indira Gandhi National Widow Pension scheme (IGNWPS)		
		Indira Gandhi National Disability Pension scheme (IGNDPS)		
		National Family Benefit Scheme (NFBS)-One time benefit		
		Social Security Pension Scheme (SSPY)		
		Mukhyamantri Pension Yojna (MMPY)		
		Sukhad Sahara Yojna (SSY)		
3	Delhi	Old Age Pension (OAP) Scheme of Department of Social Welfare (DSW)	e-District portal, i.e., a web portal of GNCTD for various services.	PFMS.
		Delhi Pension Scheme to Women in Distress (DPSWD)		
		Uniform Subsidy of Directorate of Education (DoE).	*edudel* Portal	
4	Haryana	Old Age Samman Allowance	e-DISHA portal & SARAL portal.	Treasury approves EPS/bills and authorizes bank to send amount into beneficiary's accounts
		Pension to Widow and Destitute Women		
		The Haryana Divyang Person Pension Scheme		
5	Punjab	Old Age Pension (OAP)	Pension Beneficiary Management System (PBMS).	Integrated Financial Management System (IFMS).
		Financial Assistance to Widows and Destitute Women (FAWDW)		
		Financial Assistance to Dependent Children (FADC)		
6	Rajasthan	CM Old Age Samman Pension Scheme	RajSSP portal	Through Treasury pension in the bank account of the beneficiary using IFMS.
		CM Ekal Nari Samman Pension Scheme		
		CM Vishesh Yogyajan Samman Pension Scheme		

Why Information Technology Audit of DBT

As evident from above that in DBT focus is on digitization and atomization of entire process from beneficiary identification to disbursement of assistance and its proper accounting, which are possible only when Information Technology used extensively.

To check these during IT Audit we need to set our objectives first. A simplest audit objective is

1. Whether required infrastructure for DBT was created;
2. Whether process of identification and authentication of beneficiaries was adequate;
3. Whether DBT payment process was efficient; and
4. Whether the objective of the scheme had been achieved.

To examine these objectives one need to go thorough checking and assuring that the IT controls in DBT payment process exists and working properly. The controls to be checked are:

Process re-engineering for implementation of Direct Benefit Transfer:

- Whether beneficiary data was digitized?
- Whether legacy data was fully ported and if so, whether completeness and accuracy of data ported has been ensured?
- Whether adequate application controls (input as well as processing controls) are in place so as to ensure that all the mandatory fields captured?
- Consistencies in application controls i.e. input and validation controls. to minimize the risk of incorrect data entry by making validation checks, duplicate checks and other related controls.

- Is there a process/workflow for approval and/or modification of beneficiary data?
- Verification of eligibility criteria for disbursement of financial assistance, Identification of deceased beneficiaries, retired Government employees and family pensioners etc.
- Controls to check non-denial of financial assistance to eligible beneficiaries and exclusion of ineligible beneficiaries.
- Controls to check disbursement of financial assistance of same beneficiaries in multiple schemes.
- Non-updation of beneficiaries' income in the pension database.

Payment Process and Controls on Fund transfer Mechanisms:

Checks to ensure:

- Whether the Beneficiaries data of the scheme was integrated with State Treasury?
- Whether bank account details of beneficiaries were captured, and the bank account was verified/validated?
- Whether Aadhaar number was seeded to bank account of each beneficiary for Aadhaar seeded payment? If not, how the non-Aadhaar payments are managed?
- Whether payment details were intimated to beneficiaries through SMS?
- Whether timeline for preparation and authentication of payment file of beneficiaries was specified and adhered?
- Whether controls to check inadmissible payment of financial assistance due to duplicate records in database
- Whether a system of recovery of inadmissible payment of financial assistance

- Whether control exist to check delay in sanction/payment of financial assistance to beneficiaries
- Was adequate system put in place to ensure robustness, integrity and non-repudiation of processing of bank transactions?
- How are failed transactions tracked, monitored, reconciled and response sent to initiate software system?
- Whether reasons are recorded for failed transactions? How are refunds processed?
- Whether there was any reconciliation mechanism for payment pushed into the system and reached the beneficiaries accounts (successful transactions).

Adherence of timelines:
- Whether any mechanism was in place to monitor the timelines of the payment and were these timelines followed?
- Whether payments for failed transactions were re-initiated by the State Department/Implementing Agency after carrying out the required modifications/rectifications?
- Whether any time frame had been prescribed for re-processing failed transactions and remedial action taken to control the instances of failed transactions?

Internal Control and Monitoring of schemes:
- Whether it is being hosting of State Direct Benefit Transfer portal?
- Whether State and District level committees for DBT schemes were constituted?
- Whether state level committee meeting was conducted and the reports of the committee submitted to the Government of India?

- Whether Vigilance and Monitoring Committees for DBT schemes were constituted?
- Whether adequate grievance redressal mechanism with strict timelines was constituted?

Other controls and checks:
- Controls to detect duplicate beneficiaries (controls in system as well as controls built by manual process).
- Any provision of real time capturing of beneficiary data?
- Whether different authorities prescribed for processing and approval are part of the IT system and controls are in place to ensure that approval is accorded only by competent authority?
- Are there adequate and effective counter-measures relating to physical security against different environmental threats e.g. fire, flood, electrical surges, lightning, etc.?
- Whether Logical access controls like below exists:
  i. Effective password policy
  ii. Single session per user at a time.
  iii. Last login status to be displayed
  iv. Session time out after a certain period of inactivity.
  v. Lock out user after a certain number of unsuccessful login attempts and alerts of unsuccessful attempts to user.
  vi. Use of digital signatures / biometric authentication.
  vii. Unique identifier (user id) for all users for sole use?
- Has an appropriate disaster recovery/business continuity plan been developed, documented and approved? Whether regular review and update of the plan has been carried out?

- Whether the backup and restoration policy had been framed?
- Whether valid data is being entered into the application by authorized personnel.
- Does the system provide for error messages for every type of error (field level or transaction level)?
- Whether the application logs all application transaction details including time stamp, operator, approver IDs, update/modification trail etc. maintained?

Conclusion:

Thus an Information System audit of DBT give assurance to all stake-holders that process of disbursement of assistance is done in fair, transparent and reliable manner.

Reference: https://www.rd.com/list/technology-cartoons/

Functioning of Unique Identification Authority of India (UIDAI)

From our Audit Report[13] by Mr. Piyush Tiwari, AAO, iCISA

Identification of the real beneficiaries, was a major stumbling block encountered by the Union and State Governments while rolling out various welfare schemes. Absence of a valid and authenticated identity document was adversely affecting implementation and delivery of various welfare schemes of the Government. Citizens were required to furnish multiple documents such as passports, driving licenses and ration cards etc. as identity proofs. To overcome the challenge, the Union Government decided to introduce a unique identity (UID) for the residents of India. To implement this project, they established Unique Identification Authority of India (UIDAI) in January 2009. The Authority was mandated to lay out plans and policies to implement the "Aadhaar" project, which gave UIDAI the mandate to generate and issue Aadhaar, to the residents of India. The first UID, a 12-digit unique number that can be authenticated digitally, with the brand name 'Aadhaar' was generated in September 2010. Since then, UIDAI has generated more than 129 Crore Aadhaars, till the end of March 2021. Aadhaar is now established as an important identity document for residents. Various Ministries/Departments of the Government as well as other entities such as banks, mobile operators, rely on Aadhaar for identity of the applicant. However, the Aadhaar scheme was challenged from time to time by several petitioners in various Courts of law. The five judges Constitution Bench of the Hon'ble Supreme Court in a landmark judgment of 26 September 2018, upheld the constitutional validity of the Aadhaar (Targeted delivery of Financial and Other Subsidies and Benefits) Act 2016 (the Aadhaar Act, 2016). The Court has clearly ruled on the compulsory and voluntary requirements of Aadhaar for residents for availing benefits of various schemes and services.

The UIDAI had staff strength of 130 at its Delhi Headquarters and staff strength of 219 at its Regional Headquarters at the end of March 2021. The work was being carried out by officers and staffs mostly either on deputation or from outsourced agencies. Besides UIDAI also assisted States with ICT assistance and provided State level personnel through the National Institute for Smart Governance (NISG), for creating awareness and issue of Aadhaar. The UIDAI's budget in 2020-21 was ₹613 Crore with actual expenditure of ₹892.67 Crore (excess expenditure met from unspent balance of 2018-19 and 2019-20) whereas revenue earned was ₹322.40 Crore on account of various license fees, charges, penalties etc.

The Performance Audit for the period 2014-15 to 2018-19 examined the functioning of UIDAI in supporting the Government's vision to assign, as good governance, unique identity numbers to individuals residing in India. However, statistical information on generation, update and authentication services of Aadhaar and financial information referred to in the Report have been updated up to March 2021, to the extent as furnished by UIDAI. Significant audit findings are given:

- The Aadhaar Act stipulates that an individual should reside in India for a period of 182 days or more preceding the date of application for being eligible to obtain an Aadhaar. In September 2019, this condition was

[13]https://icisa.cag.gov.in/view/pdf/aHR0cHM6Ly9pY2lzYS5jYWcuZ292LmluL2F1ZGl0X3JlcG9ydC8zLzE0OTNkN2Q4YjU0MTczMmIzNzM0YmRmMzk4ZTUzYjg4LnBkZg

relaxed for non-resident Indians, holding valid Indian Passport. However, UIDAI has not prescribed any specific proof/ document or process for confirming whether an applicant has resided in India for the specified period and takes confirmation of the residential status through a casual self-declaration from the applicant. There was no system in place to check the affirmations of the applicant. As such, there is no assurance that all the Aadhaar holders in the country are 'Residents' as defined in the Aadhaar Act. Uniqueness of identity of the Applicant, established through a de-duplication process is the most important feature of Aadhaar. It was seen that UIDAI had to cancel more than 4.75 Lakh Aadhaars (November 2019) for being duplicate. There were instances of issue of Aadhaars with the same biometric data to different residents indicating flaws in the de-duplication process and issue of Aadhaars on faulty biometrics and documents. Though UIDAI has taken action to improve the quality of the biometrics and has also introduced *iris* based authentication features for enrolment for Aadhaar, the database continued to have faulty Aadhaars which were already issued. Audit had recommended UIDAI to review a updation of technology regularly and to strengthen the Automated Biometric Identification System so that generation of multiple/duplicate Aadhaars can be curbed at the initial stage itself.

- Issue of Aadhaar numbers to minor children below the age of five, based on the bio metrics of their parents, without confirming uniqueness of biometric identity goes against the basic tenet of the Aadhaar Act. The UIDAI needs to review the issue of Aadhaar to minor children below five years and find alternate ways to establish their unique identity

- During 2018-19 more than 73 per cent of the total 3.04 Crore biometric updates, were voluntary updates done by residents for faulty biometrics after payment of charges. Huge volume of voluntary updates indicated that the quality of data captured to issue initial Aadhaar was not good enough to establish uniqueness of identity. UIDAI did not have a system to analyze the factors leading to authentication errors. UIDAI may make efforts to improve the success rate of authentication transactions by analysing failure cases. It did not carry out verification of the infrastructure and technical support of Requesting Entities and Authentication Service Agencies before their appointment in the Authentication Ecosystem, despite stipulations in Aadhaar (Authentication) Regulations.

- UIDAI is maintaining one of the largest biometric databases in the world but did not have a data archiving policy, which is considered to be a vital storage management best practice. UIDAI may frame a suitable data archival policy to mitigate the risk of vulnerability to data protection and reduce saturation of valuable data space due to redundant and unwanted data, by continuous weeding out of unwanted data.

- UIDAI's arrangements with the Department of Posts were not adequate to guarantee delivery of Aadhaar letters to the right addressee, as seen from the large number of Aadhaar letters being returned as undelivered.

- UIDAI may address the delivery problems with their logistic partner namely DoP, by designing a

- customized delivery model, which will ensure delivery of Aadhaar letters to the correct addressee.
- UIDAI provided Authentication services to banks, mobile operators and other agencies free of charge till March 2019, contrary to the provisions of their own Regulations, depriving revenue to the Government.
- UIDAI did not penalise the Managed Service Provider for failure to achieve the expected service levels in the performance of biometric solutions. UIDAI may levy penalties on Biometric Service Providers for deficiencies in their performance in respect of biometric de-duplication (FPIR/ FNIR) and biometric authentication (FMR/ FNMR). Audit recommended to take necessary step in this regard.
- There was deficiency in assessment of the requirements for Field Service Engineers (FSE) resources to be hired from NISG and in monitoring the payments made to them. UIDAI should strictly follow the standards of financial propriety while procuring services and ensure that advances are not paid for in excess of requirements.
- UIDAI had not effectively monitored funds released to States as Grants-in-Aid towards ICT assistance for creating infrastructure. UIDAI may improve upon its financial management of grants given to State Authorities by proper monitoring and ensuring regular and timely receipt of Utilization Certificates from them
- The process of capturing of grievances/complaints has not been streamlined and does not display a clear picture for analysis. Also, the complaints lodged at the Regional Offices level did not get the attention of UIDAI Head Quarters, compromising the effectiveness of the grievance redressal mechanism, besides the delays in settlement of grievances.

Aadhaar being used as unique identity document to resident and non-resident Indians has now much more importance than earlier. The use of Information Technology in capturing personal details, validating and generating Aadhaar number and securely maintaining data entailed Audit to attempt a Performance Audit. This Performance Audit highlights the weakness and recommends course corrections which need to be taken up by the UIDAI authorities.

"Sometimes we laugh, sometimes we cry, but never do we throw our computers out the window."

Reference: https://www.rd.com/list/technology-cartoons/

# A Tailor-Made Audit Module under PFMS/CFMS

Mr. Krishna M Jaipuriar, Sr. AO

Mr K N Jaipuriar worked in different wings like State Revenue Audit, Works Audit and General Administration. He has conducted an IT Audit of Bihar VAT. He developed an idea for creation of a tailor-made Audit Module under CFMS especially for Audit purposes.

In December, 2013 the Union Cabinet approved the national roll out of Public Finance Management System (PFMS). In Bihar State it is known as Comprehensive Financial Management System (CFMS). This is an integrated platform of Information Technology (IT) where all financial activities from budgeting to making payments are to be integrated and hence this becomes a huge data base system of a state where no manual intervention is required for any financial transactions. It is a web based tool where not only payments are processed but tracking, monitoring, accounting reconciliation and reporting of all receipts and expenditure of the government are possible on real time basis. Hence, in this system the audit also has to be prepared itself to access the data and analyze for its use.

## What is a Tailor Made Audit Module

An Audit Module under CFMS is a dedicated reporting module under Auditee's financial management system especially for the use of audit purpose and it is called tailor made as it is customized as per the requirements of audit. This becomes a great tool for audit to fetch/retrieve the information from the database for analyzing the risks and get the appropriate information from the system of a huge database and focus on vulnerable areas of transactions (payments or receipts). This module is a combination of different reports, specific data/information, and specific transactions. Further, it facilitates in generating reports and extracting information from the master database on real time basis which have attributes of data integrity, authenticity and non-repudiation.
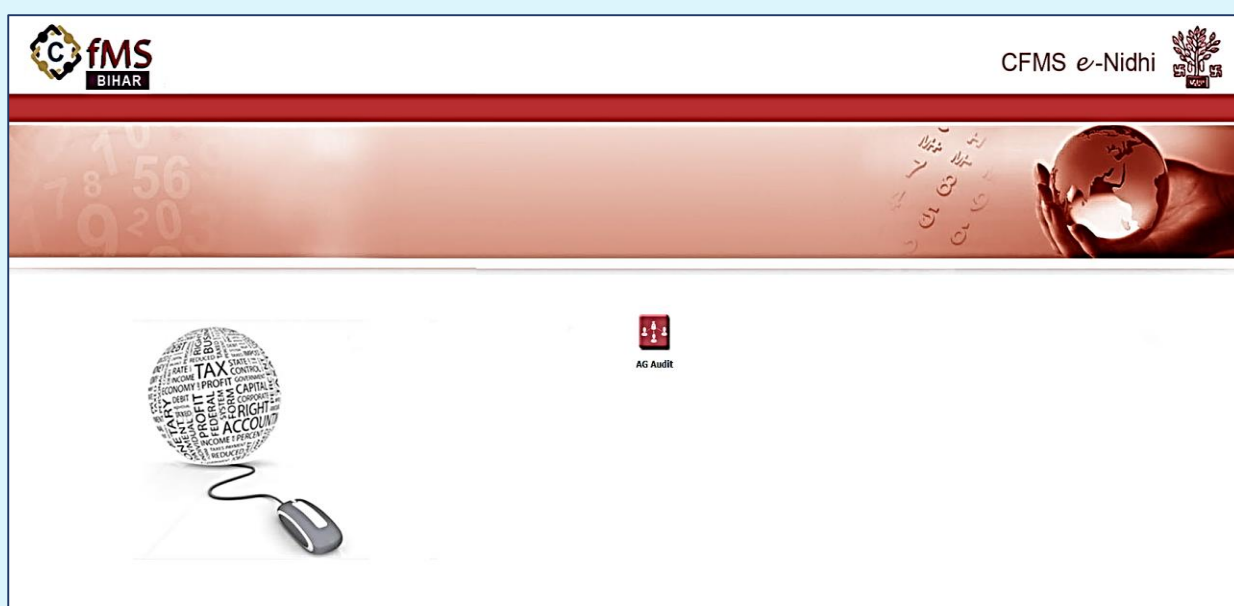
Why an Audit Module is required

After implementation of PFMS/CFMS all the transactions are recorded in the database system automatically and stored in the dedicated server which remains under ownership of a particular department (IT or Finance Department or others as prescribed) and all related departments/offices are given access as per their requirement. But, as far as audit is concerned, it has to visit different offices at different locations and request the required data/information of this system to fulfill its audit requirements. In some cases, audit may not get the required information from the auditee due to many reasons, such as due to lack of access/ knowledge of the auditee to get the information required by audit, lackadaisical approach of the auditee to provide the same or in some cases it may by the failure to demand the proper data/information which are actually useful for audit purposes. But, the availability of an audit module enables audit to retrieve the required information from the database without any dependency on auditee.
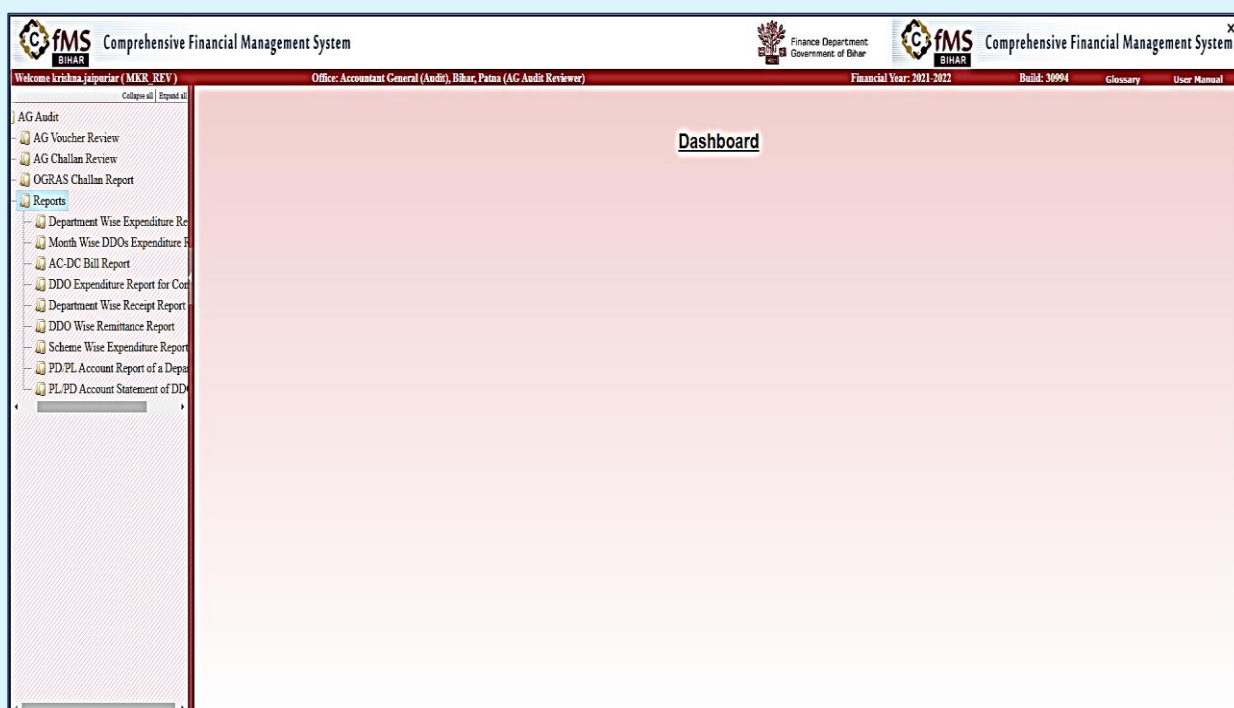
Mandate with respect to Audit Module for SAI

Regulation on Audit and Accounts 2020 specifically provides the Right of access to Audit and Responsibilities of the auditable entity including Union and State Government. Audit's access includes all data, information and documents, including electronic data and access to information systems of the auditable entity, as may be required and asked for. Audit's access includes complete and timely access to confidential and sensitive data, information or documents, handling of which will be governed by Regulation. Hence, it is crystal clear that audit may ask all the data or information of a financial management system and the Audit Module under this system is nothing but an integrated and customized data/information requirement of audit from auditee.

## What are the advantages of this module

As stated earlier that this is a customized module as per requirements of audit hence the audit can use the reports/information of this module to analyze the risks for its audit planning. This gives a facility to pin-point the

audit efforts by showing the grey areas for audit. This enables audit to minimize the dependency on departments to get the information for audit planning and also to minimize its efforts at field during local audits. For example, if department wise, year wise and accounting heads wise details expenditure reports can help audit to make its risk based plan at headquarter while a Drawing and Disbursing Officer (DDO) wise, month wise expenditure reports helps audit to select a particular month for detailed audit. Whereas a detailed transactions report of Personal Ledger Accounts or Personal Deposit Accounts shall help audit execution.

auditee as this includes expertise and costs both hence this requires an exhaustive exercise before giving the requirements of reports by audit and needs audit foresights so that each and every report may produce fruitful information for audit analysis. All reports should have a data download facility with date and time of download so that it may be used as an authentic key documents. As these reports do not give direct audit observations and needs to be analyze further by arranging the data/information generated from these reports hence this report generated should be compatible to the different Computer Assisted Audit Tools (CAATs).

Care to be taken during development of a Tailor-Made Audit Module

First of all, the development of an Audit Module depends on the acceptance of the
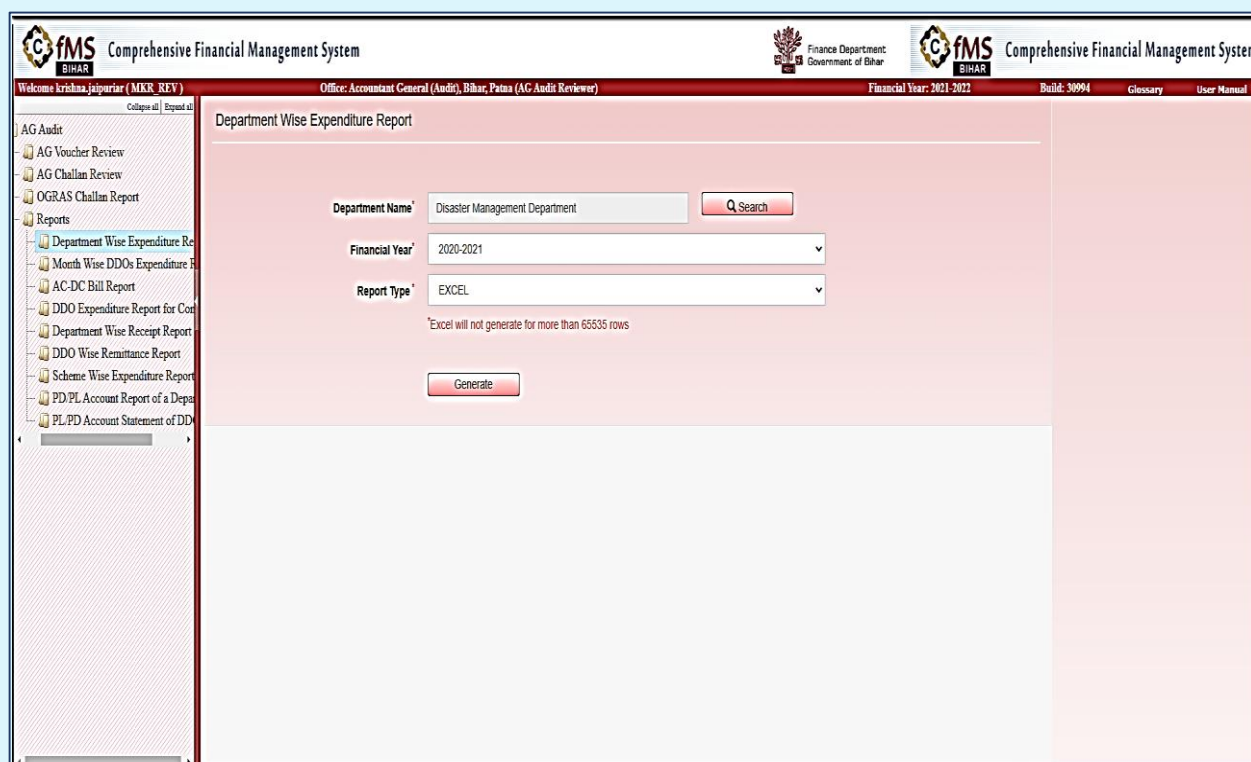
Our Audit-module development approach and experience

After implementation of CFMS in Bihar 2019-20 Audit started thinking over a tailor made audit module for the use of Office of the Accountant General (Audit) so that the reports developed in this module may be utilized for audit planning and risk analysis as well as some ready-made audit observations. For this we consulted the agency responsible for development of CFMS as

well as with the finance department which was a nodal department for deploying this application and given our requirements, after consultation with all wings, they agreed to develop the same. However, still some reports are to be implemented for which we are trying our best to convince the department for its utility and also our mandate to get the same. Hopefully, Audit shall get all the required reports on this module and utilize this information for betterment of audit.

Reference: https://www.rd.com/list/technology-cartoons/

App watch

1. Self4Society

'Self4Society' is the first of its kind mobile based platform that has been imagined with the idea of streamlining the government identified domains, the social activities of the corporates and their employees.

'Self4Society' empowers employees to participate in initiatives as per their preference under broad areas identified by the government, and the corporates aimed at giving back to the society.

The Self4Society platform is the premiere workspace for Electronics and IT Corporates to organise employee engagements (Initiatives) for social work. The organisation can create their own Initiatives under the identified National Causes.

Self4Society Admin portal
self4society.mygov.in: for Electronics and IT Industry's Corporate HR or CSR representatives, who will create the organisational profile and upload Initiatives.

Self4Society App: for employees, who will volunteer for Initiatives and contribute their time to tasks on-the-ground.

Link: https://self4society.mygov.in/app-link/

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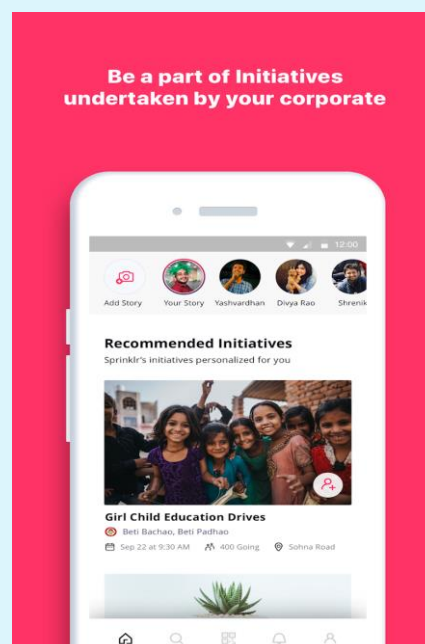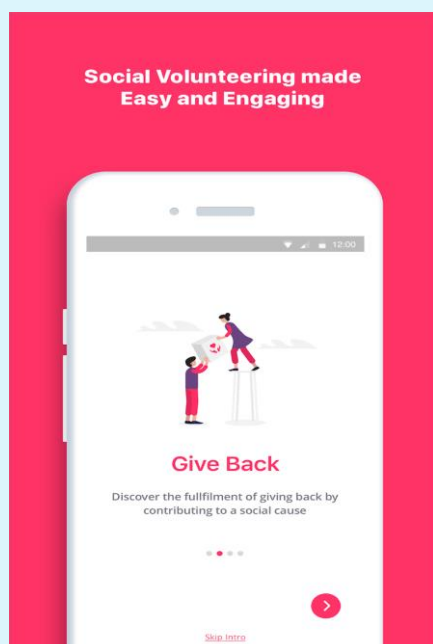
2. DigiSevak

Conceived by the National e-Governance Division (NeGD), Ministry of Electronics and Information & Technology, DigiSevak platform connects interest citizens with government to volunteer for various Digital India activities by Ministries and agencies of government. The platform offers a system for end-to-end management of volunteering activities.

Objectives of DigiSevak

- To provide a platform to citizens to volunteer for Digital India related tasks and activities
- To provide a platform to ministries and government agencies to find volunteers for Digital India related tasks and activities.
- To provide an opportunity to citizens to contribute to the success of Digital India by volunteering in their interest and skill areas.
- To create mass awareness about key focus areas of Digital India like cyber hygiene, digital literacy, e-waste, MyGov, Digital Locker, CSCs etc.
- To reward and recognize the work of volunteers through peer review, social media and point redeem system.

Link http://digisevak.gov.in/

Updates

Google maps gets estimated toll prices

Google map will show the likely toll prices on a route so that one can take that into consideration while calculating the cost of travel.

Clothes with sound

A new fabric with the ability to record sounds has been developed by a team of researchers. Paper titled" Single fiber enables acoustic fabrics via nanometer-scale vibrations"

Quiz

Use of IT in Citizen Services

Q.1 _____ is the term used for effective use of Information & Communication Technology (ICT) to provide Government services to the citizens.
A.   E-governance
B.   ITES
C.   ICT
D.   NGO

Q. 2 ICT has played a major role here, in facilitating the Government to bring about transparency and accountability in its programmes, and proper identification through _____ trinity.
A.   PRA
B.   JAM
C.   NGO
D.   none

Q.3 With _____ of technology such as the Internet in rural areas, citizens become aware and are better able to understand their rights and responsibilities.
A.   Fertilization
B.   Pesticides
C.   Proliferation
D.   none

Q.4 ICT includes the following:
A.   Internet
B.   Wireless networks
C.   Cellphones
D.   All of the above

Q.5   ___ app is meant to provide information about the government crop insurance scheme.
A.   Crop Insurance
B.   W-fi Service
C.   None of the above
D.   none

Q.6 which is not a category of a Public sector organization when it comes to their approach towards AI in governance.
A.   Emergent
B.   Adopter
C.   Innovator
D.   Acceptor

Q.7 The _____ acknowledge the potential of AI but are yet to set out their transformation journey.
A.   Emergent
B.   Adopter
C.   Innovator
D.   Transformers

Q.8 The _____ utilize AI in processes but are yet to embed AI across their institutions.
A.   Emergent
B.   Adopter
C.   Innovator
D.   Transformers

Q.9 ____ have already integrated AI into their core services.
 A.   Emergent
B.   Adopter
C.   Innovator
D.   Transformers

Q.10 ____ have accepted AI as one of the key strategic priorities and have allocated resources in developing governance systems conducive to the growth of AI.
A.   Emergent
B.   Adopter
C.   Innovator
D.   Transformers

Q.11 _____ supports farmers in the assessment of crops with AI.
A.   Kisan drones
B.   Khet Drones

C. Raiyat Drones
D. Khalihan Drones

Q. 12 What is the problem where the inputs and operations are not visible to the user, or another concerned party?
A. Black Box problem
B. Yellow Box problem
C. White Box problem
D. Red Box problem

Q. 13 _____ of the services assesses if the Government identifies and responds timely to the needs of the citizens.
A. Privatization
B. Personalization
C. Generalization
D. Liberalization

Q. 14 AI has potential uses in which services
A. Detecting frauds
B. Disaster management
C. Informing the citizens proactively about their entitlements

D. All of the above.

Q. 15 _____ computers are programmed to carry out tasks that require human intelligence.
A. Artificial Intelligence
B. High Tech
C. Super
D. Complex

Answers:

Q1. A	Q9. C
Q2. B	Q10. D
Q3. C	Q11. A
Q4. D	Q12. A
Q5.A	Q13.B
Q6. D	Q14.D
Q7. A	Q15. A
Q8. B	

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