

Case Studies on e-Governance in India

Integrated Works and Document Management System (IWDMS)

Ravi Saxena

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About the Initiative

This publication is a part of the Capacity Building initiative under the National e-Governance Plan (NeGP) by NeGD with an aim to draw out learnings from various projects implemented in various States/ UTs and sharing this knowledge, in the form of case studies, with the decision makers and implementers to benefit them, by way of knowledge creation and skill building, from these experiences during planning and implementation of various projects under NeGP.

Conceptualised and overseen by the National e-Governance Division (NeGD) of Media lab Asia/DeitY these case studies are submitted by e-Governance Practitioners from Government and Industry/Research Institutions. The cases submitted by the authors are vetted by experts from outside and within the Government for learning and reference value, relevance to future project implementers, planners and to those involved in e-governance capacity Building programs before they are recommended for publication. National Institute for Smart Government (NISG), working on behalf of this NeGD provided program management support and interacted with the authors and subject matter experts in bringing out these published case studies. It is hoped that these case studies drawn from successful and failed e-Governance projects would help practitioners to understand the real-time issues involved, typical dilemmas faced by e-Governance project implementers, and possible solutions to resolve them.

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1. Abstract

Government of Gujarat has undertaken Integrated Workflow and Document Management System (IWDMS), a multilingual solution for automating the functions at all levels of the administrative hierarchy for all State departments and offices. This project was initiated by the Department of Science and Technology in 2004 and since its implementation, IWDMS has greatly transformed the Government Work Culture. It has introduced a common platform for processing of documents in all Government Departments and has also brought in standardization of processes, computer typing (on Unicode Compliant Fonts). IWDMS thereby provides Document Management, Workflow Management, Collaborative Environment and Knowledge Management in an integrated fashion and delivers an Electronic Workplace.

The intention of this project is to provide a modern, open and functionally-rich platform that will facilitate process transformation in support of business very quickly. It has features such as file processing, workflow, rule engine, security, transaction processing, search facilities etc. and relies on centralised infrastructure which allows data to be pulled and pushed from IWDMS and legacy systems as required.

As new processes are identified, the constraints normally associated with systems, data and uniformity are removed – results are quick which lead to safe implementation. Over the time, functionality has become rich and independence of legacy systems and workarounds have been reduced or removed.

2. Keywords/key phrases

Government Process Digitization, Document Management, Workflow Management, Collaborative Environment, Knowledge Management, Business Process Reengineering, Open Source Platform and Paper-less Office.

3. Note to Practitioners

As Govt. of Gujarat has taken very early initiative to implement a large-scale computerization project, they decided to select an Implementing Agency (IA). The IA was selected through evaluation based on the scale of its technical solution, cost competitiveness, ethical background, market values, manpower, and experience.

This project serves as an example for similar kinds of implementation elsewhere in state governments.

The following activities, as incorporated during the course of the project are a good fit with the study factors for Capacity Building Program:

- Formation of Apex Steering Committee under guidance of Chief Secretary and Additional Chief Secretary (Dept. of Science & Technology)
- Formation of Project Monitoring Committee under guidance of eminent and empanelled Department Champions for Requirements and Implementation of Workflow & File Management Modules, Common Applications(Establishment procedures, LAQ, Court Case, Budget)
- Transformation of Physical Business Process into e-Business system
- Business Process Re-engineering, like Unique file number generation through the system due to which Inward-Outward registered files are maintained electronically
- Govt. of Gujarat has provided basic computer training to employees
- Govt. of Gujarat has provided Local Language (Gujarati) typing training
- Govt. of Gujarat has made simple computer training programme like CCC & CCC+ mandatory for getting promotions
- 3000+ users were provided training and handholding support over a period of nearly 5 years
- Department-wise one resource deployed for functional support and to resolve minor level technical issues
- User manuals are provided to all the employees for better understanding of electronic processes
- Centralized help-desk of IWDMS is also available for technical and functional issues

4. Project context

The pre-implementation scenario gives a clear understanding of State Government's decision to implement this project for its offices Secretariat-wide.

Government processes are inherently complex and involve a tremendous amount of rule-based processing and solid knowledge-base (which includes GOs, GRs, Notifications, Rules/Policies, etc.). For example in case of processing of leave request of any employee, it is required to check the leave balance of the particular leave which employee is seeking, it is thus required to check as to how many times employee has asked for the same leave type request in the particular year. It is well-noted that Government Departments often work in individual silos, for example Health, Finance, Defence, Education, and Industry, which have evolved into knowledge centres overtime. However, a majority share of knowledge is implicit and does not have well formulated processes for sharing that knowledge across other departments and with citizens. For example major processing of any financial related

work in any department requires quick references of GOs/GRs issued by Finance Department, but at times it becomes quite difficult to search for such documents. Also, citizens often require GOs/GRs related to land as issued by Revenue Department, however there is no single citizen interface where these documents could be located.

The office procedures defined in most Government departments are generally age-old and some have become obsolete. For example leave of a Superintendent of Police is still approved by Collector. The Government scarcely spends time in studying and modifying such processes. However, with advancements in technology and globalization, these procedures would greatly benefit from improvements by resurfacing and reengineering the systems to reflect the changing landscape.

Generally, information and applications forwarded within a government department are scrutinized and processed in the form of cases. These cases are then forwarded to respective competent authorities in pre-defined hierarchies for approval. Since the entire system works on manual cases, at times it becomes difficult to trace the pendency of such cases with the users. This is generally considered as a case that is lost or pending at higher officials for decision. It also results in considerable loss of time in case processing and eventually to the dissatisfaction of citizens and government departments which had filed the original application. Increased case processing time is typically remarked as loss of efficiency, accountability and transparency by the Government.

Matters related to management of Stores, Office Accounting, Human Resource Management have been elaborated in Office Procedures Manual and Civil Service Rule Books. All these processes are policy driven and consume considerable administrative time for implementation. It also requires maintenance of Employee Service Books and Registers. For example, an Earned Leave request of an employee may be approved subject to verification of balance availability as per the latest balance as recorded in the Service Book of the employee. Preparation and preservation of the service book of an employee is a mammoth task. Such processes require urgent attention in any office to eliminate a large number of papers consumed while transitioning towards paper-less office.

Work Performance of any government department depends on the time taken by the department to process the documents/cases within the departments. Physical inward registers were the single source of information to track movement of any case in the department and also to determine the time the case is pending with any employee for action to be taken. This was partly because of the work-load on employees as well as lack of work prioritization at employee level.

It is observed that most of the time, for processing of any file/correspondence, an employee needs to refer to previous such cases or government rules/regulations/ policies. At times, it required references of government orders which were issued a couple of

decades prior. Hence, this incapacitated the employees many times in building a strong argument for any case to be put up to senior authorities.

Most of the administrative processes including human resource management and asset management are stereotypical processes. However the rules/policies laid out and followed in different departments varied to a certain degree. There was no process standardization across government machinery and uniformity of rule implementation was a major challenge. Also, a few of the processes required permanent maintenance of records, for e.g. service book of employees. This actually becomes a painstaking task.

Budget and plan preparation involved a number of stakeholders including HODs, Commissionerates, Directorates, etc. This required a seamless consolidation of demands and plans from all stakeholders and finally represented a department's and state government's performance portrait for the next fiscal year. These processes involved a good deal of physical file movement and greater efforts from the users who were involved in consolidating and finally preparing the budget and plan.

Despite the administrative and procedural challenges mentioned above, the major challenge was to undertake capacity building in terms of training and harnessing manpower for e-Governance initiatives and setting up the required IT Infrastructure in terms of end-user hardware/stable networks, etc.

Capacity Building in terms of manpower demanded a considerable effort as it involved employees who were supposed to be given basic computer sensitization training and typing training. It also required a major effort in terms of change management for changing the mind-set of users for apprehensions against IT systems.

4.1 Project overview

IWDMS automates various processes/functions at all levels of the administrative hierarchy of any Governmental department. Most of the work done by Government departments is workflow-intensive, meaning that there is a lot of information flow in the form of files and correspondences.

- The 1st Phase of the project covers implementation of the solution in 25 Government Departments in the Secretariat. Total 2500+ users are configured for 25 Departments.
- In the 2nd Phase, HODs of various departments are linked to form a single file-system with their Administrative Department.
- Across the state, all the Indian Administrative Services (IAS) officers, Gujarat Administrative Services (GAS) officers and Indian Police Services (IPS) officers are configured in the system.

- Some of this work necessitates the creation and maintenance of databases that hold data that is critical to the decision-making process. IWDMS provides Document Management, Workflow Management, Collaborative Environment and Knowledge Management in an integrated fashion and delivers an Electronic Workplace that will result in productivity improvement in a Government organization.
- IWDMS has a total of 14 Core applications, 49 Common Applications and 300+ Department Specific applications.
- IWDMS application suite consists of core applications for basic document movement and storage. Besides, common applications including Establishment Process, HRMS processes, e-Budget, Legislative Assembly Questions (LAQ), Court Cases, RTI, Asset Management, Cabinet Meeting, Appointment Scheduler etc. and Departmental applications to automate specialized tasks undertaken by each department for e.g. Grant Assessment application for Secondary and Higher Secondary Schools for Education Department are also covered.

4.2 Objectives

- To design and develop an ICT enabled office management system
- Ensure efficient & transparent administration
- Enhance Productivity
- Enable Policy Based Processing and build a common knowledge base
- Provide a mechanism for information sharing across various entities of Government
- Enable prioritization of work
- Promote an electronic work place
- Use IT as an enabler to help in daily work

4.3 Stakeholders

Following Table identifies the key stakeholders of the project and gives a brief description of their roles.

Stakeholder	Description
Project Owner	Department of Science & Technology is the Owner of IWDMS Project and provided the required support for implementation and operations of the project including administrative policy reforms, legal and financial framework, administrative clearances, etc.
Government Departments	The constituent departments of Government of Gujarat implemented IWDMS to ensure implementation of Workflow Automation in their Offices.
State Data Centre	The State Data Centre hosts IWDMS.
Network Services/ Bandwidth Provider	The Intranet Connectivity from the State Data Centre to the Government Departments is provided by GSWAN.
TSP	Tata Consultancy Services Ltd. developed the overall solution for IWDMS.

4.4 Major Components of IWDMS

- The File Management System is made up of applications that cater to the file processing requirements which includes tracking inward/outward, creating & moving file, monitoring & tracking file, generating order and record room for files & correspondences
- The Workflow/Organization Model contains the organization structure which includes the hierarchy of people in the department, their roles, reporting relations, the subjects they deal with and the sections they belong to
- Document Management System tracks the life cycle of a document and facilitates automated versioning and maintenance of documents
- The Knowledge Management System consists of a repository of various Governmental documents which could be searched on the basis of its name, description, publish date, etc.
- The Dashboard provides an Executive Information System through which an officer can monitor and control the work done under his/her purview
- MIS consists of customized reports in various formats which cater to all the day-to-day activities at the Secretariat. The reports are parameterized and can be generated by taking a combination of the desired parameters

- Business Application caters to the subjects dealt with & achieve automation of work activities, office procedures and service matters of the employees
- Administrative Application define and maintain the organization model with secured access through user & role based privileges
- In-built communiqué monitoring system (email communication system)
- Built-in dashboard providing holistic view of work distribution implemented on me and my down-line concept
- Audit Trail for all transactions in the system
- Communiqué Monitoring as a powerful internal messaging tool within Government Departments including salient features of an email messaging system

5. Key Benefits

- IWDMS has created an office management system wherein all manual work that was previously done in the Secretariat is put up as Electronic Work in the system. The work flows in form of files/correspondences and enables the user to type noting, attach references of previously issued GOs/GRs/Notifications, add references of precedent cases and forward the file/correspondence in administrative hierarchies for decision making.
- IWDMS ensures a unique file numbering system across all departments of Government. This ensures ease of file traceability either through file number, file subject, department, and date when created and file content. Also, it is easy to track the pendency of any file/correspondence with any employee as to how many days the file/correspondence is pending with the user for any action.
- IWDMS reduces touch points of workflow in administrative hierarchy. It also eliminates delays in sending manual files through office boys/peons, maintenance of registers, tracking of documents. This almost reduces the file-processing period to 40% and thus greatly increases the productivity and efficiency of the system. For example, in IWDMS any document which is once electronically inwarded into the system, it is recognized by its unique ID as generated by IWDMS. This is in contrast to the manual document processing system wherein every time a document is moved, its movement is captured in physical registers; IWDMS automatically traces the document movement within the system and does not require maintaining any separate entries. This drastically reduces the document processing time and touch points within the hierarchy.

- All applications in IWDMS are process driven and have been reinforced by implementing the necessary rules. For example an employee cannot apply for Earned Leave more than three times in a calendar year. IWDMS leave application implements this rule and it stops an employee from applying for earned leave if the employee has already applied for it thrice in the same calendar year. This reduces any human induced errors in document processing which are apparent in the manual system of working.
- IWDMS builds a common knowledge bank of GOs/GRs/Notifications which is accessible by all users of the system. This facilitates users to refer to various policies, rules, amendments as may be required to them from time to time. The knowledge bank is also posted through a common portal for citizens.
- IWDMS promotes a single file system; hence it is possible to seamlessly perform inter-departmental file transfers. This also helps in easy traceability of the document.
- IWDMS helps to prioritize any file/correspondence based on the urgency of the decision to be taken on the same. It also helps senior authorities to highlight/mark documents which are to be urgently worked upon and cleared after decision-making. Any officer who works on such a prioritized case will always have the case highlighted or flagged, which would alert him to put up the case on highest priority. IWDMS would also generate periodic SMS and email alerts based on case movement. It would also auto-escalate such cases to superior authorities in case no action has been taken on such cases for more than the prescribed time duration. It thus helps employees to categorize and attend high-priority work. Also senior management are able to have a bird-eye view on the healthiness of work and work pendency within their department.
- IWDMS also computerizes day-to-day work of any government department which includes administrative work including leave/loans/advances/reimbursements requests, transfers, promotion, departmental inquiry, service book management, dead stock registers, etc. This eliminates considerable amount of manual processing of work. Moreover, because of virtue of IWDMS all such processes are standardized across the departments.
- All stereotypical processes of administration including Human Resource Management, Inventory Management, Budget and Planning have been computerized, which has led to considerable decrease in paper based file processing. For example, for the last five years, the entire budget of the state is prepared on IWDMS which has reduced 6,000 physical files which were required every year for budget processing. Moreover, budget books are also being generated from the system.

- All IAS, IPS Officers including collectors have been directed to apply leave online through IWDMS.
- HODs of few of the departments have also been taken up in IWDMS and this has allowed for a single file system exchange between departments and its HODs.
- Hon' CM's Office of Gujarat State has been ISO 9001:2000 certified due to computerization of various Government processes on IWDMS

6. Issues and challenges faced during implementation

Major challenges faced during implementation are summarized below:

- It is a general perception that computerization reduces human jobs or computers can do the work of multiple people in an organization. This apprehension for IWDMS amongst government employees reduced the acceptability of IWDMS. Also, majority of employees working in Secretariat fall in the age group of 40-50 years which is generally considered as the age group where learning growth of a human being is retarded. This factor further reduced the usability of the system.
- Building computer proficiency of employees who were actual users of the system. This required basic computer sensitization training and typing training to about 2500+ users. This became a major challenge as most of the employees belonged to the age group of 40+ years. This is typically considered as a period of life where an average human being's learning curve either is stable or starts declining. This also led to a major repeat of training sessions for end users.
- IWDMS required employees at each level of the administrative hierarchy to get involved for using the new system. It required every department to be prepared with required hardware (including Desktops for every user, printers, and scanners) and Local Area Networks. However, most of the departments were not IT Infrastructure ready. Desktops which were already allotted to employees had become obsolete, department LAN also did not function properly. It required departments to renovate their IT Infrastructure; however government procurement process took considerable time for finalizing vendors who could provide the required IT Infrastructure. This was further hampered when some of the departments decided to renovate the civil infrastructure/office setup before actually implementing the new system.
- It is often seen in government project implementations that the stakeholders who had set up the project priorities and vision are not the ones who get the projects implemented. This is because of frequent government transfers, re-shuffling, etc. Also, the ignorance of stakeholders in terms of IT system implementations triggered a

trend of changing priorities, new requirements, enhancements. This actually delayed the stabilization of system usage and adaptability amongst the stakeholders.

- Just because there is a system in place, it does not assure its usage, since system usage completely depends on the involvement of the end-users. Usage of systems introduced need to be mandated as part of office procedure or as a policy. Delays in necessary administrative orders for system usage also slowed down the initial system implementation momentum.

7. Key lessons/ achievements

7.1 Key Lessons

- Changing priorities of key stakeholders: This was one of the major issues in IWDMS implementation. Any authority occupying the post of the key stakeholder of the project would drive the project according to his/her vision. This led to major changes in system design and implementation strategies for the project.
- Top Management Support came in late for the project. Since Dept. of Science & Technology was the owner of the project, it took time for other departments to get convinced to use the project. In fact, directions for system usage came in late from senior authorities in the government. However, few departments like CM Office, CS Office, Finance and GAD did pick up the project to showcase its usability and efficiency. For example, Finance prepared the State Budget using IWDMS; GAD prepared Annual Development Plan for same; CM Office processed all CM relief fund requests using IWDMS; CS Office monitored work progress in various departments through IWDMS. Thus, top management support played as another crucial factor in system implementation.
- Infrastructure unavailability also delayed project implementation in some of the secretariat departments. Some of the departments were under renovation when the project was implemented and this delayed project implementation by more than 6-12 months in such departments. Also, IT readiness of some of the departments was very low. IT readiness included availability of computers, networking and computer literacy amongst employees. Infrastructure unavailability delayed the overall project implementation by more than 1 year.
- During the initial days of implementation, employees had to work in their routine physical files as well as on IWDMS. This was due to the fact that it is not possible to fully migrate to any electronic system overnight, since majority of work was continuation of the work which had been already put up through

physical files. This actually demotivated employees since they perceived that they had to process the same work twice; once on physical file and secondly on IWDMS. Also, there was no motivation from top management for employees. Government should have had worked upon an incentive scheme for employees which could have been based on the number of cases/files put up through IWDMS for processing. However, since there was no incentive or motivation for employees to work on IWDMS, it gradually impacted the usage of the system.

7.2 Achievements

- Registry at all departments 100% online
 - It is mandatory in all departments to Inward all Correspondences/files at Registry Level of the Department
- Online Budget
 - Expenditure budget prepared online for all departments
 - State budget for the financial year 2007-08, 2008-09, 2009-10 & 2010-11
- Annual Report for Vigilance Commission
 - All complaints are forwarded to departments (CVO) and tracking
 - Citizens can know the status of the file using KIOSK
 - Annual Report is generated online for submission to Assembly
- Leave Application
 - It is mandatory for all the IAS, GAS and IPS officers across the state to apply for leave in IWDMS only.
- Legislative Assembly Questions
 - Online Submission of LAQ – building a data base of LAQs
- GR Publishing
 - Online publishing of Government documents including resolutions, acts, policies, ordinances, notifications, etc. that saves considerable time, effort and cost of printing and publishing as compared to paper based system
- One Day One District
 - District-wise tracking of administrative problems
- Hon' CM's Relief Fund
 - Capturing request and tracking until approval
- Investment Monitoring

- Tracking and Monitoring of Moues signed during Vibrant Gujarat events
- Bilingual support
 - Software supports both English and Gujarati
- Search and Pendency
 - One can track File/Correspondence with help of different parameters like unique number, description of file, status of file, file pending with etc.
 - After sending the file, user can track the file that it is pending with whom and for how many days in graphical as well as tabular format

8. Methodology adopted for case writing

This case study has been developed as per the guidelines and by interactions with field team members and based on observations and reviews during IWDMS implementation in Gujarat.

9. References

Some of the references which were taken into consideration during system design and implementation are mentioned below:

- Office Procedure Manual for State Government
- Finance Department Manual for Budget Preparation
- General Administration Department Manual for Plan Preparation

Author details

Shri Ravi Saxena (IAS)

Additional Chief Secretary, Department of Science & Technology, Govt. of Gujarat

Email: secdst@gujarat.gov.in

Project Fact Sheet

- Implemented since October 2005 in all secretariat departments
- Extended to HoDs in October 2006
- Some other facts and figures are as below:

No. of Departments covered	25
No. of HoDs configured (Ahmedabad & Gandhinagar)	50+
No. of Core Modules	14
No. of Common Modules	49
No. of Dept. Specific Modules	300+
No. of Users	5,000+
Average Usage at Secretariat	Approx. 60%
No. of Tappals inwarded as on 26 December, 2011	29,00,000+
No. of Files created as on 26 December, 2011	4,70,000+
No. of Budget files for 2007-08, 2008-09, 2009-10 & 2010-11	20,000+
Knowledge base – No. of GO, GR, Circular, Acts, etc.	10,000+



**National Institute for
Smart Government**

Hyderabad

YSR Bhavan, Financial District, Nanakramguda,
Hyderabad - 500032
Telangana, India.
Ph: 040-66545352, Fax: 040-66545300

Delhi

Mahanagar Door Sanchar Sadan, 9, CGO Complex,
Residential Complex,
1st floor New Delhi-110003
Ph: +91-11-24321445, Fax : +91-11-24321444
Website : www.nisg.org



National e-Governance Division

National e-Governance Division

Department of Electronics and Information Technology (DeitY)
Ministry of Communications & Information Technology
(Government of India)
Electronics Niketan, 6, CGO Complex,
Lodhi Road, New Delhi- 110 003
India
Ph. +91-11-30481624
Website: www.negp.gov.in