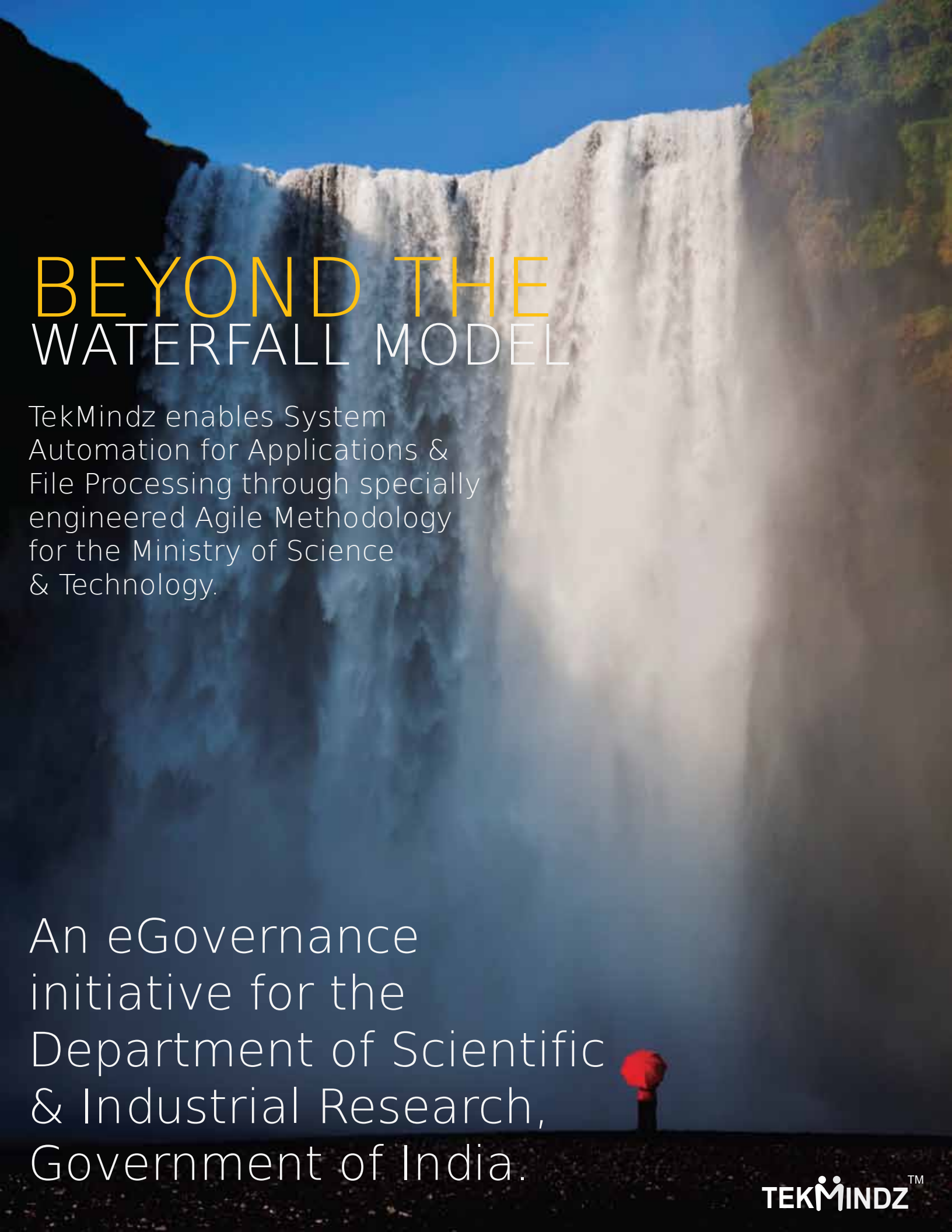


BEYOND THE WATERFALL MODEL

TekMindz enables System Automation for Applications & File Processing through specially engineered Agile Methodology for the Ministry of Science & Technology.

An eGovernance initiative for the Department of Scientific & Industrial Research, Government of India.

TEKMINDZ™

Client Overview

The Ministry of Science & Technology has a department dedicated to Scientific and Industrial Research, established under the, Government of India. The department promotes R&D by industries and supports a larger cross-section of small and medium industrial units to develop state-of-the art globally competitive technologies of high commercial potential. It acts as a catalyst for faster commercialization of lab-scale R&D to strengthen industrial consultancy and establish user friendly information network to facilitate R&D activities in the country.

The department is in process of evolving as a highly productive and user-friendly, electronic knowledge-based workplace that offers effective C2G & G2C services - ensuring minimized overheads and prompt information availability while adhering to Government of India rules, regulations and policies through persuasion of some key interventions and implementations.

Case Background

The department was taking an initiative at the organizational level to transform its operations whereby all applications as well as manual file processing would be automated. This automation process would be spread across organizational departments and functions which also encompass the fund/non-fund based schemes of the department.
TekMindz was identified as partner to automate the system identified and specified in RFPs.

Client's Challenges

The department's management was unable to identify the exact processes that would enable them to automate their workflow. At the same time, there were major gaps in their requirements which resulted in continuous and repeated unproductive cycles. This impacted their internal processes in negative ways as frequent deviations occurred in their original roadmap to bring complete automation in their internal processes. The long turnaround time of delivery was also discouraging the internal management and users from accepting the new methods of operation. Not only this - the new programs & processes that were introduced within the Government's policies were not clearly outlined and were still continuously evolving. With this, it became a greater challenge for the department to define the roadmap for the automation of their processes.

Approach

Requirement analysis and reviews were carried out and the scope of work (SoW) outlining the complete project was prescribed categorizing the scope under two projects namely, RFP1 and RFP2:

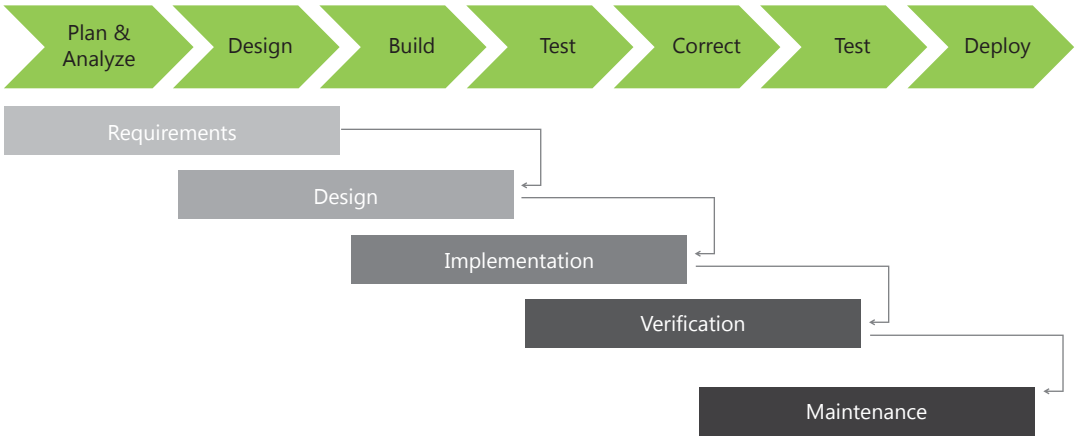
- RFP 1 focuses on the automation of IRDPP, TPDU, Grants in Aid, PACE, PRISM, A2K+ and BIRD.
- RFP 2 consists of Employee Service Book, Employ Self Services (ESS) and Human Resource Management System (HRMS).

The designated teams started with the well known ''Waterfall Model" approach.

Key areas for this approach were:

- Freezing of all the requirements in one go with the respective process owners.
- Validating and documenting the same and then initiating the development.
- Providing complete documentation for the technical team to initiate development.
- After complete development of modules, conducting demos for client.

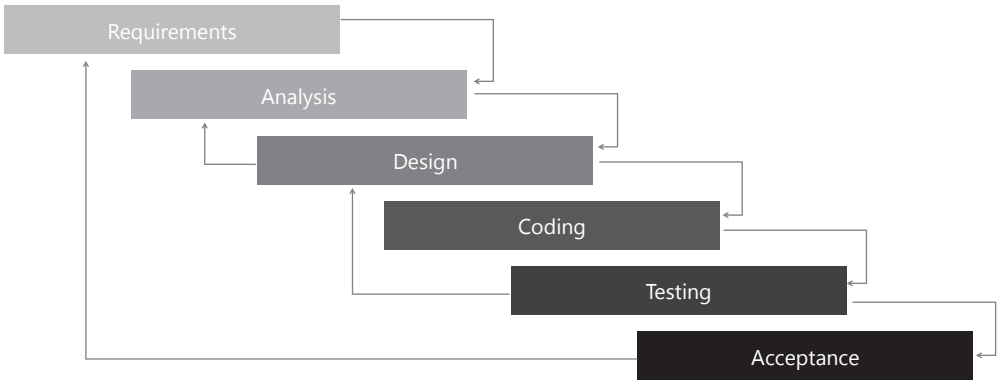
The below diagram showcases the waterfall model which ensures that we move to next phase only after the previous phase has been successfully accomplished.



Automation in government process is always a difficult and time consuming task. Some of the issues we needed to overcome were:

- Requirements got drastically altered during final UAT sessions of applications.
- Even after user acceptance testing, the requirement from the client kept changing frequently.
- The time to delivery, as a result thereof, was largely impacted negatively.
- The cost associated with the engagement of resource was also a huge cost incurred as continuous changes in documents to validate the requirements occurred.

The below diagram clearly presents the actual process that was in place for the development of application:



The Problem areas:

- Objective of the project being missed out due to undefined timelines and lack in
- clarity from client.
  Undue effort in developing complete applications which kept getting changed after demos to client.
- Confusing and ambiguous requirements from owners during final UAT sessions.

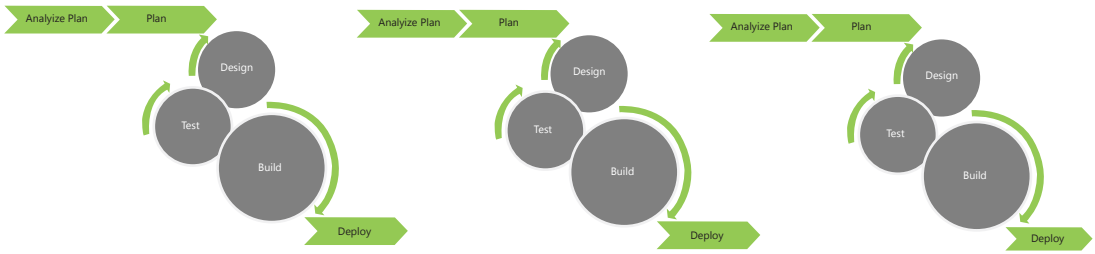
Our Solution to the problem

Going with the above challenges and deriving undesired outcomes, we decided to change the existing methodology for providing quick solution for eGovernance projects - this shift in approach redesigned the methodology used for Government clients.

A Customized Agile Methodology was identified as the 'best fit" for the scenario.

The below diagram present a high level technique that is followed for this methodology:

Agile



A shift in the methodology approach, geared towards successful end results by the designated teams and at the same time achieving greater customer satisfaction.

The SDLC process was now inclined towards:

- Multiple iterative development scheduling that seek to improve the output with each iteration.
- The requirements & design idea is allowed to evolve as new ideas come in with each release.
- The design is not set in stone and is kept open to last minute changes due to iterative implementation.
- Team structure is cross functional, closely knit and self-organizing.
- Minimal documentation with quick turnaround for deliveries.

Results

- Customer satisfaction: Customer is constantly informed and updated with application developed, and his feedback incorporated at earlier stages.
- Reduced Costs: Since the teams are working under quick delivery modes, end results are visible at early stages with clear & evident 30% reduction in efforts by end of delivery cycle
- Reduced Risk: The customer is always aware of the developments; risk of complete development going scrap is very minimal.
- Efficiency: Successful UAT's and Go live.

Statistics

WATERFALL APPROACH	
SAMPLE MODULE	
TKFP	**30**
Requirement Analysis	**Effort (in Man Days)**
Elicitation	4
Use Case modeling	4
Review	1
Audit	0.5
KT	0.5
Issue Logs	0.5
Change Requests	3
Use Case Updation	1
TOTAL	**15**
Design & Development	**Effort (in Man Days)**
Design (HLD & LLD)	7
Review	1
Development	15
Review	1
SQE Release	2
Defect Fixing	4
Deployment & Demo	1
TOTAL	**31**
Testing	**Effort (in Man Days)**
Test Plan	0.5
Test Case Writing	2
Review	0.5
Test Case Execution	4
Bug Verification & Closure	2
TOTAL	**9**
Turn Around Time (TaT)	**55**

AGILE APPROACH	
SAMPLE MODULE	
TKFP	**30**
Requirement Analysis	**Effort (in Man Days)**
Elicitation	4
Use Case modeling	0
Review	0
Audit	0
KT	1
Issue Logs	0
Change Requests	0
Use Case Updation	0
TOTAL	**5**
Design & Development	**Effort (in Man Days)**
Design (HLD & LLD)	1
Review	0.25
Development	15
Review	1
SQE Release	2
Defect Fixing	4
Deployment & Demo	2
TOTAL	**25**
Testing	**Effort (in Man Days)**
Test Plan	0.5
Test Case Writing	2
Review	0.5
Test Case Execution	4
Bug Verification & Closure	2
TOTAL	**9**
Turn Around Time (TaT)	**39**

About TekMindz

TekMindz is an IT consulting & technology services company with headquarters in India, serving clients across Asia/Pacific, Middle East, North America and Africa. Bringing together technology, people and processes across diverse sectors for organizations around the world, TekMindz enables business enterprises and governments to most effectively serve their customers and citizens.

Know more about us by visiting our website at **www.tekmindz.com**

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