

# **Chapter-2**

## **Project Management**



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### Project Management

#### **2.1 Introduction**

The success of an e-Governance project depends upon the development of the project in an integrated and holistic manner. E-Governance should not be understood merely as the procurement of hardware and other networking equipment. E-Governance is an integration of various fields of management thus making it a management game rather than merely a technology enabled project.

As a part of the project life cycle, the existing IT systems were required to be assessed along with coverage and gaps to understand the existing processes before conducting Business Process Re-engineering (BPR). It was vital that the process redesign, i.e. the critical analysis and radical redesign of workflows and processes within and between governmental Departments, was undertaken to achieve breakthrough improvements in performance.

#### **2.2 Audit findings**

The Audit noticed following shortcomings in development of IFMS:

##### **2.2.1 Deficiencies in DPR preparation**

###### **(i) Absence of preliminary study of existing system**

GoI has directed all States to fill the gaps in computerization, up-gradation, expansion, and interface requirements of existing system. For this, preliminary study of existing system was to be performed to understand the gaps in existing system and identify potential improvement areas. Audit noticed that no such study was carried out by the Department which resulted in the inclusion of outdated information in Detailed Project Report (DPR). For example, Inventory Management Module for e-stamps was included in the DPR and the Request for Proposal (RFP) of the vendor, despite the presence of a prior agreement with Stock Holding Corporation of India Limited (SHCIL) for implementation of e-stamping system.

###### **(ii) DPR not reviewed before submission to GoI**

State Project e-Mission Team (SPeMT) headed by Secretary-in-charge of the Department was to be constituted as per scheme guidelines. SPeMT had the responsibility to prepare DPR, oversee project execution, manage implementation and deal with technology, process & change management related issues. Audit noticed that SPeMT was formed in Uttarakhand in December 2013, i.e. a year after submission of DPR to GoI (January 2013), thus it did not fulfill its role in DPR preparation and reviewing.

##### **2.2.2 Inadequate Business Process Re-engineering**

BPR is the radical redesign of business processes to achieve dramatic improvements in critical aspects like quality, output, cost, service, and speed. GoI directed (July 2010)

States that while preparing DPR, it should include BPR of existing process and introduce new processes, where necessary. The requirement of process re-engineering and a brief methodology to conduct the same was to be included in DPR. The main objective of IFMS was to build an integrated finance information system to provide efficient transfer, storage and retrieval of information through workflow automation. For this, potential improvement areas were to be identified through BPR.

As the Department did not provide any document, Audit could not derive assurance whether BPR was undertaken by the Department or not.

During audit, deficiencies were observed in the IFMS which indicates lack of proper BPR prior to development of system. The deficiencies include lack of Integration with Budget Section for automation of budget process (Para 3.2.5.1.i.a), lack of Full automation of submission of supplementary budget estimates (Para 3.2.5.1.i.c), lack of auto-generation of sanction orders in IFMS (Para 3.2.2), lack of Defacement of vouchers/sub-vouchers in IFMS (Para 3.2.6.8), and lack of Automation of accounts acceptance and further correction (if required through transfer entries) with AG (A&E) (Para 3.2.9.2.v).

DTPE accepted (Dec 2022) the facts and stated that the current mechanism was adopted in consultation with budget section of Department of Finance. It also assured that further discussions shall be held with the budget section and if required, such functionality shall be added in IFMS. It was also informed that sanctioned orders were being generated manually but the Department was planning to integrate IFMS with e-Office so that digital sanction orders were automatically made available in IFMS. DPTE also assured that bill defacement would be implemented in future.

The Secretary-Finance, during exit conference (June 2023) agreed to the audit observations and stated that communication with budget section was underway for integration and functionality for submission of supplementary estimates through IFMS has been implemented and functional.

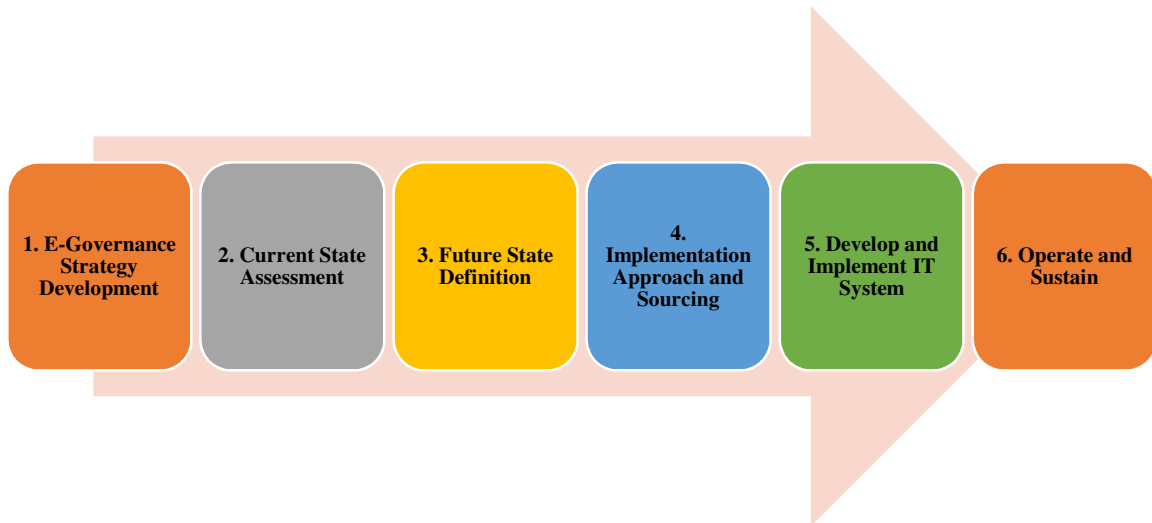
Reply confirmed that complete workflow automation of IFMS could not be achieved due to non-review of BPR. Thus, the Department failed to accomplish one of the major objective of the project. However, at the instance of Audit, the Department implemented the functionality for submission of supplementary estimates through IFMS.

### **2.2.3 Software Development lifecycle**

The Software Development Life Cycle (SDLC) is a framework defining tasks performed at each step in the software development process. It consists of a detailed plan describing how to develop, maintain and replace specific software. It divides the project into distinct stages which follow sequentially and contain key decision points and signoffs.

SDLC permits an ordered evaluation of the problem to be solved, an ordered design and development process, and an ordered implementation of the solution. An example of SDLC is provided in **Chart-2:**

Chart-2: Software Development Life Cycle



Audit scrutiny revealed that there was no document available with the Department to ensure that any structured approach for development of IFMS was adopted. Department continued project development on unstructured approach, thus, resulted in non-delivery of key technical design documents (High-Level Design and Low-Level Design documents) which was essential to mitigate vendor dependency, non-execution of System Testing and User Acceptance testing to ensure quality of the developed software during the project development stages.

Thus, non-adherence to SDLC methodology towards software design and development escalated the risk of vendor dependency and compromised the software quality.

Government, while accepting the audit observation, stated (Aug 2023) that constant efforts were being made by the Department to get the essential documents prepared without any additional financial burden.

Reply was not acceptable as the fact remains that non-adherence to SDLC resulted in non-identification of risks during each stage of project development like project timelines were not met, project documentation was not done by the vendor, deliverables were not achieved, system not tested before Go-Live, cost escalation, quality not assured, etc.

#### **2.2.4 Payment of ₹32.08 lakhs to Vendors without ensuring deliverables**

Agreements between the Department and both the vendors (M/s. Techno Brain India Private Limited (TBIL) & M/s. Indus Web Solutions Private Limited (IWS)) provide for the project milestones with its deliverables and the amount payable against completion of each milestone. Audit however, noticed that the Department paid contracted amount of ₹ 32.08 lakh <sup>1</sup> despite lack of delivery of certain deliverables as detailed in **Table-2.1** below.

<sup>1</sup> ₹ 22,24,728 to TBIL and ₹ 9,84,000 to IWS

**Table-2.1: List of deliverables not delivered by the vendor.**

Sl. No.	Deliverable	Significance of deliverable	Audit observation	Government's reply
1.	Business Continuity Plan (BCP)/Back-up Plan	BCP is a document that outlines every aspect of disaster preparedness, response, recovery, and training. It dictates all the steps that should be taken during a critical event and outlines the preventative measures for mitigating the risks of disaster. The backup plan defines a comprehensive backup strategy to identify critical data and systems to be protected, backup administrator responsibilities, data retention, restoration procedures and more. It is essential because it is last line of defense against data loss stemming from data corruption, hardware failure, or security breach.	No BCP formulated by the Directorate till August 2023. In its absence, the staff/ users were unaware of the procedure to be followed in the event of disruptions/ disasters. They were also not trained in preventing, mitigating, and responding to emergency situations.	Government emphasized the criticality of BCP during exit conference (June 2023) and directed DTPE to frame the BCP as soon as possible.
2.	High Level Design (HLD) and Low Level Design (LLD) documents	HLD refers to overall system design. It is significant as it covers the system architecture and database. It describes the relation between various modules and functions of the system in brief along with data flow, flow charts and data structures. It converts the business requirements into High Level Solution. LLD refers to component-level design process, thus it is like detailing HLD. It is significant as it converts the High-Level Solution into Detailed solution. It defines the actual logic for each component of the system and goes deep into each modules specification.	Design documents were not delivered by the vendor and its contract expired on 31 March 2023. As these documents were necessary to understand the system, there was a dependency on vendor as well as contractual staff. In absence of design documents, it will be very difficult for new vendor to gain complete understanding of the system. On expiry of present contract, Department will face a vendor lock-in like situation.	Government accepted the facts and during exit conference (June 2023), directed DTPE to get the essential documents delivered from the vendor as these documents were critical to avoid vendor lock-in situation.
3.	Unit testing, System testing, test cases and test reports.	Quality Assurance testing (Unit Testing, System Testing, Integration testing, etc.) is an integral aspect of the software development lifecycle to ensure that software meet the required quality, security, availability,	No document was made available to audit in this regard. Hence, Audit could not derive any assurance whether software met the required quality,	Government accepted the facts (August 2023) and stated that Unit testing, System testing, Test

Sl. No.	Deliverable	Significance of deliverable	Audit observation	Government's reply
		reliability, and scalability standards.	security, availability, reliability, and scalability standards.	cases and Test reports were not provided by the Vendor.
4.	User Acceptance Testing (UAT)	UAT is crucial for the successful launch of any online platform. UAT ensures that system is performing as expected and whether the user accepts the finished product.	The system was made Go-Live hurriedly on 01 April 2019, within just 10 days of new contract. The Department did not conduct any UATs before implementing the software. Various shortcomings noticed in different modules could be addressed if user acceptance tests were done.	Government replied (August 2023) that the work order was issued on 25 October, 2018 and based on that Vendor started working on the development of the software. Contract was signed at a later stage. UAT document was not provided by the vendor before Go-live. After Go-live FDC prepared UAT Document to ensure software meets user needs. These documents were made available to the Audit.
5.	Data migration and verification support; Restructuring of tables and streamlining of database	Data Migration is necessary to ensure data is transferred successfully and securely and prevent corruption or data loss. It is required in scenarios where a business needs to upgrade its system or server, hardware, databases that is more aligned with business requirement.  The streamlining of databases paves the way for consolidation of databases through integration and elimination of unnecessary tables and overlapping data items. Thus, it allows to take advantage of better data accuracy, better productivity, getting data faster, cost	Data Migration, restructuring of tables and streamlining of database was not carried out as data of legacy system was kept in a separate schema.	Government stated (August 2023) that data migration, restructuring of tables were done by combining all the previous data of the two databases i.e., Core Treasury System and DDO database in a single merged database. For smooth functioning of the system, only current financial

Sl. No.	Deliverable	Significance of deliverable	Audit observation	Government's reply
		efficiency and overall standardized business processes		year data was migrated to UKIFMSW schema and the data previous to the current financial year was kept in BACKDBA schema of the same database. The migrated new joint database was named as IFMRAC.

Government, in its reply (August 2023) confirmed that data of legacy system was kept in separate schema i.e. BACKDBA and only current year data was migrated to new database i.e. UKIFMSW. This clearly shows that the tables were not restructured and databases were not streamlined.

Regarding UAT, no supporting documents were provided to Audit to confirm that work order was issued on 25 October 2018 and UATs were carried out by the vendor before Go-live. Also, UAT reports provided by the Department showed that UATs were conducted after Go- live of the IFMS.

### **2.2.5 Go-live of IFMS after 10 days of signing contract with new vendor**

M/s. IWS was selected on 25 October 2018 to complete the residual work after termination of contract with M/s. TBIL. An agreement was signed between Department and M/s. IWS on 22 March 2019, according to which 24 weeks were assigned to the vendor for completion of the residual work before IFMS was made to Go-Live.

Audit noticed that despite agreement, IFMS was made Go-Live on 01 April 2019, just 10 days from signing the contract and without conducting the mandatory processes of data migration, UAT and a Performance and Quality Audit from Standardization Testing and Quality Certification (STQC).

The Government replied (August 2023) that work order was issued on 25 October 2018 and based on that vendor started working on the development of the software. The contract was signed at a later stage. So, the vendor had sufficient time for working on the development of the software.

Reply was not acceptable as no supporting documents were provided to Audit to confirm that work order was issued on 25 October 2018 and the vendor started working on software development before signing of contract. In absence of work order, audit could not ascertain when vendor initiated the software development work.



### 2.2.6 Relevant Treasury and Financial codes not updated

Guidelines for ‘Computerization of Treasuries’ issued by GoI in July 2010 stipulated that since a large part of treasury computerization would become possible only after relevant codes are amended by the States, each state was to prepare and submit an action plan which included the changes required in procedures, practices, codes, manuals and laws (like provision for use of digital signatures, file formats, transfer of funds electronically) with explicit time lines. The cost of setting up of a task force to examine the codes was considered a valid cost under the scheme. Similarly, before the IFMS was made go-live in Uttarakhand, a detailed order was issued on 29 March 2019 by the State Finance Secretary reiterating that current rules and Financial Handbooks would be amended after operationalization of IFMS in the state.

During the audit, it was observed that:

- The relevant codes like Treasury Rules, Financial Handbooks were not updated/amended to reflect the current situation where majority of critical financial functions and transactions were being carried online through IFMS. This resulted in ever increasing gap between the business rules mentioned in the codes which became outdated and the rules on basis of which actual financial operations were being transacted in IFMS.
- Some functions like digital signature, Bill processing, etc. of IFMS had their basis in GOs issued by GoU. However, for some critical functionalities, audit could not locate any written documentation or authority. For example: Rules governing the system of handling failed payments in IFMS.

**Case Study:** In case of incorrect bank details of beneficiary, a Return Note was received in IFMS. The details of these failed payments were displayed to DDO and Treasury. DDOs, through failed upload option in IFMS, rectify the failed payment both in Return Note and Master tables by correcting bank details of beneficiary. DDO sends a certificate of correctness to treasury and the bill was processed again. The above process was neither documented nor available in existing financial rules.

Government, during exit conference (June 2023) accepted the audit observation and stated that report had been prepared and submitted by *Niyam Samiti* to GoU. The Secretary-Finance directed concerned officials that a weekly meeting with the members of *Niyam Samiti* shall be held to finalize the relevant rules.

### 2.2.7 Change Management

National Information Security Policy and Guidelines provides that the organization must implement and maintain a change management process to track and monitor activity related with changes to existing software applications. Activity such as application maintenance, installation of critical changes, review of changes and post testing, responsibility of changes, documenting change request amongst others must be documented with relevant details. Each significant change in application must be approved. SpeMT was responsible for change management.

Scrutiny of records revealed that the Department had not formulated or adopted any change management policy. Change management in IFMS was being carried out without approval of SpeMT / FDC-in-charge which shows the lack of internal controls and monitoring.

The Government in its reply (August 2023) stated that formal change management policy was not in place and changes were made in the software after approval from the competent authority and made live after the successful testing by the team. Framing of change management policy was in progress.

The reply was not acceptable as documents provided by the Department revealed that changes in the system were being made without necessary approval from the competent authority. In absence of change management policy, the due process of change management was not defined.

### **2.3 Conclusion**

The Department had not conducted preliminary study and BPR which resulted in functional deficiencies in IFMS. Further, SDLC framework was not followed during software development which resulted in non-delivery of essential technical documents of the project. Department made a payment of ₹ 32.08 lakhs to vendor without ensuring certain major deliverables like BCP, Testing reports etc. IFMS was made Go-Live without ensuring sufficient testing. Post Go-Live, relevant treasury and financial codes were not updated to align with the working of IFMS. The department did not frame any change management policy to track and monitor modifications in the source code of the IFMS.

### **2.4 Recommendations**

- *The Department should ensure delivery of technical documents (HLD, LLD, test cases etc.) from the vendor to avoid any vendor lock-in situation.*
- *The Department should expedite the process of updating of financial rules/codes in line with the working of IFMS.*
- *The Department should issue Standard Operating Procedure (SOP) for key process implemented in IFMS such as correction of accounts, handling of failed payments, etc.*
- *The Department should formulate and implement a Change Management Policy for any changes to be made in IFMS source code.*