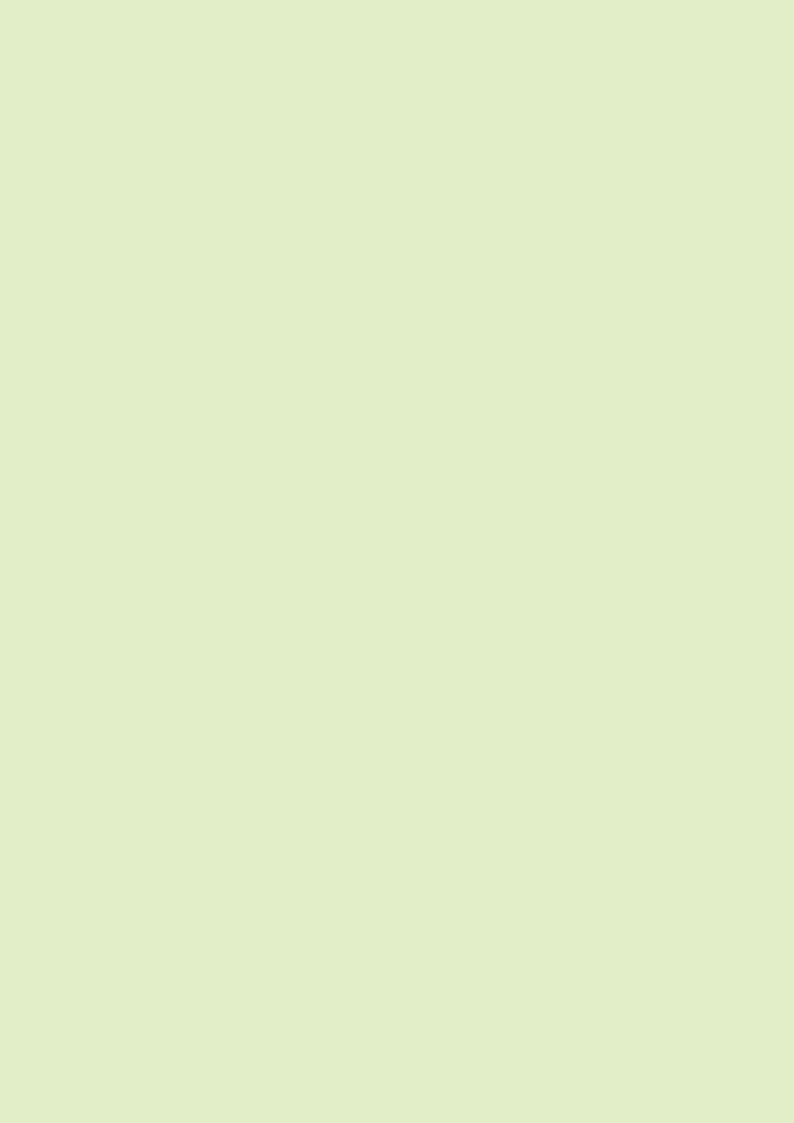# CHAPTER II
PROJECT PLANNING, DEVELOPMENT AND IMPLEMENTATION

CHAPTER-II
PROJECT PLANNING, DEVELOPMENT AND IMPLEMENTATION

Integrated Financial Management System (IFMS-K) in Kerala, initiated by Government of Kerala and led by the Department of Finance, aimed to integrate all financial transactions relating to Government of Kerala. The review meetings chaired by the Additional Chief Secretary (ACS) of Department of Finance, entrusted with ensuring the implementation of the project, became the forum for raising Change Requests based on stakeholder inputs. These review meetings failed to manage the project effectively, as the status of change requests and actions taken on the decisions were not documented, leading to continued dependence throughout the implementation on the System Integrator (SI)[5]. Government did not enter into a Service Level Agreement (SLA) with SI though such an agreement was executed for a similar project. Absence of comprehensive documentation led the project which commenced eight years ago to extend indefinitely.

2.1 Introduction

The IFMS-K project aims to integrate all financial transactions of GoK in real-time, and to ensure financial discipline. Evolving from the Core Financial Management System (CFMS) introduced in 2011-12, IFMS-K was developed by the National Informatics Centre (NIC). IFMS Review Committee chaired by ACS, Department of Finance was formed to oversee all the aspects of project's implementation with the meetings required to be scheduled every week.

2.2 Shortfall in the conduct of review meetings

The review meetings were key to implementation of the project, ensuring adherence to timelines, addressing challenges, and making necessary adjustments. The deficiencies noticed in project management are discussed in the subsequent paragraphs.

Audit noticed that during the three financial years from 2020-21 to 2022-23, only 30 review meetings were conducted against the requirement of 156[6] meetings (19.23 *per cent*). Audit identified gaps of up to 10 months between consecutive meetings in two instances. It was also noticed that the decisions made in the review meetings were not periodically reviewed, and Action Taken Reports (ATR) on the decisions were not available in the department.

Audit observed that the above shortfalls made it difficult to measure actual completion of tasks against the set deliverables. The implementation timeline was set by the Review Committee in April 2015 as 14 months, whereas the project is still ongoing.

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[5] A system integrator helps combine different technologies into one working system.
[6] 3 (years) x 52 (number of weeks in a year).

Government stated (November 2024) that regular review committee meetings were conducted under the chairmanship of the Additional Chief Secretary, Department of Finance. In each such meeting, targets were fixed for each and every entity and the action taken was reviewed or discussed in the very next meeting.

The reply is not tenable, as review meetings were not conducted in the frequency stipulated and documentation is not available regarding ATRs on decisions taken during the meetings. Further, the inordinate delay of eight years from the initial timeline set, clearly establishes the failure in monitoring the implementation effectively.

2.3 Absence of Service Level Agreement and comprehensive documentation in implementation

NIC, being a Total Solution Provider (TSP) and having developed treasury systems from 2004, was entrusted with the development of IFMS-K without competitive tendering. Guidelines issued (September 2009) by the Information Technology Department on e-Governance initiatives implemented by Government departments stipulate that, in case project is executed by TSP, a detailed Service Level Agreement (SLA) should be signed with the agency. The SLA must clearly specify in detail the scope of the work, deliverables with time schedule, monitoring mechanism for supervising the service levels, penalties for failure to deliver as per the prescribed SLAs and other requirements as specified in the guidelines.

Audit noticed that:

1) Government did not enter into SLA with NIC, in the absence of which key performance benchmarks *viz.*, secure timely deliverables, timelines of project implementation, and monitoring mechanisms for supervising service levels were not established. This deficiency persisted throughout the implementation, as no such targets were set during review meetings also.

2) The task of preparation of Functional Requirement Specification (FRS) was entrusted to SeMT[7] and NIC was advised to prepare System Requirement Specification (SRS) based on the FRS. Both FRS and SRS were to be completed by July 2015. Though FRS was prepared by SeMT and was approved in August 2015, NIC did not prepare any SRS. In addition, Functional Audits could not be conducted by third party Auditor (STQC[8]) due to lack of SRS.

The Administrative Reforms Commission, Government of Kerala also highlighted in its 11th report (January 2021) that due to absence of SLA, penalties covering deliverables, timeframes and performance of applications delivered by TSP were not defined and the departments ended up in a disadvantageous situation after spending considerable amount of time and

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[7] State e-Governance Mission Team.
[8] Standardisation, Testing and Quality Certification Directorate.

money. Failure to follow FRS resulted in modules envisaged therein not being developed as pointed in Paragraph 2.10 of this Report.

Government stated (March 2023) that usually NIC does not execute SLA with the user departments and To-Be and FRS prepared by SeMT was not approved as it was not easy to develop the drastic changes in the modules necessitated due to change request from various domains. Government further stated (November 2024) that on formulation of IFMS-K, SLA was not entered into and now the initial target points have been completed and applications started functioning in core environment.

Government reply stating NIC does not execute SLA and To-Be and FRS prepared by SeMT was not approved is factually incorrect as NIC has executed (May 2014) SLA with Government of Kerala for the implementation of "e-District MMP in Kerala" and the FRS prepared by SeMT was approved in the review meeting (August 2015).

2.4   Absence of physical and financial targets

As per the adopted practice, NIC accesses the requirement on procurement of hardware and networking devices and software licences based on functional/ modification request from the stakeholders, which are further discussed in the review meetings. Thereafter, administrative sanction for incurring expenditure is accorded by the Department of Finance. The requirements raised by NIC were further referred to the Technical Committee and purchase is effected by tendering. As such, in the absence of SLA, physical as well as financial targets were not set by the Department. Similarly, such targets were not set in the review meetings also.

The year-wise details of expenditure and component wise cost incurred for IFMS-K project is as detailed below in **Table 2.1.**

Table 2.1

Year wise Expenditure

Period	Expenditure (₹ in crore)
Upto 2014-15	4.42
2015-16	1.37
2016-17	1.64
2017-18	3.65
2018-19	0.73
2019-20	4.08
2020-21	1.06
2021-22	9.30
2022-23	8.05
Total	**34.30**

Component wise cost incurred

Component name	Expenditure (₹ in crore)
Far Disaster Recovery site, Near Disaster Recovery site	2.20
Hardware	3.22
Networking	1.53
Training	0.06
Software purchase	14.98
Security auditing/ testing	0.12
Payment to NIC for developers	8.85
Database Administrator and System Administrator charges	1.47
AMC	1.02
Others	0.85
Total	**34.30**

(Source: Calculated by Audit from the records made available).

Total cost of the Project amounted to ₹34.30 crore (March 2023). Purchase of software for ₹14.98 crore (43.67 *per cent*) constituted the major share of the project.

Absence of physical and financial targets hinders monitoring and evaluation of progress against the objectives of the project.

2.5 Absence of specific Head of Account for booking expenditure

List of Major and Minor Heads of Account[9] provides that the details of each Scheme/ Project/ Programme, *etc*., as the case may be, shall be indicated at the sub-head level below the standard minor head. Likewise, at the detailed head and object head levels, details of sub-schemes or activities and object of expenditure shall be indicated respectively.

Audit observed that no specific sub-head of account was allotted for meeting expenditure relating to the implementation of IFMS-K and the expenditure is being booked under Major heads of account 2054-Treasury and Accounts Administration, 3451-Secretariat-Economic services *etc*. In the absence of a separate sub-head of account, Audit could not ascertain the amount expended against the amount allotted for the project.

Government stated (July 2023) that new sub-heads have been opened[10] for distinct classification of IFMS-K. The sub-heads were opened under the heads 3451-00-090-88 and 2054-00-095-93.

However, Audit observed that even though expenditure was booked under the head 2054-00-095-93 from the year 2023-24 onwards, no expenditure is seen booked under the head 3451-00-090-88 till date (August 2024).

2.6 Failure to undertake Business Process Re-engineering Exercise

An organisation changing from a manual to a computerised environment would conduct a Business Process Re-engineering (BPR) exercise. BPR involves re-engineering of the existing processes and introduction of new processes where necessary, to ensure synergy of these processes with electronic systems.

The guidelines of Mission Mode Project issued by GoI (July 2010) on Treasury Computerisation envisaged that each State/ Union Territory is required to prepare an action plan covering *inter alia* the changes required in procedures, practices, codes, manuals and laws such as provision for use of digital signatures, file formats, transfer of funds electronically *etc*., with explicit timelines to ensure achievement of these objectives. Accordingly, when amendment to Codal provisions is required, Government would first issue the Government Order and mention therein that updation of Codal provisions will be undertaken.

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9   Para 4.1 read with Note below para 3.1 of General Directions.
10   GO(Rt) No.1318/2023/Fin dated 22 February 2023.

Audit observed that neither Kerala Treasury Code, Kerala Financial Code and Kerala Budget Manual were amended to align with the re-engineering of the business process, nor any action plan was formed to amend codal provisions prior to making systemic changes.

Government stated (November 2024) that treasury department will take necessary action to initiate the process to conduct BPR and complete it in a timely manner.

> **Recommendation No. 1**
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> Government should initiate the process to conduct Business Process Re-engineering and complete it in a timely manner to ensure synergy between existing processes and new processes.

2.7   Deviations from Agile principles in Project development

Government claimed that IFMS-K adopted the Agile[11] Software Development Methodology, which allowed tasks identified in weekly review meetings to be discussed, finalised, and assigned for development in a continuous manner throughout the project lifecycle. However, it was seen that instead of following Agile methodology, the development of modules was done on an incremental basis on decisions made in review meetings. This shift in methodology lacked formal task identification, prioritisation, and documentation. Thus, the project, which was initially proposed to be completed within two years, deviated significantly from the timeline resulting in incomplete modules and delays.

Key deviations from Agile principles as outlined in the Agile IndEA Framework issued by the Ministry of Electronics and Information Technology (2019), as identified by Audit, is given in **Table 2.2**.

Table 2.2
Critical Elements and findings

Sl. No.	Deviations from Critical Elements in Agile methodology	Remarks
1.	Absence of Timelines	The project did not follow structured timelines, such as Agile "Waves and Surges," leading to unstructured development cycles.
2.	Undefined Roles	Critical roles like the Arch-Dev-Ops Process Engineer, essential for guiding Agile practices and coordination, were not defined.
3.	Lack of Iterative Records	No documentation of surges or iterations, their tasks, and completion timelines was maintained, undermining Agile's iterative approach.
4.	Lack of Backlog	The absence of an updated product backlog hampered task prioritisation and adaptability.

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[11]   A project management approach that focuses on iterative development, where tasks are divided into small stages, allowing for continuous collaboration, feedback, and flexibility to adapt to changes throughout the project lifecycle.

Sl. No.	Deviations from Critical Elements in Agile methodology	Remarks
5.	Absence of Feedback Mechanism	Regular workshops and stakeholder consultations vital for continuous feedback, were not conducted.
6.	Lack of Progress Tracking mechanism	There was no mechanism to track progress through Key Performance Indicators aligned with project goals.

Government stated (November 2024) that at this stage of rollout of applications, it is not practically feasible to review the model being continued.

The reply is not tenable as the absence of essential elements outlined in Agile IndEA framework has led to inefficiencies and risks in implementation as brought out in Paragraphs 2.10 and 2.11.

2.8 Absence of documentation on legacy data migration

As per the Technical Guide on Data Migration[12], during legacy data migration, the tools were to be identified and tested, log was to be verified for errors and mitigation and pre-migration and post-migration reports are to be generated confirming completeness of migration. The reports were to be signed by an authorised official along with the personnel from migration team.

Audit noticed that the data from individual standalone servers (Treasury Information System) in treasuries were migrated to the core treasury platform during the initial phase of IFMS-K. However, for migrating the data, the treasury neither adopted a data migration technology/ migration plan nor constituted a dedicated migration team with well-defined roles and responsibilities.

Audit observed that details in respect of data migration tools employed, log analysis, signed pre-migration and post-migration reports confirming the completeness of migration *etc*., were not available with the Department. Exception reports (errors/ integrity error reports) generated during data migration and rectification and confirmation obtained from treasuries were not available. Problems faced in IFMS-K due to data migration has been included in Paragraph 7.2 of this Report.

Government stated (November 2024) that earnest efforts were taken by the treasury official to migrate error free data to the core platform. The reply is not tenable as the discrepancies related to data migration pointed out as stated above have not yet been resolved.

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[12]   Issued by Committee on IT, the Institute of Chartered Accountants of India.

2.9   Absence of mechanism for Acceptance Testing

Government of Kerala issued guidelines (September 2009)[13] for implementation of e-governance projects in the state which *inter-alia* provides for a proper mechanism for Acceptance Testing before deployment of applications in the production server as stated below:-

(a)   The Acceptance Test Plan (ATP) shall be ready by the time the Application Software is developed. The test plan shall include sample data for testing and expected results and the plan should be approved by all relevant parties.

(b)   The test environment should be secure and shall be segregated from the Development and the Production environment. The Acceptance testing shall be conducted by a team of functional experts nominated by the IT Division of the Department/ Organisation.

c)   The software developer shall not do the Final Acceptance Testing. The Final Acceptance Testing should be conducted by a third party who is a professional testing agency and should be selected through transparent tendering process.

Audit scrutinised the mechanism of testing of applications available and observed that criteria specified in the guidelines were not followed and no dedicated software testers were involved by NIC.

Absence of such dedicated testers compromised the thoroughness and effectiveness of the testing process, which is evidenced by the existence of negative balance in Treasury Savings Bank accounts which has been commented in Paragraph 7.7 of this Report.

Government stated (November 2024) that now for every new change to be made/ incorporated in the IFMS-K, acceptance testing against the Functional Requirement is being done and the occurrence of negative balance in the accounts is restricted now.

The reply is not tenable as non-adherence to the guidelines, which mandated the engagement of a dedicated testing team and professional testing agency, adversely affected the effective validation of the system's readiness and reliability.

2.10   Non-development of modules envisaged in Functional Requirement Specification

For the implementation of IFMS-K, the FRS prepared by SeMT, envisaged development of seven modules and NIC developed ten modules. The modules that were envisaged and the modules that were developed are as given in **Table 2.3**.

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[13]   GO(P) No.24/2009/ITD.

Table 2.3
Modules envisaged Vs Modules developed

Sl. No.	Modules Envisaged	Sl. No.	Modules Developed
1	Budget Management	1	Budget Management
2	Receipt Management	2	Receipt Management
		3	Stamp Management
3	Expenditure Management	4	Expenditure Management
		5	Pension Management
4	Accounts and Audit Management	6	Accounts Management
5	Cash Management	7	Cash Management
6	Fund and Liability Management	8	Fund Management
7	Strong Room Operation Management	9	Core TSB
		10	User Management

(Source: FRS document).

Audit noticed that the Liability Management sub module which was part of Fund Management module and the module for Strong Room Operation Management were not developed.

Government stated (November 2024) that the sub module Liability Management And Strong Room Operation Management have been kept in abeyance as far as treasury department is concerned. The reply is not tenable as absence of these modules would lead to inefficiencies in tracking financial obligations and increased risk in treasury operations.

2.11 Non–development of functionality based on requirements

Audit verified five modules in IFMS-K namely Budget module, Receipt module, Expenditure module, Accounts module and CoreTSB module. Except CoreTSB, the other four modules are part of FRS. On verification of the requirements for the four modules in FRS against the functionalities that are implemented in IFMS-K, it was noticed that many functionalities envisaged were not developed. The details are given in **Table 2.4**.

Table 2.4

Number of functionalities not developed

Sl. No.	Name of Module/ sub-modules	No. of envisaged requirements	No. of requirements not developed
1	Budget Preparation, Resource estimation & Budget Approval	71	37
2	Budget Allocation	10	7
3	Budget Re-appropriation/ Re-Allocation	26	12

Sl. No.	Name of Module/ sub-modules	No. of envisaged requirements	No. of requirements not developed
4	Receipt Online Collection	21	1
5	Payment at Department's counter/ Field Officer/ FRIENDS	11	2
6	Refund	10	6
7	Bill preparation and submission	27	9
8	Bill processing and payment	24	8
9	Accounts Preparation/ Compilation	51	18
	Total	**251**	**100**

(Source: FRS document).

Out of the 251 requirements specified in the approved FRS, 100 requirements were not developed in IFMS-K. Additionally, these requirements were not addressed during the IFMS review meetings also. The shortfalls in IFMS-K due to non-development of these functionalities are discussed in the subsequent chapters.

Government stated (November 2024) that some functionalities are under development stage and some items can be introduced in the long run with detailed discussion with the authorities concerned.

Recommendation No. 2

Government should fix timelines for implementation of various functionalities of the different functionalities in IFMS-K.

2.12 Inadequacy of change management process

In IT organisations, the change management process is normally used to manage and control changes to assets, such as software, hardware, and related documentation. Change controls are needed to ensure that all changes to system configurations are authorised, tested, documented and controlled so that the systems continue to support business operations in the manner planned, and that there is an adequate documentation of changes.

Audit noticed that based on the decisions in the weekly review meetings, frequent changes were made in the software versions. Audit observed that details such as the dates and reasons for carrying out version changes were not available on record. Further, there was no record of testing and acceptance of the amendments carried out in the software.

Government stated (November 2024) that a change request procedure and standard operation procedure are under preparation for tracking the modifications in the software development.

The reply is not tenable as change management process is essential to track future changes and for testing and is an integral part in implementation of the project.

2.13 Absence of Requirement Traceability Matrix and Performance Metrics

Requirement Traceability Matrix (RTM) is a document that maps and traces user requirement with test cases. It captures all requirements proposed by the client and requirement traceability in a single document. Further, it is necessary that web applications respond quickly to the user request for efficient operation. This requires that the application, database and server components are designed and configured to deliver fastest response time which would be specified in the form of Performance metrics involving multiple factors[14] in Performance SLA. Performance metrics based on uptime, service availability, response time, MTTR[15] *etc.*, were to be specified to regulate the performance under all possible ranges.

Audit observed that neither RTM nor performance metrics assuring minimum specified performance was available for IFMS-K project. Absence of an RTM led to department not being able to readily ascertain the tasks pending development from time to time in terms of requirements. In the absence of RTM, Audit could not confirm whether all the requirements specified in the FRS or in change requests were finally brought into the application.

Audit further observed that criteria for monitoring application performance during normal course and peak load time should have been made as there are no yardsticks to assess performance of the system.

Government stated (November 2024) that the treasury department will carry out the recommendations to formulate a RTM to ensure timely completion of requests raised by the department to NIC. Regarding absence of performance metrics, Government stated (March 2023) that the Treasury central server was upgraded on the recommendation of the technical committee after verification of analytical report in May 2022 as there were some performance issues reported which mainly affected transactions and data processing. Government further stated (November 2024) that the matter would be taken up with NIC.

> **Recommendation No. 3**
>
> Government should formulate a Requirement Traceability Matrix and a Performance SLA to ensure timely completion of requests raised and assure minimum performance standards.

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[14] Transaction volume, CPU utilisation, response time ranges and number of users.
[15] Mean Time to Repair.