CHAPTER 30

# Integrated Information System for Foodgrains Management—IISFM*

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## ABSTRACT

Integrated Information System for Food Grains Management (IISFM) is an MIS solution developed and implemented by National Informatics Centre (NIC) for Food Corporation of India (FCI). This system aims to improve the Information and Communications Technology and better online stock inventory management system. This system can be used to bring in more transparency and curb mismanagement of food stocks.

This system is basically designed from the Food Storage depot point of view, since data originates from depots. This is a web-based application. The application has been designed to operate both in networked environment through a WAN or stand-alone-mode, depending on the connectivity. The application provides the facility to create role-based users with specific permissions.

The data capture takes place at the depots, which forms the base of the project. The data is captured at the individual Stack levels. All movements into and out of the depot by trucks, rail or any other mode of transport are captured as receipts, issues or dispatches. The data is captured truck-wise and wagon-wise. The issues related to different schemes are also recorded by the module. Apart from the stock data, the module also captures quality related data of the commodities, both received and stored.

The captured data flows from the depots to the Head Quarter while being collated at various levels of hierarchy with Food Corporation of India, and thus the stock data related to every depot is made available at a central location. The data transmitted to the Central Server is processed for generating reports relating to the stocks at District, Regional, Zonal and National Level. The stock position at any given depot even from the remotest part of the country could be known through the Internet. Apart from these reports on stock position of the depots, a portal designed for the exclusive use of Food Corporation of India is used to disseminate information related to Movement Plan, off-take of food grains against different schemes, support to the users of the District Module and depot module applications and the like.

NIC with the mandate of a project consultant has provided an end-to-end solution. It has planned the project management strategy, has designed, developed, implemented and maintaining the requisite applications, has provided extensive training to the officials of FCI for effective induction of Information Technology in FCI thus leading to capacity building of the human resources of FCI. NIC has coordinated with NICSI for the supply and

* CSI Nihilent e-Governance Awards 2006–07, G2G/G2E – Joint Winner.

installation of the hardware and with Bharat Sanchar Nigam Limited (BSNL) for implementation of VPN across the district, regional and zonal offices.

## 1. Introduction

*Project conceptualization*

Food Corporation of India operates through a country-wide network with its corporate office in New Delhi, five zonal offices, 23 regional offices in almost all the state capitals, 166 district offices, and over 1500 depots. The manual process previously followed in conjunction with a traditional file processing solution had many lacunae such as incomplete or inaccurate information on current stock availability. This originated an idea to have a full-fledged computerized MIS that gives the right information at right time about food grains stock position. The inaccuracy of the information on the stock availability at any given point of time was highlighted by Comptroller and Auditor General of India, which asked Food Corporation of India to address the issue and provide an effective solution.

The Project Proposal evoked a keen interest in the Prime Minister's Office, which considered it as one of national importance, and led to the IISFM Project as a Plan Scheme under the 10th Five Year Plan with a budgetary provision of 97.60 crores.

## 2. Project Vision, Stakeholders, Objectives and Services

*Vision*

Upgrade the MIS of the Food Corporation of India based on a computer network-based Stock Accounting Procedure, and to establish a uniform and integrated system for food grains management across the country.

*Stakeholders*

Internal

- Food Corporation of India (FCI)
- Ministry of Consumer Affairs and Food, Public Distribution
- National Informatics Centre (NIC)
- National Informatics Centre Services Inc. (NICSI)

External

- Civil Supplies Departments of State Governments
- Central Warehousing Corporation
- State Warehousing Corporation(s)
- Bharat Sanchar Nigam Limited (BSNL)
- Procurement Agencies

Objectives

- Anytime and Any-where availability and share-ability of accurate food grains related data to aid the Decision Makers and Planners of Food Security.
- Creation of IT infrastructure including computer hardware and networking in the Food Corporation of India, which involves procurement and installation of suitable hardware at all the identified depots.
- Identification of functional areas in the FCI/Departments and automating the process of food grains management.
- Develop a computer-based solution to manage the stocks in the food storage depots.
- Transparency in the horizontal and vertical movement of the data using a secure network.
- Capacity building of the human resources in Food Corporation of India, as well as providing on-site technical support.

*Services*

NIC is the overall project consultant and is providing end-to-end solution in collaboration with a dedicated team of FCI entrusted with the task of providing the domain knowledge, and is striving to fulfill the objectives of the project.

## 3. Public Private Partnership (PPP)—roles and responsibilities, audit, SLA, business model; If not PPP, funding process

This project is a Plan Scheme (under 10th Five Year Plan) of Planning Commission, Govt. of India, which is to be internalized by Food Corporation of India in terms of maintenance and operations.

## 4. Necessity/Needs

The inaccuracy of the information on the stock availability at any given point of time was highlighted by Comptroller and Auditor General of India, which asked Food Corporation of India to address the issue and provide an effective solution.

Also the localization of the operational procedures at the depots had created a heterogeneous operational methods thus leading to lack of uniformity of data in the manual system.

## 5. Project Plan

*Legal framework*

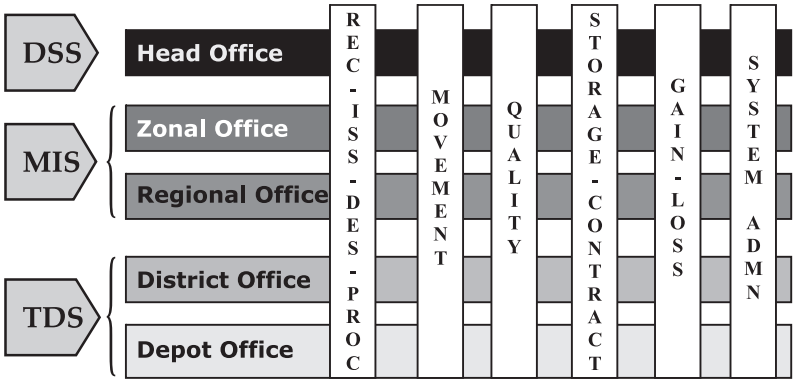
A tripartite agreement on the project exists between FCI, NIC and NICSI. The project, without modifying the procedures laid down by FCI for food stock management, has eliminated the redundancy of data by establishing links between different operational levels of data sets.

*Technology architecture*

FCI operations and work procedures were different from region to region with in FCI. Development of suitable software for FCI was a real challenge. It involved a complete systems study across the country, visiting various FCI offices and depots to understand the functioning of the organization. After studying the existing system a solution was proposed that both horizontally and vertically integrates all activities of FCI and mainly concentrates on the following stock management areas of FCI: receipt/issues, stock, storage/ contract, quality control, sales and movement of food grains.

The system is basically designed from the depot point of view as depot is the main source of data. The depots are equipped with computers and connectivity, so that gross-root level data can be captured. The system has different modules as follows:

**Fig. 1**




## 6. Milestones

- Approximately 890 field locations have been provided with the necessary hardware as part of the ICT infrastructure improvement.
- The Food Corporation of India personnel have been imparted training on Computers, and nearly 400 Technical Supervisors and 1700 Data Entry Operators have been imparted training of different aspects of the Project.

- All the Zonal, Regional and District Offices of Food Corporation of India have been connected through a VPN.
- The depot module, which captures every transaction and stack-wise details of various food grains kept in the food storage depots, is in a phased Roll-Out stage.
- Data is being transmitted from depots upwards, thus one can get the latest stock position over the web.

## 7. Project Management Structure

The Project management structure consists of the following components:

- Project Monitoring Committee (PMC)
- CORE group
- NIC-FCI Joint-Operation Team
- NIC Network and Hardware Team
- NIC Application Development, Testing and Product Implementation Team
- Project Portal

### *Project Monitoring Committee (PMC)*

The PMC consists of senior officials from the Ministry of Consumer Affairs and Food, Public Distribution, Food Corporation of India, National Informatics Centre and National Informatics Center Services Inc. This Committee meets once in 3 months under the Chairmanship of Chairman (FCI) to review and monitor the progress of the project with regard to the targets and achievements, and performs as a guiding and advisory body.

### *CORE Group*

The CORE Group consists of senior officials from Food Corporation of India, National Informatics Centre and National Informatics Center Services Inc. This CORE Group monitors the progress of the various components of the project viz., networking, hardware supplies, application development, training, etc., such that the targets set by the PMC are achieved. The CORE Group meets once in a month under the chairmanship of Executive Director of FCI.

### *NIC-FCI joint-operation team*

This small team is entrusted with the job of deciding the features of the application, testing of the application, test locations, feedbacks analysis, etc., this team meets on a day-to-day interaction basis (over email or phone) or on-demand basis (meetings).

*NIC network and hardware team*

NIC has a dedicated team which looks after the hardware procurement, supply and installation. This team interacts with the supplier of the hardware and ensures that the requisite hardware is supplied to the selected depots and installation done. Also, this team works with BSNL to ensure the smooth functioning of the VPN built across the Zonal, Regional and District offices of FCI.

*NIC application development, testing, product implementation and support team*

This team develops the application; the application, after local testing is tested at the depots along with FCI team. The application is later implemented at the depots by FCI with the support of NIC.

*Project portal*

This portal functions as the pivot of the project. The portal disseminates to all the stakeholders and the officials responsible for the implementation for the project, information on the various components of the project such as product downloads, circulars, hardware installation status, VPN support and the like.

## 8. Implementation

*Strategy for pilot to roll out*

- Improvement of ICT Infrastructure in FCI— Phases I, II and III completed.
- Training of FCI personnel—Phases I and II completed. However, training is an ongoing process.
- Depot Module—is on phased Roll Out stage. The Pilot implementation was across approximately 66 install locations chosen by FCI, which is now being extended to all the depots.

## 9. Capacity building

*Governance structure*

Please refer to Project Management Structure under Project Plan.

*Capacity building*

The Food Corporation of India personnel have been imparted training on Computers, and nearly 400 Technical Supervisors and 1700 Data

Entry Operators have been imparted training on different aspects of the Project.

## 10. Evaluation and Measurement

The Project Monitoring Committee Meeting, which takes place once in three months, utilizes the feedbacks provided by the Regional Officers to evaluate the project and its effectiveness. Corrective measures and decisions are after deliberations during the regular meetings at Central and Regional Levels.

The Impact Assessment of the Project has been carried out by Management Development Institute, Gurgaon. The report titled 'Impact Assessment and Evaluation of IISFM Project of Food Corporation of India' has been handed over to Govt. of India.

## 11. Issues and their Solutions

*Lessons learnt*

Critical success factors, failure factors

- Commitment; coupled with regular review and monitoring by the Internal Stakeholders.
- End-user's participation and enthusiasm
- Project Architecture
- Timely availability of funds

*Replication in other states*

This project is a nation-wide implementation.

*Road ahead*

The scope of the project has been enlarged to cover the de-centralized procuring States, which means to capture information relating to food grains management operations done by agencies other than FCI also; therefore the project duration has been extended till March 2009.

## 12. Status and Results

*Present status*

- National Level Reports at Zonal Office, Regional Office and District Office level are in operation for more than a year. These reports are

generated from the food stock data available at District Offices.

- Approximately 890 field locations have been provided with the necessary hardware as part of the ICT infrastructure improvement.
- The Food Corporation of India personnel have been imparted training on computers, and nearly 400 Technical Supervisors and 1700 Data Entry Operators have been formed.
- All the Zonal, Regional and District Offices of Food Corporation of India have been connected through a VPN.
- The depot module, which captures every transaction and stack-wise details of various food grains, kept in the food storage depots have been made operational in more than 180 depots. Data is being transmitted from these depots, thus one can get the latest stock position over the web. FCI has the target to implement this module in all the depots by the end of year 2007.

## 13. Specific Achievements during the Year 2006–07

- All the Zonal, Regional and District Offices of Food Corporation of India have been connected through a VPN.
- The district-wise stock accounting data is captured at district level, and after consolidation, stock related reports are generated at Region, Zone and National level and is available through internet.
- 180 depots have transmitted their respective stock data and this could be viewed over the web.

## 14. Future Plans for Readers Seeking More Information on Project

- Additional reports, queries and trend analysis on various combinations of parameters shall be made available over the web.
- Food stock storage information shall be made available through graphical and GIS interface.