

## CHAPTER XVIII : MINISTRY OF WATER RESOURCES

### Central Water Commission

#### 18.1 Deficient implementation of intranet portal 'Sangam'

**There was a delay of more than three years in completing the intranet 'Sangam' portal of the Central Water Commission. Further, despite expenditure of Rs. 37.85 lakh, the implementation of the system was deficient, and the system was remaining largely idle.**

Under a IX Plan scheme for "Upgradation and modernisation of information technology system", the Central Water Commission (CWC) awarded the work of software development for its intranet portal to M/s C-DAC in July 2002 at a cost of Rs. 44.50 lakh; the work included intranet application development, databases and data entry, commercial software, training, integration and implementation of commercial software, network and intranet improvement services, documentation, media, warranty and hand holding.

The intranet application was intended to harness the advantages of IT in administrative, financial and technical fields, and provide a canvas for appropriate information links to all the offices of CWC and to other organisations as well. It involved development of 8 modules<sup>1</sup>, which were to be mounted on the 'Sangam' intranet portal of CWC. The platforms chosen for the portal were Microsoft SQL Server at the back-end and Active Server Pages for the front-end web based interface. The work was stipulated for completion by April 2003.

IT audit of the software application (June 2007) revealed that a structured approach to system development was not adopted:

- Before awarding the contract, CWC did not conduct a feasibility study to identify and evaluate alternative options and formulate a business case for the computerisation proposal.
- CWC did not also prepare a User Requirement Specification (URS) for the system, which should have formed the basis for system design and development, as also for inviting quotations from prospective vendors.

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<sup>1</sup> (i) Technical Information Highway (TIH), (ii) Establishment & Accounts (Personnel Information System-PIS), (iii) Financial Management System (FMS), (iv) Budget, (v) Administrative Features, (vi) Intranet main Page, Administrative, and Security Features, (vii) Parliamentary Query System (PQS), and (viii) Library Information System (LIS).

- ↘ The System Requirements Specifications (SRS) prepared by C-DAC, which was not based on formally documented user requirements of CWC, was conditionally accepted by CWC (March 2003) and changes made to original SRS were not properly documented.

Audit scrutiny also revealed that the work of software development was completed only in April 2006, against the stipulated date of April 2003. Although the software was developed and tested by C-DAC, piecemeal extensions of time were granted till July 2004 for implementation. Due to delay by CWC in furnishing data, C-DAC withdrew its team from software development work from March 2004 to July 2005. C-DAC restarted the work in July 2005 on the condition that identifiable responsibility / ownership in execution of the work by the management would be provided by CWC, resulting in completion of the work by April 2006.

However, despite completion in April 2006, the implementation of 'Sangam' was still found to be deficient. Audit examination of the database in July 2007 revealed that only two modules, namely, PIS (Personnel Information System) and LIS (Library Information System), contained significant data. Even in respect of these two modules, the data was only partial and there were several cases of invalid or incomplete data records. The system was thus, largely, remaining idle.

Thus, due to non-conduct of feasibility study, non development of User Requirement Specifications and poor IT project management, the intranet 'Sangam' portal of CWC was completed after a delay of more than three years. Further, lack of ownership and involvement right through the planning, development and implementation stages resulted in the system remaining largely idle, despite expenditure of Rs. 37.85 lakh.

In response, the CWC stated (November 2007) that:

- ↘ A standard approach was adopted to the development of the Intranet portal, as per standard practices in a Government system, by constituting committees, namely 'nodal group' and 'procurement committee', consisting of experts from various fields, including representatives from NIC. User representatives were part of the nodal group and procurement committee of experts. The steps/ procedures suggested by the experts of various fields in the committee were adopted as such. The procedure for awarding the

work of development of the software was vetted by the finance desk of the Ministry, before approval of the Secretary.

- ↘ The SRS was prepared by C-DAC with the active participation of user representatives of CWC, with overall co-ordination by Secretary, CWC, and was accepted subject to the condition that necessary modification of the software development would be carried out by C-DAC, based on recommendations during testing or during user trials of the development software.
- ↘ The extension for the work of software development till April 2006 was granted by the Ministry in April 2006.
- ↘ Implementation of a versatile package like CWC could only be a gradual exercise involving acceptance by all users. The larger role in its initiation was required to be played by the establishment officials for capturing miscellaneous service book details/events. Understandably, these officials were not very computer savvy, and moreover with manpower constraints, not many of them were being spared for training or dedicated data entry jobs.
- ↘ While the LIS module data entry was nearing completion, progress on PIS module data, which had to be entered by role managers of various establishment sections was relatively slow due to excessive work load/ shortage of manpower/ non-availability of computers etc.; moreover, data entry work could not be outsourced. The administrative module was fully operational, and usage would pick up as soon as it was popularised. The Parliamentary Query System was fully operational, and use of this module had to be picked up by the nodal directorate. The TIH module was complete, but data had to be gradually built up through co-operation of individual users. Other modules were linked to PIS, and hence overall implementation of 'Sangam' was getting slowed down.
- ↘ It may not be apt to say that the system was remaining idle. The program was fully developed, and considerable progress was being made on implementation, in spite of such constraints as lack of manpower and hardware resources.

The response of the CWC is not tenable for the following reasons:

- ↘ A structured and systematic approach<sup>2</sup> would involve the conduct of a feasibility study, followed by the preparation of a URS, which would form the basis for inviting quotations from prospective vendors. Such an approach helps to ensure that the system, when developed, is fully aligned with business and user requirements, and is effectively implemented within the stipulated time schedule with the full co-operation and support of the users. Constitution of committees, even if experts and user representatives are included, and vetting of the award of the work by the Ministry's finance desk do not, by themselves, constitute such an approach, in the absence of a formally documented feasibility study and URS.
- ↘ The fact that the SRS, prepared by C-DAC, was accepted with the caveat of modification at the time of testing and user trials, itself clearly points to the lack of adequate user involvement through the drafting of a formal URS. A properly prepared URS should form the basis for development of a SRS, and user trials and testing would then be with reference to the URS and SRS, and not the basis for significant changes to the SRS after development of the software.
- ↘ The fact that the implementation of the intranet portal 'Sangam' was being hampered primarily due to lack of adequate co-operation from users in entering data, and making use of the system, purportedly due to manpower and other constraints, itself points to the lack of adequate user involvement at the time of developing the URS. Such user involvement at the initial stage (feasibility study and URS) would have ensured a focus on a practicable, realistic and implementable scope for the proposed IT system, after due consideration of existing constraints, before calling in a vendor for system development. In the current case, the process of first developing the system and then making efforts to persuade users to make better use of the developed modules has contributed significantly to the delays in implementation.

The matter was referred to the Ministry in July 2007; their reply was awaited as of January 2008.

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<sup>2</sup> For example, CoBIT (Control Objectives for Information and Related Technology) is an international open standard issued by the IT Governance Institute