FINANCIAL MANAGEMENT INFORMATION SYSTEM

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Abstract

The Management Information System is a concept of the last decade or two. The role of MIS in an organization can be compared to the role of heart in the body. Most of the organizations be it small or large are using computer based information system with centralized, decentralized or distributed networks connecting data flow from and to the various departments/ branches. Hence the MIS is defined as a system based on the database of the organization evolved for the purpose of providing information to the people in the organization. The development of MIS in finance can improve the system's functions, performance and productivity. This paper includes a study of designing the Financial Management Information System (FMIS) and to show how FMIS benefits the organization by aiding the managers to achieve their goals. It facilitates them to see if the performance is on the right track, based on the existing financial database. The read-only reports are presented to the executives in Excel by pulling in the data from the Tally database using the Microsoft Office tool. The automation of watch register is an application that keeps a watch on all the receipts and payment bills and check with the budgets allotted. The user- interface developed using Visual Basic is to enter, view and delete the data. The data is stored in Oracle9i database. In this endeavor, atomizing different registers and reducing the manual work of calculations aid finance system. Thus MIS designed throws light on the importance of easy access to useful information to the executives in improvising the system performance.

Key Words : Information systems , Financial Management

1. INTRODUCTION

The financial system of an organization, be it small or big has a great influence on its healthy growth and existence. Due to the increasing complexity in handling the financial activities, the need to use computer based information systems with centralized, decentralized or distributed networks connecting data flow from and to the various departments/ branches is greatly felt. Thus an efficient mechanism to process voluminous data for speedy analysis and output is a need of today, for the decision makers to make effective and scientific decisions. Management of data provides information needed to serve as an effective and efficient tool in decision making in every forward-thinking venture. It is worth noting that of the total number of computers installed in the world today, over 80% is used in organization for Management Information Systems (MIS). MIS helps the top management in goal setting, strategic planning and evolving business plans and their implementation. The MIS plays the major role in information generation, communication, problem identification and helps in the process of decision-making. It creates an impact on the organization's functions, performance and productivity. The managers are informed about the progress, achievements, trends and shortfalls in the activity and the targets. Since the goals and objectives of the MIS are the products of financial goals and objectives, it helps indirectly to pull the entire organization in one direction towards the corporate goals and objectives. Since the MIS works on the basic systems such as transaction processing and databases, the drudgery of the clerical work is transferred to the computerized system. MIS is therefore a tool for effective execution of management process.

The objective of this paper is to study the need for a good financial management information system at an organizational level, and to develop a system to enable an efficient information retrieval. This also throws light on the problems faced during the implementation of the same.

The following factors influence greatly on successful development and implementation of such a system:

1) The users and developers should have a close interaction in discussing the business goals.
2) The managers should interact with the developers at every phase of the development to see if the system being developed supports business objectives.
3) The users must be really cooperative in discussing their needs.
4) Degree of reliability of database of an organization.

MIS can at times be a failure, when there is diverse software used in the organization to store the data, when integrating isn't possible. MIS aids only formal decisions that can be codified in the form of systems and procedures. Care must be exercised to note that some decision situations may have far reaching consequences and yet be out of the reach of MIS. This includes innovative and intuitive decisions, emotional and personal decisions that may not lend themselves to formal framework of analysis.

II. METHODOLOGY

a) The Sample:

To examine the above factors a case study on finance system of one of the best technical institutions This descriptive study, adopted conceptual and analytical approach. After a detailed study, computerisation of the different registers in the finance section was made using Visual Basic and Oracle and as per the user requirements, to enable on-line updation of different registers and automatic report generation. Also Financial Management Information System (FMIS) is designed using the Critical Success Factor (CSF) approach, though implementation is not possible in the present scenario. For this purpose there is need for gathering, storing and updating data and information about the receipts and payments on a continuous manner and also making it easily retrievable. This requires setting up a computerized information system with network facilities linking up data producers, providers and users. FMIS aids the decision makers by providing the information needed by accessing one or more large databases containing financial data leading to improved performance of the finance system and organization as a whole. And hence decision makers at every level, be it operational, tactical or strategic level, can have accurate, timely, and up-to-date information to carry out management functions such as planning, organizing, staffing, leading and controlling most effectively.

b) Limitations:

After the study of the existing system, several limitations were noticed. Security implications was a major hindrance in getting important information sometimes when needed. The major problem is connecting to Tally database through Visual basic or VBAs since there is no connectivity provided. Though it is possible to pull Tally data either by exporting from Tally to Excel or by using Microsoft Query through TallyODBC, it is not possible to hardcode this access. And hence fails the implementation of FMIS due to the usage of Tally package to store financial data. And also all data pertaining to finance section is not stored in single database. Integrating different software is cumbersome. Moreover some tasks are still carried out manually. Hence the existing information system doesn't aid the development of an effective and efficient FMIS.

There may be bias, errors in the data provided. Also many of the details, which are very important for the development but confidential, may not have been shared.

III. NEED ANALYSIS

Analysis conducted to study the financial system of NITK, Surathkal consisted of:

a) System Analysis

i) Environment Analysis:

This part of the study showed that, there are a number of forces, have an impact on the system's performance. The forces from internal environment are controllable where as from

external environment such as the economic, the technological, the social, the political and the ethical environment is beyond one's control.

ii) Stakeholders' Analysis:

In the context of planning of finance there are different stakeholders at different levels, viz national, state and institutional. Their issues of concern are to be clearly understood and addressed to make the whole approach to financial planning more relevant and meaningful.

The broad issues of concern of these three segments of decision makers and the information required is the knowledge about existing facilities like Equipment and machinery, Workshop, Laboratory, Library, Faculty, Class rooms, Space.

b) Strength Weakness Opportunity Threats (SWOT) Analysis:

Based on the environment and internal analysis, the following points are noted about the finance system of

NITK:

- Strengths - Committed and inspired leadership, Government support, Established infrastructure, wide spread network
- Weakness - Piecemeal work, delay in processing.
- Opportunities - Finance system can improve the efficiency by improving the work scenario, Improvement in information system can bring about improvements in working of the finance system.
- Threats - Without user training to use the system, the staff will not be able to perform better, even if system is changed.

c) Decision Analysis

Financial management calls for a number of decisions, based on the analysis of the financial status of the organization. The decisions are: grant requests, fee structure, other sources of finance, selection of investment alternatives, carrying out projects, providing facilities etc. The applications, which support the above decisions, are

- Cash flow analysis
- Sources and uses of funds
- Debtors analysis and aging
- Creditors analysis and aging
- Budget analysis
- Ratio analysis and management norms
- Capital budgeting and ranking of investment alternatives
- Maintenance cost analysis

d) Requirements Analysis

In this phase, *an initial survey* was conducted to know the user group and to learn the present system, in order to clearly understand the *goals*, *processes*, and *constraints* of the system. A formal and detailed description of the information domain, function, behavior, performance, interfaces, design constraints and validation criteria is found to be essential, which can be determined only after thorough *communication* between the users and the developers. Since finance section is partially computerized, several shortcomings in the present system are noticed.

e) Status Quo Report

Development of facilities for education and training of engineers, technicians, architects, town planners, management personnel and so on comes under the purview of the AICTE, MHRD and State Government. The grants for a financial year are paid in installments. There are plan and non-plan grants sanctioned by MHRD. There is also cash-in-flow from students' admission fees, term fees, exam fees, canteen rent, guest house rent and many other self financing schemes. Resident Engineer's. office, cash section, accounts1 section and accounts2 section were covered in system analysis.

IV. DESIGN ASPECTS

a) Existing Information System

Currently not all the tasks are computerized. Different departments use different softwares such as Tally, Foxpro, Dbase, and Excel etc., to carry out the task.

b) Software Requirements' Specification (SRS)

This document was prepared to learn the user requirements, which specifies the required behavior of a Watch Register system in terms of input data, required processing, output data, operational scenarios and interfaces. Also the attributes of a system including performance, security, maintainability, reliability, auditability, availability and safety requirements and design constraints. To have an effective FMIS, integration of all the systems having financial data, should be done. At this stage, only computerisation of the watch register is attempted.

c) Design of the watch register

The different types of accounts, say UG recurring account, PG recurring account, and so on. have unique heads of account under receipts and payments of that particular account. Each head of account is allotted a unique code to identify a particular head. Each year, annual budgets are allotted to these heads. Whenever the bills come to the accounts section for approval, the total amount received/paid towards a particular head is calculated and matched against the budget for approval. A constant watch is kept on every bill that comes into the section.

The system developed is capable of storing all the receipt and payment heads under a particular account type, create new account types and new heads of account, allocate annual budgets,

store the information about every bill approved, and calculate the balance. Also, by changing the financial year, it is possible to enter and view budgets and bills of any year. This system only keeps a watch on the bills and is not a profit and loss account. It does not carry forward the previous year's closing balance to the next year. This system can be used for all such accounts for which annual budget is allotted.

Kinds of users:

Three kinds of users are created:

1.OWNER: This administrator's login allows him/her to change password, view all the displays, create/delete a particular account, delete the unwanted records.

2.DATA ENTRY: This is for data entry operators. He/she can view all the displays, change password but cannot delete any record.

3.GUEST : This is for the managers such as Director, Dean, Registrar etc They can view the displays and know about the annual budgets allotted for accounts such as recurring account, annual plan and so on and also know about the bills approved.

Functions of Watch Register:

The different functions of the watch register module are:

- Watching grants
- Watching payment bills
- Budgeting

Here the System and Database administrator is responsible for proper functioning of the system, the Head of

Account section will be entering the data, other users of finance section, and managers can view the reports. Other

functional requirements are, inputs, processing and outputs.

Organizational Levels:

The organization typically can be divided into three levels :

1. Operational: Here people are involved in operational activities and require day-to day consolidated reports.
2. Tactical: People at this level are usually involved in allocation of resources and they require the utilization reports.
3. Strategic: The executives are involved in formulating goals and objectives and are interested in those reports which aid evaluation of performance.

V. SYSTEM DESIGN

The design phase focuses on the detailed implementation of the system recommended in the feasibility study. Stages of design of the system are :

a. Conceptual Design

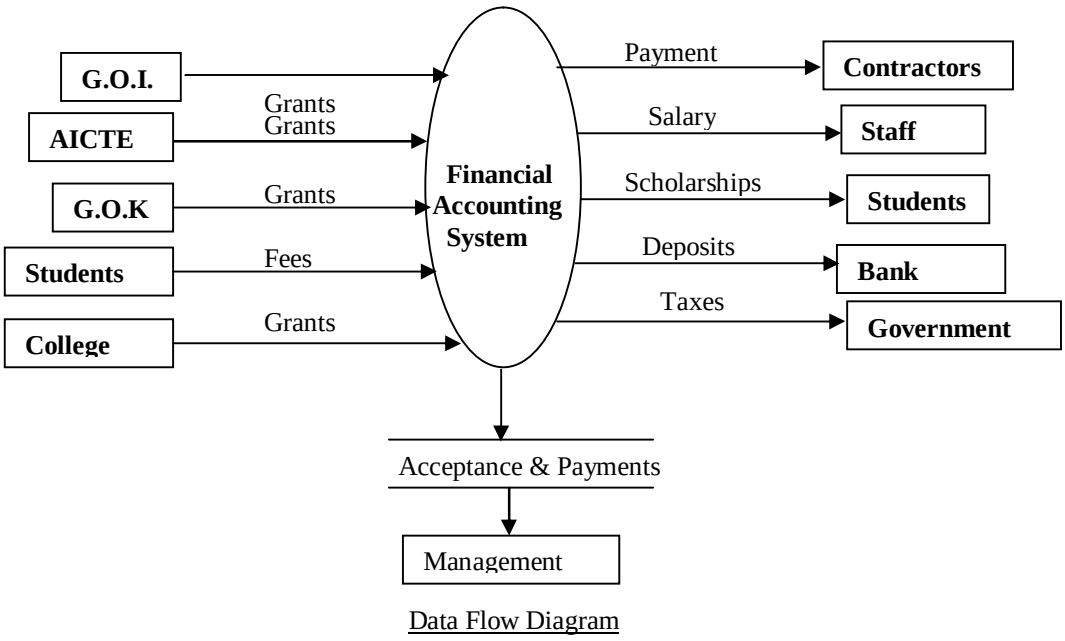
This is to give a blueprint to show the kind of data used in building the database and the logical relationship.

b. Dataflow Diagram (DFD) :

This is drawn to represent the data stores, processes used, entities involved in the system and the information flow. A 0 level DFD giving an overview of the accounting system is shown in the figure below.

c. User Interface Design

This is designed with simple and elegant input and output forms with validation and also informative Reports generation facility is provided



Data Flow Diagram

d. FMIS Plan

To understand the needs of managers, Critical Success Factors (CSF) method is followed, which deals with the frustrations of senior managers who receive dozens of computer-generated reports each month, but find little information of value in these reports.

The first step in CSF method is for the managers to identify his/her goals and the CSFs underlying these goals. A CSF defines what has to go right to achieve a business goal. For a service organization, CSF includes cost-effective back-office operations and clerical productivity. Hence the factors that evaluate the performance is known from the managers.

The Executive committee shall have powers in respect of all matters connected with financial system including

1. The manner in which to carry out the purposes of the financial system.
2. Preparation and sanction of budget estimates.
3. sanctioning of expenditure.
4. Execution of contracts.
5. Staff recruitment.
6. Investment of the funds.

The goals of a finance system of a service organization is not profit making but still availability of funds make smooth running of the organization. The main task here is to control and co-ordinate the finance personnel and the activities.

Critical Success Factors (CSFs) and Key Performance Indicators(KPIs):

The critical success factors of the finance system, the key-process indicators of these CSFs and the information that aids this are

CSF	KPI	Information needs
1. Grants maximisation	Grant position	Grants and the grantees for plan and non-plan funds for the last 5 years.
2. Cost minimization	Operating, maintenance costs	P&L A/C, year wise and department wise details of costs.
3. Providing good facilities	Assets, projects and research work carried out.	Balance Sheet, Plan fund reports
4. Maximizing funds	Grantees, self-investment scheme	Self-financing report, fund-position
5. Potential staff	Qualification, attendance, Training programmes.	Staff records.

e. Database Design:

The database design also plays an important role in the retrieval of information. Hence this should be given a major importance.

f. Testing

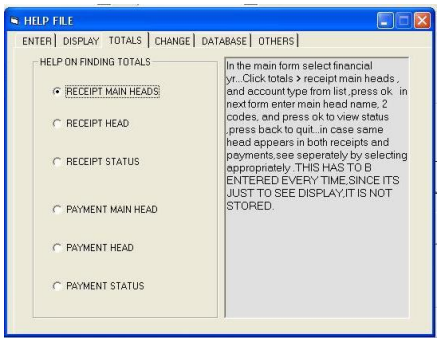
The product was tested for its reliable functioning.

VI. RESULTS

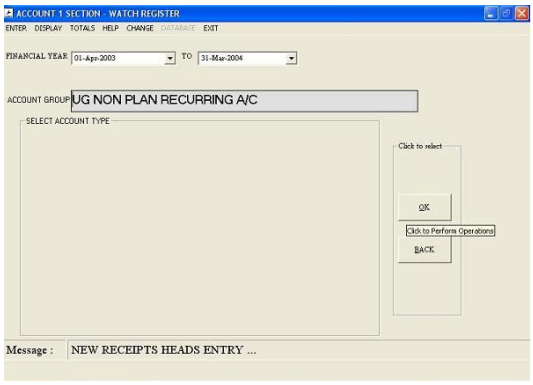
A few of the results obtained are as under :

The Login form

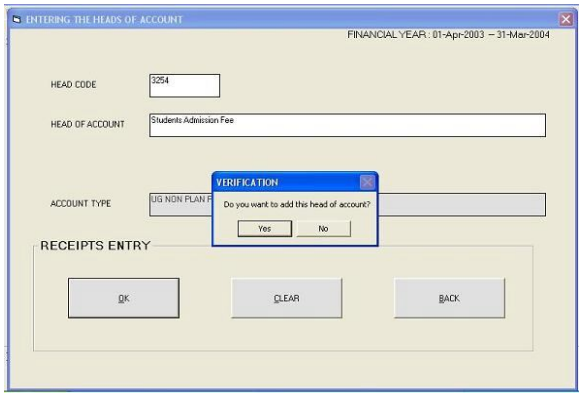
The help file to use the system



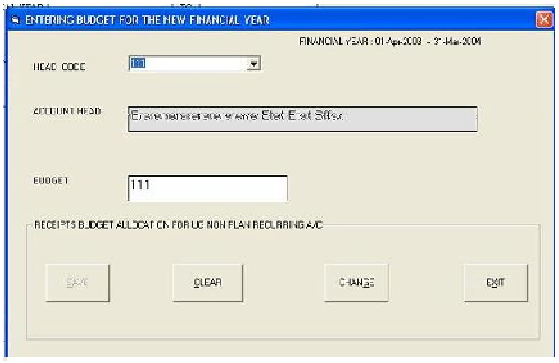
Main form that user sees after login, containing the menu of operations



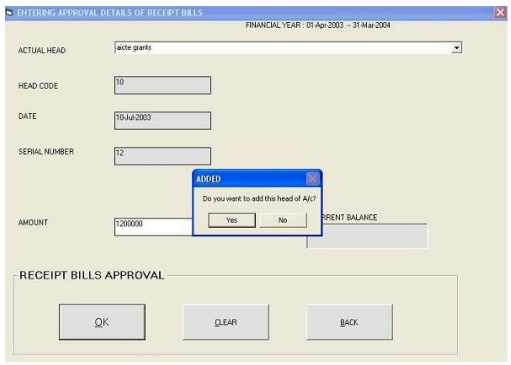
Adding a new head of account in any account



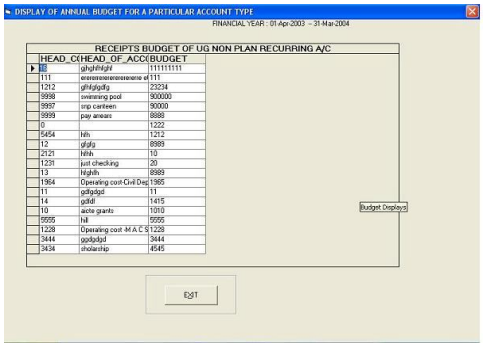
Adding annual budgets for the heads



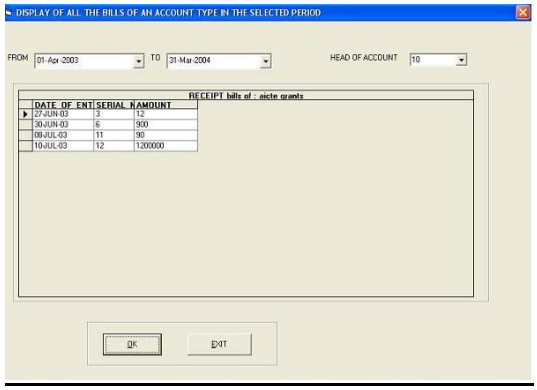
Entering the receipt and payments bills approved



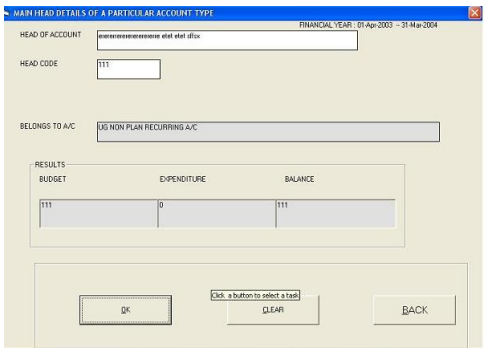
Displaying the annual budgets



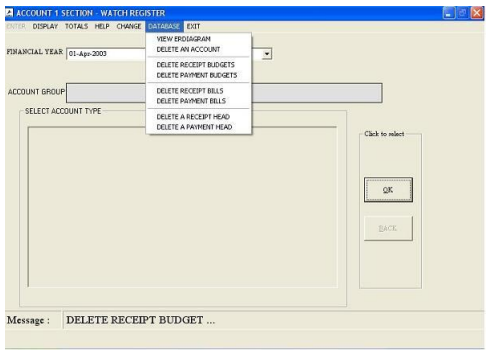
Displaying registers



Finding the current balance of any head of account.

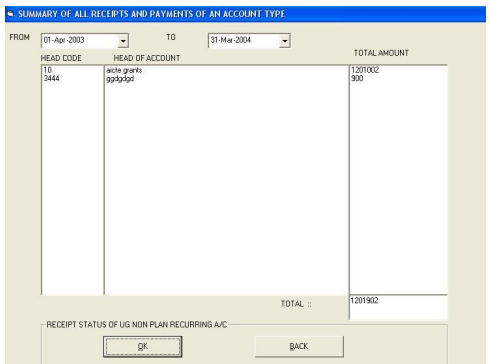


Menu showing administrators operations.



Adding a new account

Form showing receipt and payment status



VII. CONCLUSION

The study showed that major advantage of computerization of a finance system of an organization is the availability of timely information across the board. The FMIS reports are specially aimed at improving the overall functioning of any organization which in turn will mean better utilization of funds.

Tally solutions provide an accounting package which is generic. Though it is a well developed package and widely used, it is obvious that it will have limitations because the processes carried out in each organization is different . So to aid the online processing of different tasks in an organization, it is necessary to know all the processes clearly and build a system according to that. If the system is specifically built to serve the purposes of this college, the functioning of the finance system will definitely improve.

It is recommended to have computerized FMIS in any reputed technical institution. However, piecemeal work in finance system should be avoided. The accounting package should provide a total database needed to develop an effective and efficient MIS/EIS. FMIS designed based on CSFs can help managers in setting goals and eases the task of data entry person by balance calculation and can be implemented when the financial database provides a complete scenario of the finance system.
Automation of different registers provides up-to-date and easy access to the information pertaining to the bills passed and also the current balance. This module can be integrated later to provide support to MIS development. The automation of watch register is an important task necessary to provide a complete information to the executives. The system built can provide all information about the annual budgets and the bills approved so far. The system could be built to accommodate changes and is enhancible.

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