

Role of Management Information System (MIS) in Human Resource

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Abstract

In today's organizations Human Resource is considered as one of the key resources of business organizations. The transaction processing layer of MIS in human resource function deals with routine activities like attendance recording and payroll calculations. The operational level activities also include maintaining the employee records which is used as a basis for strategic layers. With the growing importance of human resource management and increasing size of the organizations, maintenance of employee related data and generating appropriate reports are the crucial aspects of any organization. Therefore more and more organizations are adopting computer based human resource management systems (HRMS). This paper is an attempt to design and implement an MIS for the business organization and show how it helps in taking management decisions related to management function especially for the top management.

Keywords

Management Information System, Transaction Processing System, Decision Support System, MIS Model.

I. Introduction

The Management Information System is a collection of men, tools, procedures and software to perform various business tasks at various levels in the organization. Many organizations have separate MIS departments which are involved in maintaining records, performing transactions, report generations and consolidation of the important information which will be supplied to the various levels of the management. MIS primarily serves the functions of controlling and decision-making at the managerial level. MIS has three basic levels: operational, middle management and top management where the information is passed from bottom to top. This paper is an attempt to design and develop the Management Information System (MIS) for Birla Corporation Limited, which involves Attendance Capturing & Recording System which will be used in monitoring the staff, control over the irregularities and reporting to the top management and show how it is useful in decision making at top level [9]. The Management Information System (MIS) has evolved as an important tool and technique in business management area in the current opportunities and business threats. Right information at right time in right format will decide the managements' Human resource decisions [2]. MIS is one of the important functions of management. In the 21st century the organizations need the information which is accurate, timely and reliable. The MIS plays an important role in providing the information required for crucial decision making which affects directly to the performance of the organization. [8].

II. Problem Statement

The researcher has proposed the study on 'Role of Management Information System (MIS) in Human Resource' with respect to Birla Corporation Limited. The selected organization is of a large scale in terms of size, area and manpower requirement. After preliminary study it was felt to develop an advanced

information management system for various functionalities specifically maintaining attendance by computerized methods and generating management information reports for top management and middle level management. The existing FoxPro based system of recording the attendance in the organization had following drawbacks:

1. Storing each employee's individual detailed information requires much documentation and keeping of these documents is another tedious work.
2. If we want to change/incorporate some rules then we may need to change it in many programs.
3. Time offices of different unit have somewhat different source code consequently modification and maintenance of source code is tedious and troublesome.
4. Existing system is not on-line and final attendance summary are brought up by floppies and requires re-loading in Oracle based payroll system.
5. Reporting of old attendance details of a particular worker is too much difficult in existing system.
6. Any calculation mistake in existing system could lead to erroneous result.
7. There are not well-defined authorizations and security levels in the current FoxPro based system.
8. Mater of the existing system is on stand alone PCs and requires frequent updates by data of computer center.
9. There are no facilities of full database backups and there is always panic situation of data loss.

III. Concept and Meaning of MIS

The initial concept of MIS was to process data from the organization and presents it in the form of reports at regular intervals. The system was largely capable of handling the data from collection to processing. It was more impersonal, requiring each individual to pick and choose the processed data and use it for his requirements. The MIS differs since the people in two organizations involved in the same business. [8] The MIS, therefore, is a dynamic concept subject to change, time and again, with a change in the business management process. It continuously interacts with the internal and the external environment of the business and provides a corrective mechanism in the system so that the change needs of information are with effectively.

MIS has been understood and described in a number of ways. It is also popularly known as the Information System, the Information and Decision System, the Computer-based Information System. The MIS has more than one definition, some of which are given below:

1. The MIS is defined as a system which provides information support for decision making in the organization.
2. The MIS is defined as an integrated system of man and machine for providing the information to support the operations, the management and the decision making function in the organization.
3. 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 MIS is defined as a Computer based Information System.

Thought there are a number of definitions, all of them converge on one single point, i.e., the MIS is a system to support the decision making function in the organization [7-8]. The MIS is defined as an integrated system of man and machine for providing the information to support the operations, the management, and the decision-making function in the organization. An MIS deals with information that is systematically and routinely collected in accordance with a well-defined set of rules. In other words, data collection is a planned activity for which resources are allocated and rules are defined [8].

A. The Information Needs of Managers

The common need basic to all managers is an understanding of the purpose of the organization, its policies, programs, plans and goals though the decisions may be according to the capacity of analytical approach of using the information of the manager the information people need depends on type of decision - structured or unstructured, organizational level they occupy and activities they perform, factors critical to their success.

B. Features of MIS

- In any organization managers will have varieties of task to manage. MIS is mainly designed to take care of the needs of the managers in the organization.
- Organizations will have different departments like marketing, production, sales, inventory, maintenance etc. Each of these departments function individually and also in relationship with other departments. Information is available in abundance. MIS aids in integrating the information generated by various departments of the organizations.
- MIS also helps in establishing mechanism to eliminate redundancies in data.
- MIS as a system can be broken down into sub system; each sub system may be programmed. This results in easy access of data, accuracy of data and information. It helps in maintaining the consistency of data [5].

C. Necessity of MIS

Managers play a key role in any organization. They are responsible for taking decisions appropriate to the need of the market. Information systems have become the main tool used by managers in decision making. Managers perceive information as the driving force to achieve success in any business. Hence there is a need of MIS [2-3]. The impact of MIS on the functions is in its management. With a good support, the management of marketing, finance, production and personnel become more efficient. A well designed system with a focus on the manager makes an impact on the managerial efficiency. The impact is on the managerial ability to perform. It improves the decision making ability considerably.

IV. Overview of Organization

Birla Corporation Limited has number of plants, out of which, two at Satna (M.P.) - Satna Cement Works & Birla Vikas Cement, Chanderia (Rajasthan) - Birla Cement Works & Chanderia Cement Works, and Durgapur (W.B) - Durgapur Cement Works & Durga Hitech Cement and one at Raebareli (U.P). They manufacture varieties of cement like Ordinary Portland Cement

(OPC), 43 & 53 grades, Portland Pozzolana Cement (PPC), Fly Ash - based PPC, Low Alkali Portland Cement, Portland Slag Cement, Low Heat Cement and Sulphate Resistant Cement. The total employees in the plant are found around 5200 of various categories. The system developed is used to maintain attendance record for the same [1].

The following chart shows how MIS can be developed in an organization.

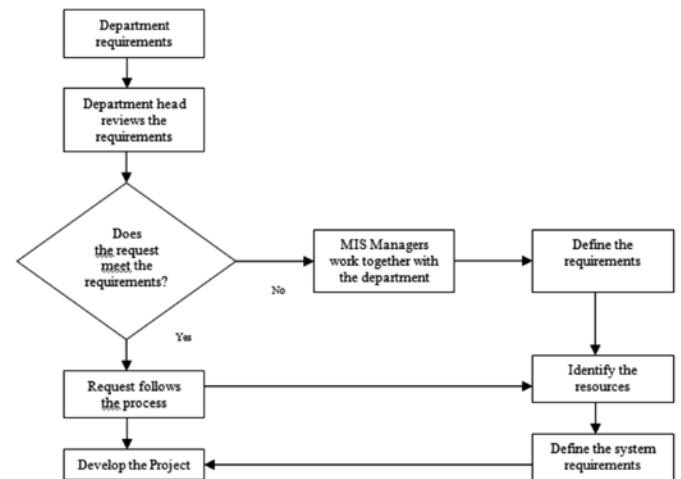


Fig.1 : Management Information System (MIS) development model"

V. Development of MIS

The development process of MIS relates with the long-term business plans of the organizations. MIS requires resources like capital, time and capacity. The end result is information in the form of reports. Most of the organizations do not recognize information as a resource. They see information as a routine necessity. As an organization grows, the information also increases manifold. The MIS plans are developed concurrent to the business plans. An organization of any size deals with numerous pieces of information [6 - 7].

Management Information System (MIS) may be developed using following ways:

- Prototype method
- Life cycle approach

In the prototype method, initial methods are developed first. Once implemented, the system is refined and modified as per new specifications. This iterative process is followed till the system is accepted by the user.

In life cycle approach, the MIS development is carried out through different phases. The phases are: Feasibility study, Analysis, Design, Implementation and Review. The choice of MIS design is decided on the basis of nature of the system and its applications. Thus the MIS is developed over time as the business increases.

A. Designing of MIS for Attendance Capturing & Recording System

The main objective of Attendance Recording System (ARS) is to ensure that the attendance (i.e. presence or absence) of employees is accurately recorded and reported for computation of payable days, overtime hours, festival allowances and payable ESI contributions etc.

B. Responsibilities

Following are the responsibilities assigned at various levels in the organization-

1. Employing Activity's Responsibilities
2. Approving official's Responsibility
3. Timekeeping Responsibilities

1. Employing Activity's Responsibilities: Time keepers shall ensure that:

1. Worker's shift punch times are according to shifts allotted by corresponding department HOD.
2. The recording and approval of time and attendance are performed timely and accurately as required by worker's allotted shift.
3. All required supporting documentation is available for audit purpose.
4. Procedural guidance manual is clear and adequate to ensure that time keeping are correctly performed.
5. All corrections and adjustments are in accordance with corresponding department list provided by department HOD.

2. Approving official's Responsibility:

1. Normally, timekeeping responsibilities shall be assigned to individuals who are aware of employee's attendance and absence each day.
2. Timekeeper shall ensure that exceptions to the worker's normal tour of duty are recorded in a timely and accurate manner.
3. An alternate timekeeper shall be appointed to maintain time and attendance during the absence of the primary timekeeper.

3. Timekeeping Responsibilities:

1. Timekeeping is a critical function, which may be performed by the individual employee, Timekeeper, department's HOD, or a combination of these individuals. The timekeeping function requires the accurate and timely recording of time and attendance data and the maintenance of related documentation.
2. Timely and accurate recording of all exceptions to the employee's normal tour of duty.

An efficient employee Attendance Recording system makes for a smoother-running organization. The ARS can contribute to an organization's overall harmony and efficiency. This automated system saves time for managers and employees, improving their productivity. By eliminating manual record keeping, it reduces errors, avoiding disputes. ARS integrates a company's accrual policies and consistent awarding of employee attendance. The primary goals of ARS are to:

1. Establish an efficient workflow process for attendance authorization.
2. Integrate time and leave data with HR, payroll and ERP systems, or to APIs for electronic processing.
3. Ensure accurate and consistent implementation of pay and leave policies.
4. Quickly and simply request leave or other scheduled absences.
5. Receive automatic notification of leave balances, as well as available vacation and personal time, sick days and other leave benefits.

C. Decision Making at Top Level

A decision is basically resource allocation process that is irreversible except that a fresh decision may reverse it or it may overrule the earlier one. A decision is a reasoned choice among alternatives. The decision maker having authority over the resources being allocated makes a decision. The decision can be of various types like simple decision in which there is only one decision is to be made with many alternatives, decision may be goal oriented; decision may be strategic or tactical. The decision capacity involves intelligence, design, choice and implementation of decision maker.

The MIS designed in the study for Attendance Capturing & Recording for Birla Corporation Limited mainly generates the reports like Daily Attendance, Monthly Attendance, and Sick Report etc. on which the top management by receiving these reports analyses and the decisions regarding shifting the priority of the job, observing the performance and corrective measures are taken.

D. MIS Designed for Attendance Capturing & Recording System



Fig. 2: MIS designed for Attendance Capturing & Recording System

The main purpose of this system is to capture the data and recording the attendance of the employee's working in the organization. For completion of this task a punching machine i.e. Punch Card Reader is used. Each employee punched his card into the punching machine. The punching machine reads his card no. And that particular time, on which the card is to be punched. After that the whole data which is stored on the machine are captured by a software i.e. Auto Data Capture CP/IP (version 7.3.1). It describes the Machine No., location, memory used, status, record no., and last update time. Captured data is to be load by using either Windows 2000 or Telnet through the use of loader. When the captured data is to be completely loaded then we requires to the processing of punched data. During the processing of punched data the processed data is to be transferred in the database.

In the proper working of this system the Punch Card Reader machine, Auto data Capture software, loader, Processing of punched data and transferring the processed data into the database plays an important role. Firstly the employee punched his card into the punching machine. The card is to be punched in the machine according to the shift on which employee do work. Therefore the card is to be punched in the time of shift started, lunch in, lunch out and when the shift ended. The punching machine reads employees card no. and that particular time, on which the card is to be punched. After that

the whole data is captured by the Auto Data Capture software that, describes machine number, on which the card is to be punched, location, memory used, status, record no. and last update time. The captured data is to be loaded by the loader. We can load captured data by using either Windows 2000 or Telnet through the use of loader.

When the captured data is to be completely loaded then we requires to the processing of captured data. For processing of punched data we need to give the process start date i.e. the date of processing loaded data, process unit i.e. the unit that is to be processed and process day of employee. After giving these values it starts processing of punched data automatically. If in any date the data is not exists then it displays a message that punched data is not available on that date. If any employee punched his card more than one times instantly then it automatically deletes double punched card. After processing of captured data it displays the message that punched data processing have in completed. If there are any mistakes in the processed data i.e. missing punched time etc. then it can be eliminated by using missing punch correction form.

If missing punching exists in processed data then we required the transferring of punched data. In the process of transferring the punched data we need to key in payment day of employee, pay unit and the date of employee attendance. If the data is to be not processed on that date then it does not transferred the data in the database. It transferred whole data in the database. After transferring of processed data into the monthly attendance database we can perform various operations on it i.e.

1. Getting daily attendance of employee according to their unit on which they are working.
2. Getting attendance of employee in a range.
3. Getting monthly attendance of employee.

E. Reporting from the Designed MIS

The reports which are used by top management are generated from the above MIS like Monthly Attendance, Card Replacement, Sick Report, and Monthly Voucher Correction which are submitted to HR Manager and he takes proper decisions related with Attendance Capturing & Recording. The proposed system has following advantages :

1. Worker's individual information is stored separately.
2. Searching of particular information became faster.
3. Generation of various reports made review process easy.
4. Due to user friendly interface the matter became easy to understand.
5. Password oriented system increased security of data.
6. There are facilities of full database backup and central control of user.
7. Well-defined authorization and security levels.
8. The developed system is on-line.
9. Economical.

Fig. 3: Monthly Attendance Processing Form

Fig. 4: Monthly Attendance Correction Form

F. Limitations

The proposed system has following limitations:

1. If the punch card is not punched properly in the punching machine i.e. Punch card Reader then it does not read accurate data.
2. This system works on punching machine therefore the Punch Card Reader must be required.
3. If the punching machine does not read data properly then we need to feed it manually.
4. An unauthorized worker may punch another worker's punch card therefore it is required that worker's punches his punch card strictly in queue at every punching machine and Time keepers are vigilant at every punching machine.

VI. Problems with MIS

1. The most commonly identified causes of problems in MIS include:
2. Lack of top management support
3. Inadequate knowledge about information technology and software tools
4. Improper selection of hardware and software tools
5. Assumptions about information needs as users of information are unable to specify their information requirements.
6. Lack of planning for MIS without proper coordination
7. Lack of interest in users and resistance to change

In order to prevent the above problems, a properly structured MIS planning exercise is essential.[4] [8]

VII. Conclusion

The paper entitled 'Role of Management Information System (MIS) in Human Resource' gives an impact on the important function of top management. It is also used to generate the reports with the help of advanced technology having maximum

characteristics of good information by which the decisions are to be taken related with the functionality of management decisions. The MIS model developed specifically helps HR managers to keep the control on working of the staff at various levels. The system has been tested for above module in Birla Corporation Ltd. The Reports generated are as per the format by which it will help top management to take decision concerned with human resource in attendance recording and capturing which is one of the basic needs of any organization. Management Information System is required for managerial report generation specialized tools; software and procedures are used to develop MIS in the organizations. In the future Decision Support Systems for a particular domain can be developed which can be used for decision support at top level management.

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