UNIT 16   HUMAN RESOURCE INFORMATION SYSTEMS

Objectives

After going through this unit, you should be able to :

l   understand the criticality of systematizing information for effective planning;

l   examine the significance of information systems in Human Resource Management;

l   appreciate various approaches to managing information at the macro and the micro level;

l   assess the disadvantages of the manually maintained information systems; and

l   understand the advantages of computerizing HR information systems.

Structure

16.1   INTRODUCTION

An information system is an inter-related set of procedures and processes to provide informaion for decisions. Information is data that have been processed so that they are meaningful. It adds to the representation of an idea. It corrects and confirms previous information. It tells us something which we did not know. Many organisations have computer-assisted information systems.

An information system especially developed for human resource management is referred to as HRIS – a human resosurce information system. Human resosurce management, when it doesn't include the human resource planning function, requires only a basic HRIS. If this basic HRIS is computer-supported, it is likely to include a transition processing system or mangement information system. An information system provides for the accumulation by gathering, processing by deleting extraneous information, deciding among divergent information and putting the information in a logical arrangement that promotes its understanding. Finally, the information is stored in a readily accessible configuration.

Information is maintained by ensuring its security and by updating it. Information is delivered to potential users in a configuration and at a time most suited for its use.

16.2 CONCEPTS OF HRIS

HRIS is a key management tool which collects, maintains, analyses and reports information on people and jobs. It is a **system** because it integrates all the relevant data, which otherwise might have been lying in a fragmented and scattered way at various points in the larger system; converts this data into meaningful conclusions or information and makes it accessible to the persons, who need it for their decisions.

This integration of data can be at the macro level at the level of a nation or a geographical regional groupings- or at the micro level, that is, at the level of an organisation.

Macro level HRIS is generally focused towards manpower planning and includes statistical information on population, technology and economy. Such information can be obtained from several sources like publications of the Planning Commission, Ministry of Labour, The National Sample Survey Organisation, The National Labour Institute, The World Economic Forum, International Labour Organisation etc. to name a few.

At the micro level, the information requirements include modules on recruitment, personal data, skills assessment, training and development, performance appraisal, rewards and punishment, grievance handling and so on. This information is used for understanding the patterns of HR policies, actions, and employee behaviours as well as for identifying gaps in the HR system and the effectiveness of the HR system. As we shall see in the next Unit, HR Audit is an activity that cannot be undertaken unless a proper HRIS is in place.

16.3 NEED OF HRIS

At the macro level, HRIS is critical for effective planning and budgeting of national resources. Based on HRIS the Government and other agencies involved in manpower planning and manpower productivity, such as the central and the State Governments, AICTU or educational institutions etc, can develop proper strategies to increase the numbers as well as the utilization of the pool of people available for jobs. Efforts can be made to develop the required skills and competencies among the labour pool to meet the national/regional requirements by allocating adequate budgets on the basis of their expected optimum use. The recent initiatives of the Indian Government to upgrade the regional engineering colleges to IIT standards, or to create centres of excellence, or invest in bio-technology research etc. are all results of a national level information base regarding the trends in the demand and the expected supply of manpower made possible because of an HRIS at the macro level.

At the micro or enterprise level, HRIS has become critical for decision-making and policy formulation as well as for ensuring fairness and equity in HR policies and practices. There is an increasing realization that for organisational survival and growth in a competitive environment, human resource is the most critical resource. This coupled with the increase in the cost of hiring, retaining, developing and motivating people to perform at their best has pushed organisations to base their HR decisions on sound logic and thereby, on proper information. HRIS becomes a major asset from this point of view.

The growing need for transparency among the employees and the society is another factor that is compelling organisations towards proper management of information in all areas, including HR.

As the economies are becoming more knowledge driven and thereby, moving towards more qualified and educated workforce, it is being increasingly realized that better-information makes employees more involved, connected, and productive. A major source of connect between the employees and their companies is through the information that they receive and the feedback that they provide. Information management, in general and HRIS in particular, thus, has become a critical factor in managing employee performance. Companies are increasingly realizing the advantage of having systems that capture, analyze, and report on the host of human resource aspects that are critical to running a business and share it with the employees so that they self-regulate their contribution. HRIS is a tool to achieve this objective.

Finally, in human management, perceptions of equity and justice are extremely important for managerial credibility and employee satisfaction. Consequently, HRIS, which helps in identifying policy effects as well as the pattern of policy implementation at various locations, by different people at different points of time, helps in detecting infringements of equity.

Activity A

It is stated that "national strategy of education has to ensure the availability of highly educated and motivated manpower for dealing with the challenges which are inherent in the modernisation and globalisation of the economy". Study the National Education Policy Document and examine what directions does it provide towards attainment of the stated objective.

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Activity B

In your organisation, analyse existing records, reports and forms to determine the adequacy and requirements for data in the Human Resource Information System.

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Activity C

Study the existing Human Resource Information System (HRIS) in an organisation and comment on the procedure followed for maintaining the security of confidential data.

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Activity D

If there is not an existing human resource information system, carry out a rudimentary investigation to identify what data are available in personnel files, dossiers, etc., which could be easily collected for purposes of Human Resource Planning.

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16. 4 TECHNOLOGY SHIFTS AND HRIS

Technological advancements have resulted in a dramatic change in consumer interaction and the methods of service delivery. Consumers are now experimenting with new ways of conducting business. Take, for example, developments regarding automated teller machines (ATMs). Over the course of their more than 15-year history, ATMs have evolved to provide basic banking services 24 hours a day 7 days a week. Finally, new technology is bringing banking services directly into the customer's home. In the medical industry, rising costs have increased the availability of at-home diagnostic equipment and tests. Software packages let people construct their own wills, and even design the house of their dreams.

Changes, such as those described above, in the external environment have serious implications for strategic planning within the organisation, especially with regard to the human resource planning and service delivery functions. As in other cases, mentioned above, in the work-related matters too the employees are expecting greater speed, transparency and empowerment. These in turn, need increased availability and access to the information about their organisation, their work, themselves and their colleagues. Some changes that have taken place within organisations to fulfill the requirement of speed and quick response have been well chronicled. Organisations have been restructured through downsizing, rightsizings, and re-engineering that trim the work force, eliminate middle management, flatten the organization, and improve communication and decision making functions. However, proper information management and communication planning is seen to be the most critical and sustainable move to satisfy employee expectations of self-regulation, greater control over their work-life, and greater opportunity to contribute to the organisational goals. HRIS is, therefore, often seen to be an imperative in a fast changing technological environment.

16.5 EFFECTIVENESS OF HRIS

According to *Tang et al. (*1987) the key to the effective planning of manpower and improvement of people productivity is an effective HRIS. However, in order to be effective an information system must take into account the following :

Adequacy of information: Too much or too little information, both lead to defective decision-making. Therefore, there must be some understanding regarding what information and in how much detail and covering what periods should be maintained.

Specificity: Even where it is not possible to quantify the information, the information should be made as specific as possible.

Relevance: Information is to be managed in the light of the requirements of the decision makers. Therefore, HRIS should focus on the needs of the decision-makers and stakeholders rather than on what is interesting or easily available or palatable to the people. The system, therefore, must also have the built in capability for deletion and updating of data.

Comprehensiveness: The information should be complete from the point of view of the decision-maker giving details of who, what, how, when, where and why .

Reliabilty: Since the information is going to be the basis of critical decisions, it must satisfy the requirements of validity and reliability.

Moreover, to ensure effectiveness, not only should the information provided be relevant and reliable but the **delivery system** should also be the most satisfying and cost effective. A wealth of information but not accessible when needed or available at an inhibiting personal cost in terms of energy and time, is of hardly any use.

HRIS, thus, is not just a matter of collating data but also of ensuring data quality and interpretation and the quality of delivery of information to the users.

16.6   IT SUPPORTED HRIS

In today's enterprises, HRIS are typically Information Technology (IT) supported systems. This is not to say that without IT HRIS cannot be introduced. But information technology allows much greater effectiveness of HRIS than a manual system. Some of the deficiencies of the Manual Systems which an IT based HRIS overcomes to a considerable extent are given below.

Deficiencies of the Manual System

High Investment of time: In manual systems, the entry, up-dation, maintenance, and retrieval of information are all time consuming.

Accuracy: The manual transfer of data, and multiple entries of the same data increases the chances of error. As a result, the accuracy and reliability of the manual system is suspect. Moreover, verification of data, and corrections in it are time consuming.

Fragmentation: Manual Information Systems are often fragmented with several pieces of related information being physically placed in different places. This too makes retrieval difficult.

Duplication: More often than not, the same data may be held by different personnel but in different forms. If any changes are to be made then they need to be made at all the points which leads to duplication of effort.

Difficulty of analysis: The manual analysis of data is time consuming and cumbersome. The difficulty in extracting information promptly from manual systems considerably reduces both, the efficiency and the effectiveness of the system.

Advantages of Computerisation

While it is presumptuous to assume that computerization automatically remedies all the problems associated with manual systems, in the fast changing technological and information processing environment, it does present several potential benefits.

Convenience: In IT enabled systems, data entry, update and retrieval are all significantly faster. Redundant data may be easily replaced.

Integration: A computerized system can greatly reduce fragmentation and duplication of data. All data can be stored in a single system to enable retrieval of complete picture of each employee or of each defined parameter in a desired number of permutation and combinations. Moreover, depending on the requirement, reports can be generated in different ways that provide an accurate picture. Verification of data and error rectification are also relatively easy in computerized systems.

Multi-user benefit

Different people can access the data simultaneously, which facilitates quick dissemination across geographical and structural boundaries and facilitates faster decision-making. Moreover, on-line data entry is possible that leads to automatic up-dating of data resulting into better informed decisions.

However, to obtain these advantages, it is important that the knowledge and expertise is available to the organisation, internally or from outside, to develop and tailor- make the system to suit the organisation's unique needs.

16.7 DESIGNING AND IMPLEMENTING AN HRIS

According to Mathis and Jackson (2000) to design and implement an effective HRIS, the following are necessary:

Details about the required data, such as:

l   What information is available and what needs to be collected?

l   To what use this information be put?

l   In what format this information be presented?

l   Who should have access to what information?

l   When and how often this information is needed?

The answers to these questions will help in the choice of both the hardware and the software.

Formation of a Project team: it is useful to establish a cross functional project team to " review user needs, identify desired capabilities of the system, solicit and examine bids from software and hardware vendors and identify the implementation process required to install the system."(58)

Training of those who will be managing and using HRIS: Both to ensure proper inputs into the system and effective outputs from the system, training of users is desirable. In some of the firms, where HRIS has been successfully implemented, a complete team of trainers was established to give proper training to the employees.

Ensuring Security and Privacy

Proper controls must be built into the system to protect the privacy rights of the employees. They are required both for getting employee acceptance as well as for legal and moral protection against indiscriminate usage of information.

16.8 HRIS AS A TOOL

HR data are wide in their variety, and include job history (transfers, promotions, etc.), current and historical pay details, inventories of skills and competencies, education and training records, performance assessment details, absence, lateness, accident, medical and disciplinary records, warning and suspensions, holiday entitlements, pensions data and termination records. An HRIS normally provides an electronic database for the storage and retrieval of this data which is, at least potentially, available to anyone who may want to access it. The important issue however, is- how this IT system is actually used in carrying out the HR tasks and for what purpose. This relates to the philosophy behind HRIS.

Zuboff (1988) distinguishes between the "**automating''** and **"informating**" capacity of IT. The term "automate'' is associated with the idea of *substitution of human agency by technology* to save physical and mental labour involved in carrying out an activity. From this point of view, an HRIS can be used as a tool to enhance efficiency of HR information management by increasing the speed of decisions, communication of decisions, and also the reduction of overhead costs by task mechanisation and process automation, so that the number of HR specialists required goes down.

Handled with care, this can result in an improved HR service, by offering a faster service and improved quality and consistency of information (Hall and Torrington, 1989). For instance, it is possible that an employee receives a note from the human resource department requesting feedback on the employee's manager. The employee goes to an employee kiosk, identifies him-or herself, uses the one-time-only PIN

number contained in the note, and completes the questionnaire. Similarly an employee uses a phone to request a pension calculation. The automated system asks for various inputs that are made by pressing the telephone buttons. At the end of the interchange, the employee is given a time when a personal pension advisor will call and provide a detailed report of the calculations. The employee later receives the pension calculation at the printer in the employee kiosk, while talking to the counselor.

While the automating potential of IT can improve efficiency in many ways, it is still rooted in the "direct control" mind-set of the traditional organisations. Since employees' activities and levels of productivity can become more "transparent" to the line or HR manager, the system facilitates close supervision and monitoring of tasks and people.

However, to realise the full potential of the HRIS, it is necessary that the system be used as a tool for empowering employees rather than as a tool for stricter control. This requires use of, what Zuboff calls, the "informating" capacity of IT. This is the capacity of IT to integrate large pools of individual data into collective information regarding trends and patterns, which can be easily shared across the boundaries of departments and geographical locations. Whether HRIS will be used as an "informating" tool or not, however, depends on the philosophy of the organisation which determines what information will be made available and to whom.

Adopting an "automating" strategy assumes that the system itself is capable of handling many decisions. Its focus, therefore, is on reducing the input of human operators and eventually to replace them altogether, as far as possible. With respect to HRIS, thus, automating strategy involves computerisation of data management to replace employees as far as possible with machines and to increase the surveillance of employees through real time information. Access to the database in such a case is restricted to the HR specialists and they use the data to monitor and enforce direct control over employees.

Adopting an "informating" strategy involves providing employees with access to information generated from more powerful IT tools, so that they can make improved decisions based on their unique human capacity to interpret and adapt to the particular situation. IT would be used as an enabler for the managers to integrate their objectives with wider corporate objectives and to allow individual employees to access relevant parts of the HRIS to find out for themselves information about their job, training and career structures, remuneration, terms of conditions of employment and organizational plans for employee involvement. This way, the employees can become more "empowered", having greater control over their work and work-lives.

However, in order to act as an effective stimulus towards the introduction and maintenance of a culture of empowerment, HRIS system would require several compatible information and communication technologies. The HRIS would need to be designed to operate beyond the usual functional HR department boundaries, by extending access to the line management and individual employees. Sometimes, it may even have to go beyond the organisational boundaries, for example, in those cases where some of the HR activities have been outsourced.

16.9 PRE-REQUISITES FOR INTRODUCING "INFORMATING" HRIS

Generally three types of conditions must prevail to allow the use of HRIS as a tool for empowerment. These are : The Corporate Climate, An Enlightened Human Resource Function, and The Technology Platform. All three must be in place or just around the corner before the new HRIS is pursued.

1. The Corporate Climate

The corporate culture must be conducive to employee empowerment and, thereby, to a flatter organisation structure. Introduction of transformational HRIS in large bureaucratic organisations, therefore, requires some degree of change towards, downsizing, team work, procedural review and reduction.

2. An Enlightened Human Resource Function

The human resource function must be enlightened and ready to serve. Where HR functionaries view themselves as controllers and auditors rather than as service providers and enablers, HRIS cannot be introduced as an empowering tool. The fear of marginalization will trigger off resistance from the HR function itself and if thrust upon, will lead to alienation among the functionaries.

3. The Technology Platform

The technology platform available or planned for, must be capable of allowing the required connectivity. This includes the networks to move the data as well as employee PCs and kiosks for data input and access. To be effective, the system has to continuously reach every employee through multiple channels.

Activity E

Your organisation proposes to establish a wholly separate information system for Human Resource Planning purposes only. As personal manager, you are required to prepare a note setting out several uses and applications of computerized personnel records system to be used for purposes of staff orientation in Human Resource Information System Concepts.

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16.10 HRIS LEADERSHIP

According to Joseph Collette (2001) the traditional reactive staff role of HRIS and HR leaders needs to become more proactive and strategic in nature, if "informating" HRIS is to be successful. Consequently, those leading the HRIS initiative must have some key competencies like, strategic vision, hands on technical skills, HR business acumen, the ability to influence and negotiate, team leadership ability, and project management skills.

Vision: It is essential for today's HRIS leaders to have the vision to see the big picture and be forward thinking. Having vision means being able to take existing technologies and processes and create a blue print of how they will fit together. In creating the blue print, one must strongly consider how the blue print will contribute to achieving business objectives and goals, thereby making the HR organization more strategic and building competitive advantage. Vision is the first requirement for implementing technologies that will fit into the overall business plan and be consistent with long term goals.

Technical Skills: In order to determine and help establish the vision, a thorough understanding of the technical landscape is required. It is critical to understand which technologies to apply and which ones not to. Sometimes the best technical decisions made are the ones wherein one choses *not* to undertake or implement a particular technology. Keeping up and staying current with available technologies to apply to

different situations is important in being able to make solid recommendations. The better informed an HRIS leader is, the more alternatives he/she will be able to provide when creating solutions for the business.

Business Acumen: Understanding the requirements of the business is essential for delivering solutions that add value. In order to create a vision that supports the goals of the HR organization, HR must speak the language of the business as well as speak the technical jargon. The role of HRIS is technical in nature but it's primary purpose is to provide support for the business objectives through HR information management.

Ability to Influence and Negotiate: Successful technology implementations require the commitment of resources, financial and human. Securing these resources requires the support of senior management. Also, with new technology, usually comes a new process. Process change needs to have support from the highest levels of the organization. In addition to the ability to influence, there is also usually a need to negotiate for the resources required. HRIS leaders have to be respected within management circles in order to successfully influence and negotiate for required resources.

Team Leadership: The process of organizing and implementing technology initiatives should involve cross-functional teams of professionals with various backgrounds and levels. Managing this team requires skill to motivate and inspire a diverse group of people. Also, since the HRIS leader can't do it all, a strong team must be built and nurtured in order to facilitate the successful completion of a variety of tasks, both functional and technical in nature. It is the role of the HRIS leader to promote the group's cohesiveness and resolve any personnel conflicts that may arise.

Project Management: In the end, it's project management skills that are required to implement and deliver on the vision, ideas and initiatives. The HRIS leader should be effective in organizing, directing and planning the projects. This includes mobilizing the required resources, setting timelines and milestones, monitoring and reporting progress to senior management and project stakeholders, and being able to focus on key individual project components as needed. As with any project lifecycle, the HRIS leader must make effective use of continuous feedback and evaluation methodologies in order to properly examine and adjust project initiatives to ever changing environments and business requirements.

16.11 SUMMARY

Information is the raw material of planning. A quality planning effort cannot be accomplished without sound and adequate information. Information is provided in an organisation by an inter-related set of procedures and process known as an information system.

An information system especially developed for the human resource management function is called an HRIS – a human resource information system.

There are certain basic requirements upto which the information must conform.

At the macro level, although there do exist institutional arrangements for providing manpower data, but the need for improving the effectiveness of human resource planning and policy has been articulated at several fora.

At the micro level the importance of having a well-defined and detached manpower information system within the organisation has been emphasised. The point has been made that at the enterprise level there is need for a comprehensive human resource information system. In this context, the deficiencies and shortcomings of manual

human resource information system have been noted in order to develop a clearer perspective for going in for a computerised personnel record system. Several advantages and applications manually doing information system and of using computerised information system have been brought into focus. Those of you who may be interested in the design process of a computerised human resource information would be well advised to read further the subject itself being so specialised in nature.

16.12 SELF-ASSESSMENT QUESTIONS

1. Explain the significance of Information System in Human Resource Management.

2. Discuss the criticality of systemising information for effective planning.

3. Explain the various approaches to manageing information at the macro and micro level.

4. Explain the advantages of computerising human resources information system.

16.13 FURTHER READINGS

HRFocus- May 2002: *What's in store for HR information systems?*

HRFocus- May 2003: *What Are the Top HRIS Issues in 2003?*

http://www.emerald-library.com: *Effecting HRM-style practices through an integrated human resource information system*

Kirstie S. Ball (2003) : *The use of human resource information systems: a survey; Birmingham Business School, University of Birmingham;* **http://www.emerald-library.com**

Cohen, S. (1998), "Knowledge Management's Killer Application", Training and Development, Vol. 52 No. 1

Davenport, T.H. (1998), "Putting the Enterprise into the Enterprise System" *Harvard Business Review, July/August*

Davenport, T.H. and Short, J.E. (1990), "The New Industrial Engineering: Information Technology and Business Process Redesign" *Sloan Management Review. Vol. 31 No. 4*

Hall, L. and Torrington, D. (1989), "How Personnel Managers come to Terms with the Computer" *Personnel Review, Vol. 18 No. 6*

Broderick, R. and Boudreau, J.W. (1992), "Human Resource Management, Information Technology and the Competitive Edge" *Academy of Management Executive, Vol. 6 No. 2*

Carolin, B. and Evans, A. (1988), "Computers as a Strategic Tool" *Personnel Management, Vol. 20 No. 7*

Zuboff, S. (1988): *In the Age of the Smart Machine.* Oxford: Heinemann.

Collette, Joseph (2001): HRIS Leadership; IHRIM, Winter, New England Chapter's News Letter; www.ihrim-ne.org/documents/leaders.