Module 4

Job Analysis, Job Design and HRIS

Overview

This module clarifies the contributions made by job analysis to an organisation and its effect on employment planning. Job analysis is a necessary part of HRM and in many respects is the foundation upon which all other HRM activities must be constructed. Throughout this module, you will learn various ways in which jobs can be designed and learn how to prepare the sample job description. At the last portion of this module, you will learn why HRIS plays an important role in managing HR data and functions. The primary purpose of an HRIS is to assist all functional managers in decision-making. Information technologies have created opportunities for HR to reduce administrative costs and to engage in a strategic role in achieving organisational goals.

Outcomes

Upon completion of this module you will be able to:

- *discuss* the role job analysis (JA) plays and its effect on employment planning.
- *show* competency with the tools and techniques of job analysis.
- *name* various ways in which jobs can be designed and propose the best way for the organisation in which you work.
- *prepare* job descriptions.
- *determine* how an HRIS facilitates various functions of HR.
- *identify* the criteria used to evaluate an HRIS.
- *describe* what constitutes an HRIS integrated database..

Terminology

Terminology

Critical incident technique:	Keeping a record of uncommonly good or undesirable examples of an employee's work related behaviour.
Diary log:	A daily list made by workers about every activity performed.
Functional job analysis:	A method for classifying jobs (using instruction, reasoning, judgement mathematical and verbal

	ability).
Human resource information System (HRIS):	HRIS is an IT system used to gather, store, control, analyse and retrieve data to provide timely and accurate reports on HRM in an organisation.
Job analysis:	The procedure (systematic process) for determining the duties and skill requirements of a job and assign the right person for the assigned job.
Job classification:	Methods of classifying jobs into groups.
Job description:	A formal document profiling jobs (such as duties, responsibilities, reporting relationships, working conditions, and so on).
Job design:	A process to modify a job to suit changing circumstances. Job design can be used to enlarge or enrich the job to earn better responsibilities and remunerations.
Job evaluation:	A systematic comparison to determine the worth of one job to another.
Job specification:	A formal document that profile a person to do the job in terms of knowledge, skills and competency (such educational requirement or personality).
Position analysis questionnaire (PAQ):	A questionnaire used to collect quantifiable data concerning duties and tasks of a job.

What is job analysis (JA)?

Gatewood and Feild (1994) observed that there are probably as many different definitions of job analysis as there are writings on the topic. They suggested a definition that views job analysis as "a purposeful, systematic process for collecting information on the important work-related aspects of a job". Others have characterised job analysis as the collection and analysis of just about any type of job-related information by almost any method for any purpose.

For you to grasp the essentials of JA, you should adopt a definition that views JA as a systematic process for collecting, analysing and interpreting job-related information.

Part of the problem in defining JA stems from a difficulty we have with the term "job". Most of us seem to mean something fairly specific when we talk about a job. Ordinarily, we mean the job that we do on a day-to-day basis – the thing that gives us the pay cheque. Experts in HRM do not use the term in the same way.

Definition of job analysis

Job analysis is the aspect of employment planning which is concerned with the study of the jobs in an enterprise. In particular, job analysis and the resultant job specifications clarify the following aspects of each job: the work activities; the tools, equipment and work aids used; job-related tangibles and intangibles (such as materials used, products made and services rendered); work performance; job context (working conditions); and candidate requirements (such as knowledge, skills, experience and personal attributes).

In Job analysis (JA), the following information is gathered (Glueck, 1978):

1. Work activities:
    - Work activities and processes
    - Activity records
    - Procedures used
    - Personal responsibility.
2. Worker-oriented activities:
    - Human behaviour such as physical actions and communicating on the job
    - Elemental motions for methods analysis
    - Personal job demands such as energy expenditure.
3. Machines, tools, equipment and work aids used
4. Job-related tangibles and intangibles:
    - Knowledge dealt with or applied (as in Accounting)
    - Materials processed
    - Products made or services performed.
5. Work performance (Note: Not all JA systems develop the work performance aspects):
    - Error analysis
    - Work standards.
    - Work measurements such as time taken for a task
6. Job context:
    - Work schedule
    - Financial and non-financial incentives
    - Physical working conditions
    - Organisational and social contexts.
7. Personnel requirements for the job:
    - Personal attributes such as personality and interests
    - Education and training required
    - Work experience.

This information can be in the form of qualitative, verbal, narrative descriptions or quantitative measurements (such as error rates per unit of time or noise level) of each item.

Creating a job

Most jobs are allocated on a fairly crude basis. The manager of a unit sees a number of tasks that need to be done and allocates them to individuals on the strength of his/her own judgement. A new job may well be discussed with his/her superior manager and possibly with someone from the personnel department, but invariably it is the unit manager's perception of the need for, and the nature of, the post that exerts the greatest influence on the decision to add the job to the structure. As the requirements for tasks change, jobs also change. This happens mainly in response to the demands of the immediate management concerned. Only certain kinds of jobs are created in a completely rational way. These are the jobs composed of routine, easily measurable tasks to be found in many production and clerical departments.

Most other jobs, and certainly those requiring a high degree of judgement or discretion, cannot be created in a once-and-for-all manner. Such jobs have to develop and grow as they are performed. Naturally, over a period of time, a job can change considerably without anyone really noticing it. Thus, when a review of the organisation takes place, the managers concerned have to take steps to redefine the job in the light of the changed circumstances. This is where JA comes in.

How JA is carried out

JA can use one or many of the following seven methods (Glueck, 1978):

1. Examination of previous job analyses or job descriptions on the position and/or other records.
2. Observation of the job and the job occupant.
3. Interviewing the job occupant and/or supervision by a single analyst or a group of them.
4. Structured or open-ended questionnaires to be completed by job occupants and/or supervisors.
5. Self-recording of data and observations in a log or diary kept by the job occupant.
6. Recording of job activities on film or with audio means.
7. Analysing equipment design information from blueprints and design data.

Methods 1, 4 and 7 (listed above) are the quickest but may develop less reliable data than other methods. Methods 2, 3, 5 and 6 are more accurate but more costly. As far as observation and other data-gathering techniques are concerned, it has been found that proper work-sampling techniques add to the quality of the data's reliability and validity. The most advanced job analysis work is being done by the U.S. Employment & Administration (ETA) and the Personnel Division of the Air Force Human Resources Lab.

Why Conduct JA?

Ghorpade and Atchison (1980, pp. 134-144) describe JA as a fundamental starting point for HR management. This description of JA arises due to employers' interest to ensure that their employees are working efficiently in the face of stiff competition from local as well as global competition. As technology has influenced jobs, employers are continuously on the lookout for employees with requisite knowledge, skills and abilities to perform adequately. The main reason why JA should be carried out in organisations is that it provides information that can help employers locate and identify these employees.

JA information can be used in each phase of the human resource management cycle – job design, job classification and evaluation, recruitment, selection, training, performance appraisal and performance management. You should now be able to understand the importance of JA to the HR management process.

Major uses of JA information

JA provides a range of information in regard to jobs in organisations. The information derived includes the following: job description, job specification, job classification, job evaluation, job design, and performance appraisal. Let us take each of these and discuss the use of each in HRM.

Job description

A job description is an account of the duties and activities associated with a particular job. A job description is prepared to identify a job, define it within established limits and describe its content. It is typically a one-page or two-page summary of the basic tasks performed on a job and constitutes the role expectations relative to that job. Job descriptions have a number of important uses including the development of job specifications, workforce planning and recruitment, orientation of new employees as well as the development of performance appraisal systems.

Job specification

A job specification describes the characteristics required to perform the job activities outlined in the job description. They focus on the persons performing the job rather than on the work itself. A job specification may also include information on the knowledge, skills and abilities required to perform the job as well as such items as the education, experience and physical attributes needed for successful accomplishment of job tasks. Job specifications are the means by which HRM specialists identify persons with the skills they seek and help focus efforts to recruit them.

Job classification and job evaluation

Often, HRM specialists mention both job classification and job evaluation in the same breath. You must clearly understand the difference between the two. Classification means grouping similar positions into job classes and grouping job classes into job families. Among many reasons for

grouping jobs, one is simplicity. Grouping positions into job classifications allows HRM specialists to deal with personnel functions at a more general level.

On the other hand, the process of assigning a value (and a salary) to a given job classification is called job evaluation. Two basic approaches to job evaluation are commonly adopted. One involves comparing an organisation's pay practices to those of other organisations. This approach is often referred to as the market pricing method. The second approach involves rating jobs on the basis of factors that indicate the relative worth of different jobs within the organisation. This approach has been called the factor comparison or point factor method. Both methods rely heavily on job analysis data.

Job design

Another use for job analysis data concerns the design of jobs. From the organisation's viewpoint, jobs as performed must lead to efficient operations, quality products and well-maintained equipment. From the workers' viewpoint, jobs must be meaningful and challenging, provide feedback on performance, and call on their decision-making skills (Davis & Wacker, 1988). The aim of HRM specialists is to design jobs that attempt to meet the needs of both employers and employees. Efficient job design allows organisations to take full advantage of technological breakthroughs without alienating the workers affected by change. Restructuring jobs allows companies to retain skilled workers while enhancing output.

Performance appraisal

Lastly, information generated from job analysis is used to prepare instruments for performance appraisal which are used to evaluate employee performance. Job analysis identifies activities that should be assessed, knowledge that should be appraised as well as organisational issues (such as tardiness and absenteeism) that should be evaluated. Job analysis information can then determine the weights assigned to particular aspects of the job in order of importance.

If used properly, job analysis ensures that the appraisal instrument assesses what is actually being done on the job. A good match between the job and the performance appraisal assessment should not only improve organisational efficiency but should also enhance employee perceptions of fairness in the appraisal system. Performance appraisals not based on solid job analysis information risk being irrelevant to job performance and consequently de-motivating employees.

Benefits of JA

As much as there are benefits towards management (especially towards line management), there are also benefits of job analysis to individuals. These are:

- The individual job holder obtains a clear idea of his/her main responsibilities.

- It provides the individual with a basis to argue for changes or improvements in his/her job (for example, job re-design).
- It provides the individual with relevant information in respect of an appraisal he/she may have.
- It may provide the individual with an opportunity to participate in setting his/her own short-term targets or objectives.

Collecting job data

JA involves collecting data about the job; it is a systematic process for collecting, analysing and interpreting job-related information. Information involving job content, work method and approach as well as expected outcome is collected and analysed. To make JA more informative, the knowledge, skills and abilities that workers require to perform their jobs may also be identified and analysed. Those who perform these JA tasks are called job analysts. Job analysts need special training and it is usually the internal HR specialists who perform these tasks with some training.

In conducting a comprehensive job survey, a job analyst needs to explore many different sources such as technical manuals, organisation studies and training materials. They also have to consult job incumbents, supervisors and technical specialists who provide information about jobs being studied.

Data-collecting techniques

There are numerous ways data could be collected. However, HR specialists adopt the method depending on the circumstances; jobs with substantial physical demands require different data collection methods while those requiring mental skills demand some other technique. Some jobs require extensive documentation while some others do not. The determining factor is the job characteristics. In general, JA methods require the following data collection techniques: background research, performance of the job, site observations, individual interviews, group interviews and job analysis questionnaires. It would be useful for you to look at these in a little more detail.

Background research: It should be the first step in any JA process and involves a review of job-relevant documents. Any previous job analyses or studies of the job under review could be examined. In addition, it would be helpful to look up certain standard literature on jobs such as Dictionary of Occupational Titles (DOT), Journal of Applied Psychology and Personal Psychology. Familiarity with past research helps the analyst choose the most appropriate data-collecting technique. The review of professional literature should be followed by an examination of existing job descriptions, technical manuals, training materials, organisation charts and previous job analyses.

Job performance: Performing the job may be the best way to collect data especially when the job involves physical operations or psychomotor skills. For instance, jobs involving equipment operation that demands hand-eye coordination may actually require performing the task for an

analyst to fully understand the nature of the job. In practice, this may require a lot of time to train the analyst to perform the job. Therefore, it may be more efficient to rely on the observation or interview technique.

Site observations: Visiting job sites will help the analyst to observe the specifics of task performance. Site observations will help the analyst further to familiarise him/herself with materials and equipment used for the performance of a job and the conditions under which the job has to be performed. However, an analyst should be careful so as not to be obtrusive and should explain the purpose of his/her visit to the job performer. You would appreciate that this method is not appropriate for jobs involving mental tasks such as jobs of upper level managers.

Individual interviews: Interviewing job incumbents is often done in combination with observation. Interviews are probably the technique used most widely in collecting data for job analysis. They permit the job analyst to talk face-to-face with job incumbents. The job incumbent too can ask questions of the job analyst and this interview serves as an opportunity for the analyst to explain how the knowledge and information gained from the job analysis will be used. Such interviews can be structured or unstructured. Interviews may be conducted concurrently with the site visit.

Group interviews: In this technique, subject matter experts are convened to discuss the job in question. Typically, job incumbents and supervisors act as experts as they understand the finer points of the jobs. As with individual interviews, the group interviews could also be structured or unstructured. Job analysts should take precautions to ensure that the sessions produce the necessary information.

Questionnaires: This is the least costly method for collecting information. It is an effective way to collect a large amount of information in a short time. A questionnaire presents a list of items that are assumed to be job-related and asks subject matter specialists to rate each item on its relevance to the job under study. It generally includes specific questions about the job, job requirements, working conditions and equipment. A less-structured, more open-ended approach would be to ask job incumbents to describe their job in their own terms.

The format and degree of structure that a questionnaire should have are debatable issues. Job analysts have their own personal preferences. You may use a commercially available questionnaire or use one that is tailored to fit the job under review. It is here that information derived from background research, job performance, site observations, individual interviews and group interviews may be very useful.

Here are a few hints that will make the questionnaire easier to use (Ivancevich, 1998, p. 178).

- **Keep it as short as possible** – people do not generally like to complete forms.

- **Explain what the questionnaire is being used for** – people want to know why it must be completed. Employees want to know how their responses would be used.
- **Keep it simple** – do not try to impress people with technical language. Use the simplest language to make a point or ask a question.
- **Test the questionnaire before using it** – in order to improve the questionnaire, ask some job incumbents to complete it and to comment on its features. This test will permit the analyst to modify the format before using the questionnaire in its final form.

Job incumbent diary or log: The diary or log is a record by job incumbents of job duties, frequency of the duties and when the duties are accomplished. Unfortunately, most individuals may not be disciplined enough to keep a diary or a log containing this kind of information. If such a diary or log is kept up-to-date, it can provide good information. This method provides valuable information regarding jobs that are difficult to observe – such as those of engineers, scientists and senior executives.

JA methods

Although any of these basic methods can be used either alone or in combination, there is no general agreement about one best method which will yield the most valuable information. In the absence of a strong theoretical reason why one method should be superior to another, most organisations base their choice on current needs. The choice of the method is determined by circumstances such as the purpose of the analysis, time and budget constraints.

Job analysts commonly combine methods of data collection to obtain a true and full picture of the job under study. Most approaches to job analysis mix and match various job data sources and data collection techniques. Since these methods seem to have different strengths and weaknesses, many organisations are turning to a multi-method job analysis approach (Schneider and Konz 1989, 51-63). In this approach, the job analyst first conducts interviews with incumbents and supervisors parallel to on-site observation. Next, a task survey based on expert judgements is constructed and administered. Finally, a statistical analysis of the responses to the task survey is carried out to assess their consistency and to identify any systematic variation in them. However, this approach, which is comprehensive, will be relatively expensive and time-consuming. Nevertheless, it has one distinct advantage: the quality of information derived is strongly endorsed by the courts in cases that rely on job analysis information.

The job analysis methods presented in this unit have systematic ways of formally applying data collection techniques. “Formal” means that the data collection procedure and the organisation of the end product are standardised. For instance, the job analyst is consistent in the questions asked of different subject matter experts in the individual interview. Further, the data that emerges is generally structured into precise job

statements that would be understandable to someone unfamiliar with the job. “Systematic” means that data collection techniques proceed in a set pattern. For example, several current approaches to job analysis progress from background research to individual interviews or observation; group interviews; and ultimately, questionnaire administration.

Since a variety of systems have evolved, this course presents an approach most commonly encountered – the distinction between work-oriented job analysis and worker-oriented job analysis methods.

1. **Work-oriented job analysis** focuses on a description of the work activities performed on a job. Emphasis is on what is accomplished and this includes a description of the tasks undertaken and the products or outcomes of those tasks. For example, a work-oriented analysis of a clerical or secretarial position may provide observable tasks such as “prepares letters”, “types letters” or “files documents”. This approach is also known by other names such as “task-oriented and activity-based job analysis”.
2. **Worker-oriented job analysis** examines the attributes or characteristics a worker must possess to perform certain job tasks. The primary products of work-oriented methods are the knowledge, skills and attitudes (KSAs) and other characteristics required for effective job performance. A worker-oriented analysis of a secretarial position might generate worker characteristics such as “skill in typing” or “knowledge of the organisation’s filing system”. Until recently, worker-oriented approaches dominated the field.

Let us examine each approach in a bit more detail before going on to consider their relative pros and cons.

Work-oriented approaches

There are two methods described under this. They are (1) functional job analysis and (2) critical incidents technique. The following presents details about each of these.

Functional job analysis

Functional job analysis (FJA) is the cumulative result of approximately 50 years of research on analysing and describing jobs. It provides an approach that takes into consideration the organisation, its people and its work. The main focus of the FJA is to create a common language to accurately describe a large number of jobs in ways that can be reliably reproduced by other experts.

FJA assumes that jobs can be described in terms of three basic relationships that the incumbent has with his/her work. In order to complete the tasks involved in a job, the employee must physically relate to things, use mental resources to process data, and interact with people. The extent to which a job involves each of these components forms the basis for a job description prepared with FJA.

The FJA approach uses three data collection techniques that include a review by trained analysts of background and reference materials, interviews with employees and their supervisors as well as on-site observations of employees. From this data collection, the purpose, goals and objectives of the organisation are identified. Once analysts have gained an understanding of the organisation's work system, they develop task statements in consultation with subject matter experts.

To ensure validity and reliability, analysts edit the task statements with the guidance of incumbents, supervisors and other subject matter experts. From the task statements, worker functions are identified, primarily through inferences made by analysts. Finally, FJA attempts to place the individual job clearly in the context of the whole organisation by focusing on the results of task performance and the way those results contribute to the attainment of organisational goals and objectives.

The two most prominent features of FJA are its formal task statements and worker function scales. FJA's task statements include information on a variety of factors. The second feature – worker function scales – is probably the most widely applied of the two because of its adoption in the Dictionary of Occupational Titles (DOT) published by the U.S. Department of Labour. Current versions of the DOT use the basic descriptive language of FJA to describe more than 20,000 jobs. The DOT classifies these jobs by means of a nine-digit code. If you are interested in a general description of a job, the DOT serves as a good starting point.

The worker function scales identify differing levels of complexity in three areas of task performance: things, data and people. Tasks are assessed as to the degree of complexity involved in each of the three areas. Using behavioural terms, each of these relationships with work can be organised along a continuum of complexity (lowest to highest).

FJA is an important job analysis system in its own right. However, it is also important for its influence on subsequent systems. One advantage of FJA is that each job has a quantitative score. Thus, jobs can be arranged for compensation or other HRM purposes because jobs with similar ratings are assumed to be similar. If you are interested in learning more about this method, refer to *Benchmark Tasks for Job Analysis: A Guide for Functional Job Analysis (FJA) Scales*.

Critical incidents technique

Developed by John Flanagan (1954), the critical incidents technique (CIT) for job analysis relies on information from supervisors and others who are in a position to observe job behaviour. Personnel specialists and operating managers (supervisors) prepare lists of statements of very effective behaviour and very ineffective behaviour for an employee. These are the critical incidents. A job analyst would ask supervisors to identify and classify those behaviours (critical incidents) that result in effective or ineffective job performance. In this technique, examples of particularly successful and unsuccessful job performance are used as guides for future performance. Critical incidents represent a high level of behavioural detail, focusing on the action of the worker, the context in

which the behaviour occurs, and the consequences of that behaviour. CIT is widely applied in performance appraisal because of its specificity.

Other suggested uses for the technique include training and job design. One very interesting development noted by Gatewood and Feild (1994) is that CIT can prove useful in the development of structured oral interviews. They recommend conducting a traditional selection-oriented job analysis as a first step in determining interview content. Individual interview questions are then generated using CIT. A major advantage of this approach is the creation of more objective rating scales through the use of critical incidents as anchors for illustrating effective and ineffective responses.

Worker-oriented approaches

Under this category, three methods will be discussed – position analysis questionnaire, job element method and threshold traits analysis.

Position analysis questionnaire: A structured questionnaire for quantitatively assessing jobs was developed by researchers at Purdue University. It is called the position analysis questionnaire (PAQ). The PAQ contains 194 items that are organised into six major categories:

1. **Information input** – Where and how does the job incumbent get job information?
2. **Mental processes** – What reasoning, decision-making and planning processes are used to perform the job?
3. **Work output** – What physical activities and tools are used to perform the job?
4. **Job context** – In what physical and social context is the job performed?
5. **Relationship with other people (interpersonal activities)** – What relationships with others are required to perform the job?
6. **Other job characteristics** – What activities, conditions or characteristics other than those described here in points 1-5 are relevant?

Seven job dimensions are contained in each of the above points. Computer programs are available for scoring PAQ ratings on the basis of these seven dimensions:

1. Decision making
2. Communication
3. Social responsibilities
4. Performing skilled activities
5. Being physically active
6. Operating vehicles or equipment
7. Processing information.

These scores permit the development of profiles for jobs analysed and the comparison of jobs.

The PAQ is perhaps the most widely used and researched job analysis approach. The PAQ is a very structured job analysis questionnaire. The available evidence indicates that it can be an effective technique for a variety of intended purposes. It is reliable in that there is little variance among job analysts' ratings of the same type of jobs. However, a major problem is its length. It thus requires time and patience to complete. In terms of content, some research suggests that the PAQ is capable only of measuring job stereotypes. If this is true, then the PAQ may be providing little more than common knowledge about a job (Ivancevich, 1998).

Job element method

The job element method represents a unique approach to job analysis; it focuses on worker characteristics rather than on job activities. The job element method identifies skills, knowledge, inclinations and other characteristics of employees in a particular job classification. This method typically relies not on job analysts to gather information but rather on a group of approximately six job incumbents, supervisors, or both who are familiar enough with the job under study to be able to easily recognise the characteristics of superior workers (Gatewood & Field, 1989). These factors are organised into the following six broad categories of job elements:

1. Knowledge, such as knowledge of accounting principles.
2. A skill, such as skill with woodworking tools.
3. An ability, such as ability to manage a programme.
4. A willingness, such as willingness to do simple tasks repetitively.
5. An interest, such as an interest in learning new techniques.
6. A personal characteristic, such as reliability or dependability.

Once the job elements have been identified, the subject matter experts generate a corresponding list of sub-elements for each element. Subject matter experts then rate the job elements and sub-elements along a series of dimensions that are designed to measure the correlation between success on the job and possession of each job element. Through this correlation, the job element method attempts to identify the characteristics that will probably result in superior job performance if they are possessed by an individual.

Threshold traits analysis

The threshold traits analysis system (TTAS) differs from other worker-oriented approaches in that it hypothesises that there are thirty-three relatively enduring traits related to the performance of a large number of different jobs. These traits are divided into two broad classes: ability and attitude. Ability-oriented traits are considered "can do" factors whereas attitudinal traits are "willing to do" factors. Within TTAS, traits are assessed for six characteristics:

1. **Level** – Refers to a trait's complexity.
2. **Practicality** – Relates to the estimated proportion of job applicants thought to possess a given trait.
3. **Weight** – An index of the impact of a particular trait on overall job performance.
4. **Degree** – Represents a four-grade assessment (ranging from unacceptable to superior) of a person's possession of a trait.
5. **Criticality** – Refers to the relationship between possession of a trait and overall job performance.
6. **Availability** – Describes the supply/demand ratio of each trait level in the employer's labour market.

In TTAS, the heart of the job analysis is the evaluation of traits. This technique demands that incumbents, supervisors or other subject matter experts rate the relevance, level and practicality of each of the thirty-three traits. These ratings are analysed to produce a basic functional description of the job. The functional job description then serves as the foundation for selection, training, performance evaluation and compensation.

Evaluation of traditional methods

Several factors have given rise to an increased preference for multi-method job analysis approaches. Some of the factors include: level of task specificity and communicability. Research on job analysis in this realm has been restricted largely to job analysts' evaluation of method effectiveness. Unfortunately, research has not yet answered the question of which job analysis system is the best. You may note that legal considerations would seem to favour multi-method approaches. Also, several researchers have advanced conceptual and measurement-oriented arguments for adopting multi-method approaches to job analysis.

Recent trends in job analysis

In the United States, with the Americans with Disabilities Act coming into force, HR managers are finding it more difficult to consider certain physical ability requirements (such as normal vision and hearing) long taken for granted as essential. Such requirements can be applied only if an employer can provide documentary proof that they are essential for an employee to perform essential job functions. It must be clear to you that this is no easy task. In fact, the identification of the essential functions themselves must be carried out through task-oriented or multi-method job analysis. The linkage between essential functions and requisite knowledge, skills, mental abilities and physical abilities can best be established through a multi-method job analysis process. Obviously, job analysis methods that do not capture information salient to the essentiality of job functions as well as underlying mental and physical abilities would fail to protect employers from lawsuits.

A second recent trend in job analysis methodology is a move towards increased specificity in descriptions of job tasks and of the knowledge, skills and abilities (KSAs) needed on a job as a means of ensuring content

validity in testing. Job analysis systems that emphasise increased specificity and take account of sensory and psychomotor abilities would seem to meet the job analysis needs of most organisations in the current regulatory and legal environment. New approaches introduced in the coming years would incorporate essentials of these two trends.

Job design

Once a thorough JA has been conducted and there are high-quality job descriptions and job specifications available, an organisation can use this information to design or re-design jobs. This information is very useful for structuring job elements, duties and tasks in a manner that will help to achieve optimal performance and satisfaction.

There is however no one best way to design a job. Different situations call for different arrangements of job characteristics. In addition, approaches to job design place different emphases on performance and satisfaction as desired outcomes. In other words, certain methods of job design primarily focus on improving performance while others concentrate on satisfaction. Thus, you will see that no one approach will fully satisfy all of the goals of a manager. It should be evident to you that job design will involve making trade-offs based on the more critical needs of the organisation.

Definition

Job design is the personnel or engineering activity of specifying the contents of the job, the tools and the techniques to be used, the surroundings of the work as well as the relationship of one job to other jobs. In other words, the aspect of personnel or industrial engineering that directly affects the degree of specialisation of the job and the psychological dimensions of the task is called job design.

Human factors engineering (ergonomics) and industrial psychology are concerned with whatever affects job design. They also study how human limitations affect efficiency. For instance, it has been found that fatigue can affect output: work speed and accuracy decrease as the work period increases. Another finding is that mental fatigue, which affects performance, is a result of certain kinds of work being performed at length. These are factors studied by engineers in their design or re-design of jobs.

HR managers and operating managers are involved in other kinds of job design. For example, they help determine the amount of variety in the job as well as the amount of responsibility and autonomy. Both theory and research indicate that this aspect of job design has an impact on motivation and performance.

There are four approaches to those aspects of job design that affect the degree of specialisation and the psychological dimensions of work. These are work simplification, job rotation, job enlargement and job enrichment.

Work simplification

This job design refers to specialised jobs. In the work simplification approach, the complete job (such as making a car) is broken down into small sub-parts which usually consist of a few operations. This is done because:

- Less well-trained and less well-paid employees can do these jobs.
- More workers are available for hire since there are more unskilled workers than skilled workers.
- By repeating the same operations many times, the employee gets better at it.
- Many small jobs can be performed simultaneously so that the complete operation can be done more quickly.

Job rotation

In job rotation, employees take turns at several work-simplified jobs. Job rotation provides more flexible work assignments, makes it easier to staff the more unpleasant jobs (or heavier jobs) and reduces the boredom and monotony of work-simplified jobs.

Job enlargement

This is the opposite of work simplification. If the work-simplified job consists of three operations, the job enlargement approach expands an assignment until a meaningful sub-unit (or sub-process) is completed by one person. The theory is that whole jobs reduce boredom (through more variety) and give more meaning to work. Job enlargement attempts to increase satisfaction by giving employees a greater variety of things to do. The expansion of the work is however considered horizontal since the employees are not given more responsibility or authority in decision making. Rather, they are merely allowed to do a greater number of tasks. Thus, an enlarged job is not as specialised or routine as a job designed according to scientific management but it may not be any more meaningful.

Job enrichment

Job enrichment increases the responsibility of the employees and gives them more autonomy and freedom of control. Rather than merely increasing the variety of tasks performed by an employee, job enrichment tries to design jobs in ways that help incumbents satisfy their needs for growth, recognition and responsibility. Thus, enrichment differs from enlargement because the job is expanded vertically; employees are given responsibility that might have previously been part of a supervisor's job.

Obviously, there can be a combination of several of these strategies. For example, a likely combination is job enrichment and job enlargement.

Perspectives on the design of work

Another approach to design of work involves four major categories:

1. The perceptual-motor approach
2. The biological approach
3. The mechanistic approach
4. The motivational approach.

Both the perceptual-motor approach and the biological approach have their roots in human factors engineering. Their major focus is on the integration of human systems and machine systems. Thus, their emphasis is on equipment design and the proper match between machines and operators.

The other two approaches clearly highlight the potential trade-offs that must frequently be made by organisations with regard to job design. They are also the two that have received the most attention in management literature. Taylor's scientific management and the motivational approach by job enrichment best exemplify the mechanistic approach.

Scientific management and the mechanistic approach

Job design was a central issue in Frederick Taylor's model of scientific management. His use of job design shows how certain perspectives focus more heavily on productivity than on satisfaction.

Taylor's work emphasised the structuring of jobs – work to be broken down into simple, repetitive tasks. Once learnt, these tasks could be done quickly and efficiently. Introduced in the early 1900s, many of the principles of scientific management are still relevant today although current methods of JA criticise the use of repetitive-task structure:

- Work should be studied scientifically (This is what JA attempts to do).
- Work should be arranged so that workers can be efficient.
- Employees selected for work should be matched to the demands of their respective jobs (Job descriptions and job specifications used in recruitment and selection should achieve this).
- Employees should be trained to perform the job.
- Monetary compensation should be tied directly to performance and should be used to reward the performance of employees.

Why do many managers find this approach appealing? It is because these kinds of recommendations lead to improving organisational performance. However, research has found that repetitive, highly specialised work can lead to dissatisfaction among employees. There are also situations where gains in efficiency that scientific management offers can be offset by losses in satisfaction and higher levels of absenteeism and turnover.

Early strategies for overcoming some of the problems associated with jobs designed according to scientific management focused on job enlargement.

Job enrichment as a motivational approach

The notion of satisfying employees' needs as a way of designing jobs comes from Frederic Herzberg's two-factor theory of motivation (1959). This theory tries to find out what people want from work. According to this theory, two sets of factors influence work behaviour: dissatisfiers (hygiene factors) and satisfiers (motivators). Hygiene factors relate to the context of jobs and include pay, working conditions, supervision, and so on. They do not motivate.

Motivators include achievement, recognition, responsibility, advancement, growth and the work itself. Motivators become operational only when dissatisfiers are removed. His basic idea was that employees will be motivated by jobs that enhance their feelings of self-worth.

Although there are many different approaches to job enrichment, the job characteristics model is one of the most widely publicised (Hackman & Oldham, 1976, pp. 250-279). The model proposes that a job must possess certain "core job dimensions" for it to lead to desired outcomes. These are:

1. **Skill variety** – The degree to which a job requires a variety of different activities in carrying out the work which involves the use of a number of an individual's skills and talents.
2. **Task identity** – The degree to which a job requires completion of a whole and identifiable piece of work – that is, doing a job from beginning to end with a visible outcome.
3. **Task significance** – The degree to which a job has substantial impact on the lives or work of other people whether they are in the immediate organisation or in the external environment.
4. **Autonomy** – The degree to which a job provides substantial freedom, independence and discretion to the individual in scheduling work and in determining the procedures to be used in carrying it out.
5. **Feedback** – The degree to which carrying out the activities required by a job results in the individual obtaining direct and clear information about the effectiveness of his/her performance.

If these core dimensions are present in a job, they are expected to create three critical psychological states in job incumbents. The key psychological states that are necessary for motivation and satisfaction are:

1. **Experienced meaningfulness** – The degree to which a job incumbent experiences work as important, valuable and worthwhile.
2. **Experienced responsibility** – The extent to which a job incumbent feels personally responsible and accountable for the results of the work performed.
3. **Knowledge of results** – An understanding that a job incumbent receives about how effectively he/she is performing the job.

The more these three states are experienced, the more internal work motivation the job incumbent will feel. To the extent that these three states are important to the job incumbent, he/she will then be motivated to perform well and will be satisfied with the job.

The three job dimensions – (1) skill variety, (2) task identity and (3) task significance – all contribute to a sense of meaningfulness. Autonomy is directly related to feelings of responsibility. Feedback is related to knowledge of results. For job incumbents to be internally motivated, they must have a sense of the quality of their performance. This sense comes from feedback.

Job design: The next challenge

In the late 1980s and the early 1990s, European and Asian competitors of American firms were embracing the quality management movement, having turned away from the basics of scientific management. Self-directed teams became important ingredients in the success of manufacturers worldwide.

Many American corporations are implementing self-directed work teams. Coopers & Lybrand's competency alignment process (CAP) takes a holistic view of re-engineering work processes and the effects on how employees use their skills. CAP involves the systematic study, analysis and assessment of jobs as well as the skills needed to perform them in the re-engineered organisation. To accomplish this goal, CAP determines current skill levels of employees in order to identify skill gaps. When a skill deficiency exists for the re-engineered organisation, it can then be eliminated through a variety of programmes including training, redeployment and outsourcing. Without these or similar efforts, re-engineering will probably not succeed. Thus, job analysts and other HR professionals are a crucial link in the re-engineering process upon which so many corporations are staking their competitive future.

Job descriptions and job specifications

How would a manager describe the openings when he/she advertises to hire employees? At an interview to select the best person from those who apply, what guidelines would an interviewer use? He/she would certainly use job descriptions and job specifications.

Job description is one of the primary outputs provided by a systematic JA. From the data gathered in JA, organisations (particularly larger ones) prepare records of the jobs that are being performed in the organisation (job descriptions) and the qualifications necessary to perform them (job specifications). These are used when replacement becomes necessary.

Simply stated, a job description is a written description of what the job entails. It is not necessary to overemphasise how important thorough, accurate and current job descriptions are to an organisation. Many changes occurring in recent years have increased the need for such job descriptions. These changes include:

1. The vast number of organisational restructurings that have occurred (e.g., downsizing).
2. The need to implement new and creative ways to motivate and reward employees.
3. The accelerated rate at which technology is changing work environments.
4. New, more stringent regulation of employment practices through legislation.

According to Ghorpade (1988), there is no standard format for a job description but almost all useful and well-written descriptions will include information on:

- **Job title** – The title of the job and other identifying information such as its wage and benefits classification.
- **Summary** – Brief one or two-sentence statements describing the purpose of the job and the outputs that are expected from job incumbents.
- **Equipment** – Clear statement of the tools, equipment and information required for effectively performing the job.
- **Environment** – Descriptions of the working conditions of the job, the location of the job and other relevant characteristics of the immediate work environment such as hazards and noise levels.
- **Activities** – A description of the job duties, responsibilities and behaviour performed on the job as well as a description of the social interactions associated with the work (such as size of work group, amount of dependency in the work).

A typical example of a general job description is given here:

Example of a general job description

Job title:	Production Supervisor		
DIVISION:	Plastics	WAGE CATEGORY:	Exempt
SOURCE:	Alias bin Shaari	VERIFIED BY:	Robert Wong
JOB ANALYST:	K. Rajaratnam		
DATE ANALYSED:	26 Nov 2007		

Job summary:

The PRODUCTION SUPERVISOR works under the direction of the PRODUCTION MANAGER: **plans** goals; **supervises** the work of employees; **develops** employees with feedback and coaching; **maintains** accurate records; and **coordinates** with others to achieve optimal use of organisational resources.

Job duties and responsibilities:

1. Plans goals and allocates resources to achieve them; **monitors** progress toward objectives and adjusts plans as necessary to reach them; **allocates** and **schedules** resources to assure their availability according to priority.
2. **Supervises** the work of employees; **provides** clear instructions and explanations to employees when giving assignments; **schedules** and **assigns** work among employees for maximum efficiency; and **monitors** employees' performance in order to achieve assigned objectives.
3. **Develops** employees through direct performance feedback and job coaching; **conducts** performance appraisals with each employee on a regular basis; **provides** employees with praise and recognition when performance is excellent; and **corrects** employees promptly when their performance fails to meet expected performance levels.
4. **Maintains** accurate records and documents; **processes** paperwork on a timely basis and with close attention to details; **documents** important aspects of decisions and actions.
5. **Coordinates** with others to achieve the optimal use of organisational resources; **maintains** good working relationships with colleagues in other organisational units; and **represents** others in unit during division or corporate-wide meetings.

Job requirements:

1. Ability to apply basic principles and techniques of supervision.
    a. Knowledge of principles and techniques of supervision.
    b. Ability to plan and organise the activities of others.
    c. Ability to get ideas accepted and to guide a group or individuals to accomplish tasks.
    d. Ability to modify leadership style and management approach to reach goals.
2. Ability to express ideas clearly in both written and oral communication in English and Bahasa Malaysia.
3. Physically fit and healthy.

Minimum qualifications:

Diploma in Mechanical Engineering or equivalent; and one year supervisory experience

OR

Substitute 30 hours classroom supervisory training for supervisory experience.

Adapted from Meija et al. (2007). *Managing Human Resources* (5th Ed.). New Jersey: Pearson Education.

The job specification evolves from the job description. It addresses the question "What personal traits and experience are needed to perform the job effectively?" Job specification is especially useful in offering guidance for recruitment and selection.

The determination of skills, knowledge and abilities required for performing a particular job must be systematic. Harvey (1993) offers the following guidelines for arriving at the characteristics that should be included in a job specification:

1. All job tasks must be identified and rated in terms of importance (by means of job analysis techniques).
2. A panel of experts, incumbents and/or supervisors should specify the necessary skills for performing each of the job tasks identified.
3. The importance of each skill must be rated.
4. Any other characteristics (such as physical requirements and professional certification) necessary for performing the job should be identified.
5. Each skill that has been identified needs to be specifically linked to each job task.

Only traits and skills that are actually required to perform the job should be stated in a job specification. Job specifications need to differentiate clearly between essential and non-essential skills. Essential skills are those for which alternative ways of accomplishing a specific job are not possible. Changing the structure or work methods of that job can accommodate non-essential skills.

Introduction human resource information system (HRIS)

The quantity of information needed by all functions of a business in order to make efficient decisions and to respond to the changing needs in the dynamic external environment has grown exponentially. Information is critical to HR function as people are the most complex organisational resource to manage. The variety of employee qualifications, employment contractual terms, attendance policies, occupational health and safety issues, compensation system, and performance appraisal require increasingly sophisticated information systems to manage HR information. With information technology (IT) systems, HR functions can be done faster in a more accurate and productive way.

An HRIS is an IT system used to gather, store, control, analyse and retrieve data to provide timely and accurate reports on HRM in an organisation. It has become a strategic tool to manage people efficiently by integrating HR information into the organisation's business strategy. HRIS, if used effectively, can provide a powerful competitive advantage to the organisation.

Information needs for HR data

The information needs of the organisation define data requirements. A thorough information needs in HR function should be undertaken to ensure that all data needs are met. Data needs should be identified in detail so that an adequate database is developed.

Two types of data are needed in a typical business organisation: employee data and organisational data. Pilbeam and Corbridge (2002) have identified the following individual employee data and organisational data.

Employee data may include the following:

- Personal details
- Contractual agreements
- Pay and pensions
- Benefits
- Education and qualifications
- Skills and competencies
- Appraisal records and ratings
- Job details and employee progression
- Attendance records
- Disciplinary details
- Health records
- Termination details, including reasons for leaving

Organisational data may include the following:

- Organisational structure
- Departmental details
- Job analysis
- Job grades and pay structures
- Cost centres
- Range of contracts and work design

Duties and responsibilities of data collection, input and maintenance should be clearly defined among organisational departments. Periodical review of data should be conducted to meet with the changes needs and requirements in the information age. Finally, any changes in data should be captured and input into the system immediately. This will reduce the need for extensive transfer of data at a later point in time and also the potential for error.

Information needs for the provision of HR services

Many organisations now have developed Intranet facilities as a means to provide information to the members of the organisation. An Intranet is a network of computers that enables employees and managers in an organisation to communicate with each other. It is a very useful communication tool in HR function. It provides an easy and effective way for the organisational members to access to HR policies and procedures.

Pilbeam and Corbridge (2002) have also identified the information requirements of an HR Intranet as follows:

- Recruitment and selection, with online application
- Working hours and sign-in system
- Equal opportunities
- Holidays and application for leave
- Maternity, paternity and parental entitlements
- Absence reporting and management
- Performance management
- Staff development and promotion
- Health and safety
- Pay, fringe benefits and bonus policies
- Grievance and disciplinary procedures
- Redundancy and lay-off policies
- Employment terms and staff handbook.

This is not an exhaustive list for the provision of HR services in the Intranet system. This is an indication that an HR Intranet has a great potential in the delivery of information to all employees and managers within the organisation.

The uses of HRIS in people resourcing

The benefits of an HRIS are derived from the applications of HR information to the resourcing and managing of people in the organisation. An HRIS facilitates the decision-making process and allows HR operations to be evaluated, compared, and assessed. The following illustrates how an HRIS aids the various activities of HR (Pilbeam & Corbridge, 2002).

Human resource planning

Planning is an integral function to any organisation. Given that people are critical assets, it is essential for managers to plan to meet future needs of human resources. This is particularly the case if labour markets are tight and if it takes time to train people in the required skills. HR planning requires information from both inside and outside of the organisation. HR managers need to know the number of employees needed for present and future operations and their respective skills, knowledge, and abilities. They also need to know the available resources in the external labour market. An HRIS can be used to provide necessary information to assist in the planning and decision-making process. Information such as labour turnover, workforce profiling, and employee skills audit can be obtained from HRIS to facilitate HR planning.

Recruitment and selection

An HRIS allows the recruitment and selection process to be streamlined and managed more effectively and efficiently. An organisation which undertakes a large amount of recruitment will gain significant benefits from HRIS. Screening and tracking of job applicants through the computerised system will speed up the hiring process. Reports can also be easily generated to monitor the activities in recruitment and selection. The HRIS not only enables recruitment and selection activities to be done in a more cost effective manner but also enhances the quality of HR services.

Pay and rewards

Employee compensation has become a complex issue and constant review is needed to ensure that reward objectives are being achieved. Reports of salary profiles of employees can be generated for internal pay comparison and adjustments. The impact of pay increase can be projected to determine affordability. Reports of salary profiles by gender can also be generated by the HRIS to check compliances of Equal Opportunities Acts. Information on market pay rates can be analysed and stored to determine the market posture of the organisation, that is, to determine whether the organisation should pay above market average, pay the market average, or pay below market average. Finally, HRIS can be used to prepare information for pay negotiations with relevant parties such as the trade union.

Performance management

HRIS can be used to monitor the performance management system of an organisation. An HRIS can store and analyse such data as performance targets and measures of performance to assess if they are fair and achievable. Individual, team and departmental performance trends can be monitored to track their performance over time. Under-achievers can be identified by HRIS for personal development purposes. Expert systems can retrieve relevant data (salary, development and performance) to identify employees eligible for promotion.

Training and development

The strategic importance of training and development of employees cannot be under-estimated. Employee know-how has become a key competitive advantage for today's business organisations. Newly hired employees need to be trained to perform their jobs satisfactory. Existing employees need to acquire new skills and knowledge due to technology advances. Training needs analysis can be performed by an HRIS to identify and monitor the needs for employee development. Information on training and development needs can be stored in HRIS, and the information can be then assessed against the strategic objectives of the organisation. Information on employee training and development for processing may include the following:

- Employee training needs and requirements.
- Actual training undertaken – what, why, when, and how often training programmes were conducted.

- The costs and allocation of training.
- Forward planning for future workforce competencies.
- Information on overall HR development to fulfil strategic needs.

Employee relations

An HRIS also offers benefits in the management of employee relations. The analysis of aggregated data on disciplinary issues may identify common problems that give rise to employee dissatisfaction. The identification of common disciplinary problems should result in clearer policy statements on the governance of employee behaviours. Clearer regulations and solutions to common problems should reduce the potential for conflict in the employment relationship.

Module Summary

Summary

Job analysis plays a major role in HRM activities and programmes. The job is the major building block of an organisation. Hence, it is essential that each characteristic of each job in an organisation is clearly understood. One of the definitions of job analysis is "a purposeful, systematic process for collecting information on the important work-related aspects of a job". Part of the problem in defining JA stems from a difficulty we have with the term "job". A variety of information is collected to undertake a proper JA. This information can be in the form of qualitative, verbal, narrative descriptions or quantitative measurements of each item. JA can use one or many of seven methods. Some are quick but may produce less reliable data than other methods. Others are more accurate but more costly.

JA is a fundamental starting point for HR management. JA information can be used in each phase of the human resource management cycle – job design, job classification and evaluation, recruitment, selection, training, performance appraisal and performance management. JA provides a range of information in regard to jobs in organisations. The information derived includes the following: job description, job specification, job classification, job evaluation, job design, and performance appraisal. If job analysis is used properly, it ensures that the appraisal instrument assesses what is actually being done on the job. As much as there are benefits towards management (especially towards line management), there are also benefits to individuals from job analysis.

JA involves collecting data about the job; it is a systematic process for collecting, analysing and interpreting job-related information. Conducting JA is not for amateurs. Training is required. There are numerous ways in which data can be collected. However, HR specialists adopt the method depending on the circumstances. In general, JA methods require the following data collection techniques: background research, performance of the job, site observations, individual interviews, group interviews and job analysis questionnaires. Job analysts commonly combine methods of data collection to obtain a true and full picture of the job under study. Most approaches to job analysis mix and match various job data sources and data collection techniques. Since a variety of systems have evolved, an approach most commonly encountered – the distinction between work-oriented and worker-oriented methods – is used. Work-oriented approaches include two methods: (1) functional job analysis and (2) critical incidents technique. Worker-oriented approaches consist of three methods: (1) position analysis questionnaire (2) job element method and (3) threshold traits analysis.

A multi-method job analysis approach to JA uses a combination of four general job analysis techniques: observation, interviews, questionnaires and job incumbent diaries. Job design involves structuring job elements, duties and tasks to achieve optimal performance and satisfaction. Job design was a concern of Frederick Taylor, the famous industrial engineer and father of what is called scientific management. Job enrichment involves designing jobs so that employees' needs for growth, recognition and responsibility are satisfied. Job description is one of the primary outputs provided by a systematic JA. From

the data gathered in JA, organisations (particularly larger ones) prepare records of the jobs that are being performed in the organisation (job descriptions) and the qualifications necessary to perform them (job specifications).

HRIS plays an important role in managing HR data and functions. The primary purpose of an HRIS is to assist all functional managers in decision-making. Thus, an HRIS must be able to generate information that is accurate, timely and relevant to the needs of all managers. IT has created opportunities for HR to reduce administrative costs and to engage in a strategic role in achieving organisational goals.

The information needs for HR data and services must be carefully assessed to develop an effective HRIS. The uses of HRIS in people resourcing include HR planning, recruitment and selection, compensation, performance management, training and development and industrial relations.

An HRIS should add value to the organisation. Information generated by an HRIS should help all functional managers make faster and better decisions. Otherwise, the costs of the HRIS cannot be justified. As stated by Stone (2008), HR manager should ask the following questions in evaluating an HRIS:

1. Is the HRIS able to generate accurate and timely information for decision-making?
2. Is the HRIS integrated with payroll system and other functional areas?
3. Is the HRIS able to generate on-request as well as periodic detailed reports?
4. Do benefits of the HRIS outweigh its costs?

Assignment

Assignment

1. Considering your job, list the aspects of it that need to be examined in order to carry out a job analysis.
2. Show the application of JA data in the HRM process.
3. Suppose you are appointed a consultant to carry out a JA in your organisation. Prepare a questionnaire using the abovementioned guidelines to collect data of jobs in the clerical (non-managerial) grades.
4. What can be done to maintain the security of an organisation's HRIS?
5. What improvements to your organisation's HRIS would you like to see and why?

Assessment

Assessment

1. With reference to your organisation, what methods do you consider most appropriate to carrying out a JA? Give reasons.
2. List in table form the advantages and the disadvantages of each JA method described above.
3. What type of computerised HRIS is being used at your workplace?
4. How can an HRIS help functional managers to better manage their duties and responsibilities? Provide examples to support your answer?

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