## CHAPTER 2

### HUMAN RESOURCE ACCOUNTING

- METHODS OF VALUATION

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CHAPTER 2

HUMAN RESOURCE ACCOUNTING
- METHODS OF VALUATION

2.1 INTRODUCTION:

"The notion of treating people as assets and accounting for them is rather logical and satisfactory as to the expectations of future economic benefits, and their measurability."¹

The basic premises underlying the theory of Human Resource Accounting are:
(1) People are valuable resources of an enterprise,
(2) the usefulness of manpower as an organizational resource is determined by the way in which it is managed, and
(3) information on investment and value of human resources is useful for decision making in the enterprise.

The basic philosophy of the concept of Human Resource Accounting is that the human beings working in an enterprise are perhaps the most valuable assets and it is the responsibility of the management to acquire, maintain and develop the human resources of the organization. The purchase of smallest items like tools and implements are recorded in the books of account, but the huge amount of money spent on acquiring and developing human resources is not accounted for and the fact is not disclosed in the balance sheet. In the traditional accounting practices the huge amount incurred on the recruitment, selection, placement, training and development of the personnel is generally treated as revenue expenditure and hence, it is debited to profit and loss account of the period during which such amount is incurred. In fact, the benefit of services of employees are available in future for many years and so to treat such expenditure as revenue expenditure is against the accounting principle. They must be treated as capital expenditure and must be shown in the balance sheet. Failure of accountants to ignore this concept, led the academicians, in seventies, to evolve a concept of Human Resource Accounting. This emphasized that human resources should be treated like physical assets and shown in the balance sheet.

The Committee on Human Resource Accounting stated, “the accepted practice of regarding all expenditure on human capital formation as are immediate change against income is inconsistent with the treatment according to comparative outlay on physical capital”.

To provide meaningful information shown about the state of affairs of business, then some criteria should be developed to measure the value of human resources and show it in the balance sheet as business assets. It is heartening to note that in the last five decade, considerable amount of research in this field has been done to develop methods and techniques of human resource accounting. Contribution made by researches like Hermerson, Hekemian, Brummet, Pyle, Flamholtz, Likert, Calpan and Landekich are worth mentioning.

Calpan and Landekich wrote, “There appear to be two major reasons why human resource accounting has been receiving so much attention in recent years. First, developments in modern organization theory have made it apparent that there is a genuine need for reliable and complete information which can be used in improving and evaluating the management of human resources. Second, the traditional framework of accounting is in the process of being expanded to include a much broader set of measurement that was thought possible or desirable in the past”.

2.2 Meaning of HRA:

The definition given by Eric Flamholtz is well known. According to him HRA is “accounting for people as organization resource. It involves measuring the costs incurred by the business firm and other organisations to recruit select, hire, train and develop human assets. It also involves measuring the economic values of people to organisation”.

In the first part of this definition, the human which are considered to be resources are those working in the organization, that is, it favours accounting of human beings working in the factory. It does not include other interested parties like shareholders, suppliers, creditors, customers and general public. While some authors like Likert suggests to include both the parties in HRA. In that sense HRA is concerned with two

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2 I bid. P. 69.
parties. (1) Internal human resources (employees, officers etc.). (2) Outside human resources (like customers, investors etc.).

The American Accounting Association’s Committee on HRA defined human resource accounting as follows:

"HRA is the process of identifying and measuring data about human resources and communicating this information to interested parties".\(^5\)

This definition suggests applying basic accounting functions to human resources. There are two interested parties, namely, management and outsiders.

In the opinion of Rensis Likert, “Human Asset Accounting is the activity devoted to attaching dollar estimates to the value of a firm’s human organization and its customer goodwill".\(^6\)

According to Stephen Knauf, HRA is “the management and qualification of human organization inputs, such as recruiting, training, experience and commitment".\(^7\)

2.3 Objectives:

Rensis Likert has listed the following objectives of Human Resource Accounting.

(1) to furnish cost value information for making management decision about acquiring, allocating, developing and maintaining human resources in order to attain cost effective organizational objectives.

(2) to allow management personnel to monitor effectively the use of human resources.

(3) to provide a sound and effective basis of asset control i.e. whether assets are considered depleted or appreciated.

(4) to aid in the development of management principles by classifying the financial consequences of various practices.

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\(^7\) Knauf, Stephen, Measuring Organizational: Human Resource Accounting : Efficiency.
2.4 Human Resource as an Asset:

In all the above definitions it has been accepted that human beings are valuable assets of the business and it must be valued and shown as firm’s asset in its balance sheet. Now the question is Can a human being be treated as an asset? While defining the term ‘asset’, Pyle and White stated that business assets are those assets or economic resources which belong to the business. This definition suggests that the asset is that which belongs to the business or of which business is the owner. For an asset to belong to anyone, the legal ownership is necessary. In that sense the business has no ownership rights on people working in business and so human resources are not assets.

However, in the accounting sense, the meaning of asset does not strictly mean ownership. In fact, an asset in the accounting sense is that transaction which creates a right to some economic benefit from some asset of one type or the other in future. In that sense, human being can be called business asset.

Even according to the definition of assets given by American Accounting Association, the expense from which benefits are expected to be derived in future is considered to be an asset. From this point of view, people working with the organization are assets because future benefits are likely to arise from them, though the business does not have any ownership right over them.

In another sense also, there should be no objection to consider people as an asset. Though the business has no ownership rights over them, it has ownership rights over their services under the contract of service.

Another objection to treat human resource as an asset is that, the value of asset can be determined with reasonable accuracy, and the value can be verified at the time of audit. In that sense, it is not possible to evaluate the value of human beings with reasonable accuracy. This is based on the logic that other physical assets can be valued. But this logic is not correct. Even in case of other physical assets the valuation is found to be subjective and their value is an estimate only. If the values of physical assets may differ from person to person, why should people not be treated as assets?

Some people argue that treating employees of business as assets suggests the ownership outlook of management and reminds us of slavery system. A slave was treated as the property of his owner.
H.V. Swann\textsuperscript{8} remarked, “It is to be pointed out that treating people as assets should not be considered as lowering the status of human dignity as incase of slave trade where quite readily people were bought and sold and owned”. However, one must not treat employees as assets in that sense. The employee or manager is an asset of the company, because of their efficiency and even employees are motivated to hear such statement from management. Hence, there is no question of treating an employee as a slave or insulting employees.

The discussion shows that there can be no objection to treating human beings as assets of business.

\textbf{2.5 Methods of valuation of Human Resources:}

Once, it is accepted that human resources are the assets of business; the next question is how to value these resource. Several methods have been suggested by various accountants, but no one of the method is suitable for all purposes. Some of these methods are discussed below:

\textbf{2.5.1 HISTORICAL COST METHOD:} This approach was developed by Pyle, Brummet and Flamholtz.\textsuperscript{9} They believed that human resource costs are current sacrifice for obtaining future benefits and can be obviously treated as assets. Some believe that it was developed by Rensis Likert in R. G. Barry Corporation of the U S A in 1967. As per the “Cost Principle” of accounting, whatever expenses are incurred on employees must be treated as their cost and must be capitalized and shown as an asset in the balance sheet. As Shri Porwal\textsuperscript{10} has written “In this approach, the actual costs of recurring, selecting, hiring, training, placing and developing the employees of an organization are capitalized and amortized over the expected useful life of the asset concerned”. The development expenditure includes the expense of training the employees in order that the employees develop capabilities of performing the jobs allotted to them efficiently. It include salary of the trainer, the cost of materials and equipments used, traveling expenses etc. The total of all these costs is capitalized and treated as value of human assets.

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\textsuperscript{10} Accounting Theory - L. S. Porwal p. 346
Thus, this system treats the human assets as any other physical asset. It is shown in the balance sheet in the same manner as any other asset is shown. It is amortized (written off or depreciated) over its useful life in the same way as any other physical asset. If any employee leaves the job before the estimated period or if he dies, the remaining balance of his cost is written off. If an asset has a longer life than estimated, revisions are made in the amortization schedule. The asset is amortized over its useful life, which is estimated on the basis of the number of years for which an employee is likely to remain, selecting and training him must be written off over these estimated years of service. These estimated periods must be reviewed from time to time and necessary revisions must be made.

The model provides useful information to both internal and external users of accounting data. As Baker has said, the model is useful because of (i) its objectivity (ii) its facilitation of comparison of levels or human resource investment on a basis consistent with accounting treatment of other assets and (iii) its fairer matching of benefits exhaustion with expense in particular time periods.

But the model does not allow to properly measure and representation of the total cost by a firm’s human resources. Secondly, the most important defect is that it does not take into account the aggregate costs of the employee’s potential services. Thirdly, it does not recognize changes in assets value excluding the amortization of acquisition costs, promotions and job related skills. R.G. Barry corporation discontinued in 1974 as it proved to be expensive. (iv) The economic, value of human resources increases our time as the people gain experience. However, in this approach the capital cost decreases through amortization. This is contradictory.

2.5.2 REPLACEMENT COST METHOD: This is a method similar to estimating cost of replacing an existing physical asset like machinery etc. The method was suggested by Rensis Likert and developed by Flamholtz. An estimate of cost is made of replacing the firm’s existing human resources by similar employee and that cost is considered to be the value of human resources (HR = ECRE = (R+H+T+D)). Likert suggested that the value should be determined of total human resources on the assumption that a similar organization is to be created from scratch.
It involves measurement of costs to the firm to recruit, hire, train and develop replacements, to the level of proficiency and familiarity with the organisation and its operations currently experienced with existing employees.

Rensis Likert and Pyle have described the method as follows, “Suppose that tomorrow your firm had all of its present facilities-everything but no personnel except the president, and he had to rebuild the human organisation back to its present effectiveness. How much would that cost? All costs would be included which are involved in recruiting, hiring, training and developing the replacement to the present level of proficiency and familiarity with the organisation”.11

The replacement cost can be either positional or personal. The positional replacement cost applies to the position occupied. e.g. if the accountant is to be replaced by another accountant, then the cost involved is the replacement cost of accountant’s post. In case of personal replacement cost, the cost of replacing a particular individual by another individual of the same skill and intelligence level. This is a very difficult task, as one does not know what would it cost to replace the present accountant say. It is difficult to obtain person of the same efficiency as one to be replaced. The replacement costs involve three types of expenses, namely, expenses cost of procurement, cost of development and cost of separation. The last one involves the amount of compensation payable to an employee for relieving him. It also involves pre-separation costs due to decline in the efficiency of the employee and decline in production as a result. The third one is the vacant position costs, which is incurred because the post remains vacant till a new employee is appointed. All these expenses are totaled and then capitalized to arrive at the total replacement cost of human resources of the organization.

Hekimian and Jones also suggested the use of replacement cost method. They said, “In essence, we would value a human being at the estimated cost to us of replacing him with another person of equivalent talents and experience”.12

The difficulty in this method is that even in case of physical assets, it is difficult to replace an asset with identical asset due to the technological development. In case of human beings it is even more difficult as human beings are of different talents and capabilities and it is difficult to replace a particular person with another person of the

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same capability and talent. As Hekinsion and Jones said "the management may have some particular asset, which it is unwilling to replace at current cost but which it wants to keep using because the asset has a value greater than its scrap value. There must be some method to valuing such as asset. Secondly, there may be no similar replacement for a certain existing asset. This situation is caused either by a changing technology, where an asset has to be replaced by a new model, or by the simple fact that the asset is custom made. A proper system of asset valuation must include a methodology for valuing assets in these circumstances”.

2.5.3 OPPORTUNITY COST METHOD: This method is also known as “Competitive Bidding Method” which was developed by Hekimian and Jones to overcome the limitations of the replacement cost method. This method suggests that the value of an employee in his alternative use should be determined, as a basis for estimating the value of human resources employed by the enterprise. One of the methods of estimating opportunity cost is that there should be bidding for various personnel by divisional managers. Only scarce employees are subject to a bid price. The person concerned is allotted to the department, which has offered the highest bidding price, which should then be included in the investment cost price. The bid price may go up to the capitalized value of the extra profit likely to arise due to the ability and competence of the person. This would provide optimum allocation of personnel within the firm. It will also provide a quantitative base for planning and development of human assets of the firm.

Hekimian and Jones said, “the investment centre managers will bid for the scarce employees they need to recruit. These ‘scarce’ employees come from within the firm and include only those who are the subject of recruitment request made by an investment centre manager. In other words, employees not considered ‘scarce’ are not included in the human asset base of the organization.”

Suppose, in a company, the investment in department A is ₹ 10 lacs and its profit is ₹ 1.5 lacs. The return on investment in that industry is 15 %. If by employing a particular person, the profit of the department is likely to increase by say ₹ 90,000 its capitalized value at 15 % would be ₹ 6,00,000 and the departmental manager can bid up to a salary of ₹ 6,00,000 for that person.

The proponents of this approach believe that “a bidding process such as this is a promising approach towards (i) optimal allocation of personnel and (ii) a quantitative base for planning, evaluating and developing human assets of the firm”.

The authors believe that “a bidding process such as this is a promising approach towards (i) optimal allocation of personnel and (ii) a quantitative base for planning, evaluating and developing human assets of the firm.”

However, the method suffers from several drawbacks:

(1) It excludes employees of the type which can be readily hired from outside, Thus it excludes such employees with no special skill. The method seems to be concerned with only those persons who are having special skills.

(2) The method is useful for valuation of human resources where alternative uses are available. However, due to complications of modern business, the alternative uses in the organization are difficult to be identified and so, the valuation on the basis of opportunity cost is not possible.

(3) The valuation based on opportunity cost is inaccurate and misleading. A person may be expert in one department and may be very valuable to that department but he may be of no use to other department. Thus his value may be very high for one department, but very low in another department.

According to Elovitz, the opportunity cost approach is an artificial and cannot be regarded as an effective proposition.

2.5.4 CAPITALISATION OF SALARY METHOD: The method indicates that, the present value of total future earnings of homogeneous group of employees is estimated. The earnings of an individual is a mathematical presentation of the income stream generated by a person. This will be his productivity to the firm. The productivity is linked with experience where it increases with the age, where it declines after a certain stage. A model is developed to find out the present value. But the question would arise as to what rate of discount must be selected? It is suggested that the rate of discount used for preparing capital budgeting technique may be used. Thus under this method, it is possible to arrive at a value of the total human capital of the firm based on average earnings data of a homogeneous group of employees.

2.5.5 PRESENT VALUE APPROACH: This method also known as Economic Value Method and is based on present value of employees' future earnings. The base is not the average earnings of the group of employees but it is the value to the firm from his employment. An individual value to an organization may be defined as the present worth of the set of future services, he is expected to provide during the period he is expected to remain with the organization. Here three things are important: one, what would be contribution of an employee to the firm. Second, what should be rate of discount at which present value is to be determined. Third, what would be the period for which he is expected to remain in service with the organization. Thus the approach involves complicated calculations. It involves a number of assumptions to be made.

The various models presented by various authors for finding out the present value are given below:

(i) Lev and Schwartz Model
(ii) Eric Flamholtz Model
(iii) Jaggi – Lau’s Model
(iv) Hermanson’s Model
(v) Likert’s Socio Psychological Model
(vi) Myers and Flowers Five Dimensional Model

(i) LEV AND SCHWARTZ MODEL: The model also known as Compensation Model was developed by Baruch Lev and Aba Schwartz in 1971. It is based on the economic concept of human capital. Capital is defined as a “source of income over a period of time”. It assumes that the present employee will remain with the firm till his retirement. This assumption is not generally valid because employees often change employment before retirement. Thus the value of employee so determined represents mainly the value of employees to the economy as a whole. The BHEL Co.(Bharat Heavy Electrical Limited) of India has valued it human resources based on this model. According to Co. “the value of human capital embodied in a person of age x is the present value of his remaining earnings from employment”. The labour force is divided into homogenous groups of employees, such as unskilled, semi-skilled and skilled employees, engineers of different kinds, salesmen, managerial staff etc.

The whole process is as follows: (1) all employees are divided into homogenous groups based on their skill and age. (2) Average earnings are determined
for each group. (3) The total future earnings of each group till the date of retirement are estimated. (4) Now these total earnings are discounted at a particular rate to arrive at the present value. The value to the firm of human capital embodied in person of age r is the present value of his remaining future earnings from employment. 

They have given the following model. 

\[ V_x = \sum_{t=x}^{r} \frac{I_t}{(1 + r)^{t-x}} \]

Where \( V_x \) = Value of a person X years old 
I = Person’s annual earnings up to retirement 
T = Retirement age 
r = discount rate specific to a person 
t = active service (in years) 

Suppose the total number of semi skilled employees in the age group of 21 to 30 in a company is 1,000 and the average earnings per year per employee are expected to be as follows 

<table>
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<th>Age</th>
<th>Average Annual earnings per employee (₹)</th>
<th>Years</th>
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<tbody>
<tr>
<td>21-30</td>
<td>10,000</td>
<td>for 1-10 yrs</td>
</tr>
<tr>
<td>31-40</td>
<td>12,000</td>
<td>for 11-20 yrs</td>
</tr>
<tr>
<td>41-50</td>
<td>14,000</td>
<td>for 21-30 yrs</td>
</tr>
<tr>
<td>51-60</td>
<td>16,000</td>
<td>for 31-40 yrs</td>
</tr>
</tbody>
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Suppose the rate of discount is 10% 

In this case the value of human resources will be calculated as follows (on the basis of assumption that all employee are of the age of 21 years for the sake of simplicity) 

The present value of an annuity ₹ 1 for 10 years at 10% from annuity table = 6.145 

For next 10 years \( 8.514 - 6.145 = 2.369 \) 
For next 10 years \( 9.427 - 8.514 = 0.913 \) 
For next 10 years \( 9.779 - 9.427 = 0.352 \) 

The present value is as follows 

<table>
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<tr>
<th>₹</th>
<th>P.V. factor</th>
<th>₹</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 x</td>
<td>6.145</td>
<td>= 61,450</td>
</tr>
<tr>
<td>12,000 x</td>
<td>2.369</td>
<td>= 28,428</td>
</tr>
</tbody>
</table>
The present value of future earnings of one employee is ₹ 1,08,292
For 1,000 employees x 1,08,292 = ₹ 10,82,92,000

This is the aggregate present value of the future earnings of the firm as a whole. Thus, the aggregate present value of the different groups of personnel will represent the capitalized future earnings of the firm as a whole. They have recommended the use of cost of capital rate for the purpose of discounting the future earnings of the employees for arriving at their present value.

The model suffers from some deficiencies (i) The assumption that the role of the employee during his life time will not change is wrong. These is bound to be change in his role as employees are transferred from one department to another and so his role is changed. (ii) Secondly, to assume that the employee will leave the firm only on death or retirement is also unrealistic. It is experience of one and all that employees leave the organisation for a number of reasons. When employees leave the organisation for betterment elsewhere, the whole calculation is upset (iii) Flamholtz remarked, “a person’s value to an organisation is not determined entirely by the person’s inherent qualities, traits and skills but also by the organizational role in which the individual is placed. Moreover, the individual’s skills and knowledge are not valuable to the organisation in the abstract form. They are valuable only when such qualities serve as a means to achieve the organizational goals.16

DISCOUNT RATE : Most of the Indian companies which value human resources use a particular discount rate to value human resources, which is the same rate which is used to value physical assets budgeting proposals. For example, NTPC (National Thermal Power Corporation) uses discount rate of 12% to calculate projected salary stream. It is the same rate which NTPC uses as the minimum rate of return in capital budgeting decisions.

However, there are two arguments that are put forward against using the same rate to value human resources as is used for evaluating physical capital budgeting proposals. The model specifically states that the discount rate used to find present value of salary stream should be the rate specific to the person. i.e. the rate should be the asset

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specific. The rate should be selected on the basis of risk involved. The accountants used risk adjusted discount rate to evaluate physical capital budgeting proposals, as this rate will compensate the company adequately as the light of risk involved in the project. If the degree of risk or higher the discount rate would also be high. Similarly, in case of valuation of human resources, different employees will be classified in the different risk groups and appropriate risk adjusted discount rate must be used to evaluate human resources in different groups.

Another limitations of using rate of discount used for capital budgeting proposals evaluation for valuation of human capital is that there is a great difference in the amount invested in it. The human are resources do not involve heavy initial investment as in case of physical assets. When physical assets like plant and machinery, land, building etc. are purchased, it involves heavy amount of cash outflow immediately and large amount of funds is blocked for a long period of time. But that is not the case in the human resources. Hence, it is not logical to use the same discount rate for evaluation of human resources as is used in case of physical asset capital budgeting decision. In fact, for human resources valuation the discount rate must be lower than that used for physical assets. Thus, the use of same discount rate used for both is not conceptually sound, because of the difference in the timings of the cash outflows.

Flamholtz commented on the model of Lev and Schwartz, “the information supplied to the decision makers by the discounted cash flow will lack relevance and utility.”

Jaggi and Lau stated, “But in spite of these short comings, this model made a valuable contribution in the field by introducing the economic value concept to human resource accounting.”

(ii) ERIC FLAMHOLTZ MODEL OR REWARDS VALUATION MODEL: This approach was proposed by Eric Flamholtz on the assumption that is not realistic to assume that an employee would continue in the job till retirement age. He presented a model on the assumption that an employee may leave the job even before death or retirement and may perform different roles in the same organization during

17 Ibid p. 151.
18 Jaggi, Bikki and Lau, Honshmg • Towards a Model for Human Resources Valuation, The Accounting Review, April, 1974, p. 322.
his career. This model is also based on estimates of expected future earnings of the employees. The value of human resources is calculated as follows:

1. An estimate is made of the period for which an employee would remain in service with the firm.
2. Now the estimates are made about the various roles of employee would occupy during service career and also the possibility of leaving the firm.
3. An estimate is made of the period during which each employee would occupy a particular position or role.
4. An estimate is made of the value derived by the firm from the employee, during the period when employee occupied a particular position.
5. The values of all employees as estimated above are totaled and discounted at a particular rate to arrive at the present value of their future earnings.

Prof. Flamholtz has presented the following formula for calculating an individual’s expected realizable value:

$$E(RV) = \sum_{t=1}^{n} \frac{\sum_{i=1}^{n} R_i \cdot P(R_i)}{(1+r)^t}$$

Where:
- \(E(RV)\) = Expected Realizable Value
- \(R_i\) = Value derived by organisation in each possible state.
- \(P(R_i)\) = Probability that the organisation will derive \(R_i\)
- \(t\) = time
- \(n\) = the state of exit
- \((1+r)^t\) = the discount factor

Thus, a person’s expected realizable value is the product if conditional value and the probability that the person will remain in service with the organisation. The probabilities (P) are determined on the basis of the firm’s past experience.

Prof. Flamholtz believed that an individual expected realizable value is determined by two factors (a) individual’s condition value and (b) the probability that the individual will maintain this expected service life. Multiply these two variables, user if it get the present worth of services actually expected to be derived by an organization. An individual’s conditional value may be defined as the present worth
of the potential services that are expected to be rendered to the organisation. This factor consists of three factors: Productivity, Transferability and Probability.

Productivity means the services, an individual provides while occupying his present position. Transferability is a set of services an individual is expected to provide it. An individual is transferred to a same position in a different department of the organisation.

Probability is a set of services an individual is expected to provide at a higher level position.

Prof. Flamholtz tested his formula in an firm of certified public Accountants in the USA and observed that besides the determinants used in his formula for finding the individual’s value to an organisation, four other variables namely, attitudes, abilities, traits and the individual’s manager were also identified.19

Thus a person’s value to the firm is measured as the discounted mathematical expectation of the monetary worth of the future rewards (services) a person is expected to render to the firm in the future roles that he a expected to occupy. It takes into consideration the probability of his remaining with the firm.

The model suffers from the limitations of the former models. In each model, it is extremely difficult to determine the value of a person to the firm. Here the value of each individual employee to the firm is estimated and that of the group is ignored.

(iii) JAGGI – LAU’S MODEL The valuation of employees on a group basis was suggested by the authors of this model.20 Here group means homogenous group of employees who may not be necessarily working in the same department. The estimate is made of the period for which each group will remain with the firm, taking into account the past record of labour turnover. They believe that the pattern of labour turnover is likely to remain constant over time, the estimates made on this basis is likely to be more accurate.

This model emphasizes groups rather than individual’s as it becomes easy to ascertain the percentage of a particular group of employees likely to remains with or leave the organisation or to be promoted to the higher ranks during each of the coming years.

They presented the following equation:

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Where $TV = \sum N \cdot V \cdot T \cdot r$

Where $TV =$ Current value of all current employees in each rank.

$N =$ The number of employees currently in each rank.

$n =$ time period

$r =$ discount rate

$T =$ rank transitional matrix i.e. the probability that an employee will be in each organisation or terminated in the next period given his current rank.

$V =$ the economic value of the employee of rank ‘i’ during each period.

(iv) **HERMANSON’S MODEL:** At Michigan State University (USA) Roger Harmanson suggested two models of valuing human resources.\(^21\) One, Unpurchased Goodwill Model and second one is, Adjusted Discounted Future Wages Model.

In the first model, it is stated that if a company is earning super profits, it is indicator of efficient human resources. The firm finds out ratio of profit after tax to total assets (except human assets) and compares it with the similar ratio of the whole industry. It will suggest whether human resources are valuable or not and also suggested determining the value of human resources by capitalizing the super profits.

Normal earnings are based on the normal rate of return to the economy as a whole. The excess is the super profit. This method has its own limitations in the sense that it assumes wrongly that a firm having no super profit has zero value of its human assets. Secondly, it is wrong to assume that the super profit is entirely due to human assets. Lastly, it is based on past profits, which has no significance in decision-making.

The second model assumes that a relationship exists between a person’s salary and his value to the organization. It is based on the present value of future stream of wages or salaries of persons employed in the firm. The discounted, future wage stream is adjusted by an ‘efficiency ratio’. Observation advocates use of this factor on the ground that differential earnings of a firm are attributable to human resources only. The efficiency ratio is the weighted average of the ratio of the return on investment of the given firm to ratio of all the firms taken together. The ratio is found for a total period of five years. The weights are given in a reverse order of years. If the ratio is greater than 1, it suggests that the firm is making better use of its human resources than other firms of the industry.

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This approach suffers from certain limitations. Firstly, there is no justification of selecting five year period for giving weights. Secondly, it is difficult to use efficiency ratio concept in the real world situations.

(v) **LIKERT’S SOCIO PSYCHOLOGICAL MODEL** : Likert had presented a model for valuation of human resources, which incorporates a number of variables. These variables measure productive capacity of an organisation.

According to Likert and Pyle, Net worth of an organisation is the present value of contributions employees make over their life less costs incurred in acquiring developing, maintaining and utilizing these services. There are three types of a firm. They are, casual variable, intervening variables and end result variables.

The casual variables are independent variables. They determine the cause of developments within an organisation and the result achieved by the organisation. These casual variables include only those independent variables which can be allowed by the organisation and its management. The second one that is, the interviewing variables reflect the internal state and health of the organisation like loyalties, attitudes, motivations performance goals and perceptions of all members and their collective capacity for effective interaction communication and decision making. The third one are the end result variables which are the dependent variables which reflect the achievements of the organisation, such as productivity, costs, scrap loss and earnings.

It means Likert’s model is based on interaction of these three variables. To arrive at values of these factors he suggested the use of a questionnaire is applied.

This model presented by Likert provides useful information about the present value and expected future attitudes behavior and satisfaction of human resources of the firm.

Some criticize the model on the ground that Likert’s assumption that performance is a function of satisfaction. In further investigation, it was found by Likert and Bowers to the opposite relationship between the two, suggesting that satisfaction is a function of performance.

(vi) **MYERS AND FLOWER’S FIVE DIMENSIONAL MODEL** : For valuation of human resources of a firm, Myers and Flower suggested the use of five dimensions

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which are Knowledge, Skills, Health, Availability and Attitude. If a person is knowledgeable, it will enable him to direct his skills and his health enables him to apply them. These factors are interrelated. It means if any one of it is absent, the others are rendered correspondingly ineffective.

The model states that the performance of an employee represents its value to the enterprise and it is a function of such variables like knowledge, skill, health, availability and attitude. Of these, attitude is the most important variable in giving the end result.

Here attitude index is computed for a group of employees on the basis of attitude scores and their respective weights. If attitude index is multiplied by annual salary, it indicates the value of the employee. The difference between the value and the annual salary is regarded as the gain or loss arising out of the employee’s continued employment with the organisation.

The limitation of the model is that the managers and the accountants are not familiar with the area of attitude measurement. The model is so complex that its use in the real world is expensive as well as nearly impracticable. Moreover, the model may not be as useful to the external users. As Rose Dicario observed, “the relationship between attitude measures and subsequent firm profitability must be established to enable the model to be useful for investment decisions.

2.5.6 RETURN ON EFFORTS EMPLOYED METHOD: It is a method which involves measurement of effort of persons employed on various functions like buying, manufacturing, selling etc. Points are determined to measure the quantity and quality of efforts expended by each. The points are allotted in three groups. (1) For the level or grade of work done e.g. 10 points for director’s job, 7 points for sales manager’s job, 4 points for salesman’s job and 1 point for typist’s job. (2) Now, the effectiveness with which each individual performs his job is determined e.g. for very good performance 2 points, for good performance 1.5 points, for satisfactory performance 1 point etc. (3) Now points are fixed for experience, which increases efficiency up to a point. e.g. for an experience of 1 year or less 1 point, for 1-2 years 1.1 point etc.

All these points are then multiplied to find out a measurement of effort employed by each employee. For example, as good sales manager with experience of more than five years the points would be $7 \times 1.5 \times 3 = 31$ points. When the
calculations of all individuals are totaled up, it gives a measure of total efforts employed in an organization. For each type of work (like buying, mfg., selling etc.) total efforts and total profits made are determined and on that basis the profit per unit of effort expended is found, just as return on investment per rupee may be found out. This will inform the management whether the return on effort is satisfactory or not. Finally, this will lead to optimum allocation of human resources among various functions.

2.5.7 BEHAVIOURAL VARIABLE METHOD: This method may be termed as Non-monetary method of valuing human resources. It does not present the value in terms of money. But it measures the behavior of employees due to the policy followed by management to deal with personnel. Following qualities are measured to measure the quality of human assets (1) their loyalty to organization (2) level of motivation or morale (3) confidence and trust towards management (4) quality of team work (5) attitude scale of members. According to Likert the progress in social science in recent years enables any company to obtain measurements for appraisal of all these qualities. He cites an experiment conducted by him in a large company, in which two divisions were reorganized on a centralized, dictatorial basis and two on a decentralized, participating basis.

The result was that where pressure was put on employees, there was a substantial increase in productivity, the profitability increased and the rate of return on investment went up considerably. But this was done at the cost of human assets. The hostilities among employees increased, loyalties declined, motivation to produce decreased, while motivation to restrict production increased. In spite of immediate increase in the long run, productivity would decline and return on investment would go down. On the other hand, where decentralization was used, loyalties increased, the motivation to increase production also increased. As a result in the long run the productivity, profitability and rate of return all are going to increase.

2.5.8 INCREASING THE VALUE OF GOODWILL METHOD: Whenever, goodwill is valued and is shown in accounts, indirectly it amounts to valuation of human resources. But goodwill is not valued in business every year. Hence human assets are not given sufficient importance in accounts. Besides, the accountant prefers
to write off goodwill shown in books at the earliest opportunity. The profitability of business is increasing and the goodwill is being gradually written off, it would amount to showing less profit than the true profit and creating secret reserves.

Hence, one viewpoint is that if goodwill is valued on the basis of efficiency of employees and is shown as an asset, it would amount to valuation of human resources. For this, the present system of valuing goodwill will have to be changed and more emphasis should be given to human factors. The human resources must be divided into two groups for this purpose (1) Internal human resources which include personnel working in the organization and (2) External human resources, which include investors, customers, suppliers etc.

The goodwill must be valued from time to time, instead of at present valuing it on special occasions like purchase of business, or admission or retirement of partners only. In the valuation of goodwill, the share of internal human resources and external human resources must be clearly stated. If there is arise or decline in the value of goodwill, the difference must be transferred to “Human Asset Account”. This would thus include valuation of human resources.

2.6 NON MONETARY MEASUREMENTS OF HR:

The methods of valuation of human resources is money value have been discussed above. Now we turn up to non monetary valuation of human assets, for such measurements are also recognised to have significant uses. There are several techniques of measuring non monetary values:

(1) the technique of skills inventory

(2) Performance evaluation techniques

(3) Potential assessment technique

(4) Attitude surveys, measuring people’s attitude towards their job, pay and working condition.

(5) Psychological methods.

Flamholtz believed that an individual’s value to an organisation in the sense of the expected realizable value can be measured by applying personnel evaluation methods like ranking.

A true measure of the economic value of an employee should be possible in terms of their gross value less the compensation and other costs associated with their utilization.
(1) Skill inventory or capability inventory is one which involves the identification of the levels of education, knowledge and experience. The technique measures skills and their classification in terms of skills, representing the potential services, which can be rendered by them.

(2) As Flamholtz said the expected realizable value can be measured by applying personnel evaluation methods like ranking. Performance evaluation involves certain techniques

(i) The main technique of performance evaluation is the ranking of employees on one or more, ordinal forms of dimensions. They are ranked by their superiors, peers, subordinates or an independent expert. (ii) The ratings of people on a set of scales according to the individual’s intelligence, technical knowledge, motivation, interpersonal skills and judgment. (iii) Check list method is also used to assign scores of the levels of performance for each individual.

(3) With a view to measuring employee satisfaction and dissatisfaction, attitude surveys are carried out. It is a technique to measure employee’s attitudes towards employees job, pay, management and working conditions of the organisation as a whole. A scale is drawn with indication of highest satisfaction at one end and highest dissatisfaction at the other end. People are required to answer different statements on a scale either in ‘yes’ or ‘no’. Numerical scores are assigned to each employer and employee attitudes are measured on that basis. Attitude surveys can again be used to measure the impact of organisation rewards by ascertaining the perceptions of individuals, regarding the organisation’s reward system in terms of magnitude, desirability and equitability of rewards.

(4) Potential assessment techniques is also one of the techniques to make non monetary valuation. It is a technique used to determine an employees capacity for development and promotion. It is a technique which measures the services which the people are potentially capable of rendering to an organisation.

(5) Psychological methods are used to measure the utility or subjective value and the subjective probability of the likelihood of an event.

(6) To determine the expected realizable value of employees, it is also necessary to measures the probability of an individual remaining in service in the organisation for a specified period of time. Here comes into play the actual probabilities from the past history of the firm. For this purpose, from the firm’s past experience, relating to the turnover rate of employees may be projected in future. This will give the probability
that people will remain in the firm. One can construct a stochastic model of the organisation's mobility process. It would reflect a person's mobility from one service state to another. It is based on the assumption that people will move from one service state to another within the firm, in accordance with the probabilistic laws. The probability that a person will remain in the firm can also be derived from subjective probability estimates.

2.7 UTILITY OF HR VALUATION:

There can be no doubt that efficient people working with the enterprise are valuable assets of the business. The following are some of the benefits of HRA.

(a) It shows the value of valuable assets of business and gives a true picture of return on capital employed. It gives a clear picture of long term profitability of business. It will be an important source of information for inventors to take decision. It is useful to the bankers in true evaluation of worth of business before granting loan.

(b) It is useful to management in number of ways (i) Complete records of employees are maintained, the management would be able to take proper decisions regarding personnel, particularly in deciding whether a position should be filled by direct recruitment or by promotion from inside, whether an employee should be transferred or should be retained in the same position, whether an employee should be dismissed or continued etc. This will lead to more scientific personnel management. (ii) Important data is available from these accounts for preparing budget for procurement of employees. Information about the standard cost of recruitment and selection is available. It becomes useful in framing training programmes for employees. It provides useful information about the likely return from the investment made in the employee development programmes. (iii) The data available about the historical cost and replacement cost of procurement and development of employees obtained from HRA, will assist management in taking important decisions like whether the employees should be recruited from outside or inside, employees should be trained for the posts. The decision regarding allotting various jobs to different employees are very difficult for the management to take, because the problems of productivity, job satisfaction and employee development are involved and here comes HRA to their help. The HRA provides data about all these points in monetary terms and helps them to take decisions. (iv) HRA is also useful to management in
controlling the human resources and to evaluate it in order to know how far it is useful
to management in controlling the human resources and to evaluate it in order to know
how far it is used to the firm.

(c) The value of human resources is shown in the balance sheet, it will show
the true state of affairs of the company. Of course, the values placed on employees are
bound to be subjective to a great extent and so it becomes doubtful whether the value
placed on total human resources is completely true.

(d) In accounting system people are shown as assets on accounts, it would
mean acceptance by the management that they are valuable assets of business. The
behavior of management towards the employees would be more practical. It will
prevent thoughtless or reckless transfers, demotions, retrenchment etc. The
management would realize that if employees are not properly dealt with it will lead to
unnecessary strikes and disputes. Such belief would lead to better employee
management relationship leading to industrial peace.

(e) It would provide a basis for manpower planning. The data provided by
HRA would be helpful in such planning and also for controlling the personnel.

(f) The employees realize that the attitude of management is favorable to
them, their morale is boost up. A sense of loyalty develops among employees when
they feel that they take steps in the interest of employees.

(g) It becomes useful in Capital Budgeting decisions. The present techniques
available for evaluating investment proposals take into account only physical and
monetary assets. But the decisions taken about investment proposals after considering
even investment in human resource would be more useful and more meaningful.

(h) Data provided by HRA is useful in evaluating the performance of
managers and even of the whole enterprise. The present method of evaluating
performance on the basis of return on investment completely ignores investment in
human resources. As a result the figures available become misleading e.g. It may
happen that on one hand, the profitability may appear to be rising and on the other
hand the efficiency of the employees may be declining. Thus no proper evaluation of
performance of various departments can be made, ignoring the investment in human
resources.

(i) It will benefit the nation’s economy in the sense that it will lead to
optimum investment of nation’s resources and will also lead to more efficient and
more economical use of manpower.
It is certain that if value of human resources is shown in accounts, it will be a great service to mankind. The dignity and status of human beings would be maintained. There would be a definite change in the basic attitude of management. They would now think that human beings are not only a factor of production but are valuable assets of the business. This will change their outlook towards employees.

Many firms in the USA have started evaluating their human resource and began to show them in their accounts. The consumer product company, R. G. Barry Corporation has done commendable work in this field. Even the Government owned BHEL Co. of India is presenting the value of their human resources in their accounts.

2.8 LIMITATIONS OF HR VALUATION:

The concept of HRA is a developing one and its development has not been very satisfactory. Its practical application has number of limitations some of which are as follows:

(1) No clear cut method of valuing human resources has been developed, which can be acceptable to all. The topic has been widely discussed by a number of authors but there is no consensus among accountants. As a result, different companies value their human resources by different methods and the accounts of various companies are not comparable.

(2) In Jaggi & lau’s method of valuation, the present value of future earnings of employees are estimated. But a number of technical problems are involved therein. Many models have to be developed and experts have to be consulted, which involve considerable expenses.

(3) When a business is sold out, all assets realize some price, but no price is realized for human resources. Of course, when the purchase price is determined, the value of goodwill includes the value of efficiency of people of the organisation. But when the business is running into losses due to external factors, nobody would be prepared to pay any price for goodwill, in spite of the business being managed by efficient and skilled persons.

(4) If human beings are considered to be assets, then depreciation has to be provided on the assets and profit would be reduced to the extent of depreciation. This is not desirable from the viewpoint of company. It will lead to decline in value of company’s shares. Even the income-tax authorities will not recognize such
depreciation, as in no country in the world, it has been accepted by law that human resources are assets of business.

(5) The human resources are presented as an asset in the accounts published for shareholders, the readers would not understand this unconventional accounts. It will lead to unnecessary complications in accounts. It may be better presented in the reports to be presented to management for internal use. Even R. G. Barry Corporation of the US has stopped the practice of including human resources as an asset in published accounts.

(6) Some managers consider HRA as a method of dictatorial control and believe that it leads to exploitation of employees. It may spoil the atmosphere of the organisation in the sense that employees may be displeased when they are devalued in the process. Some of the employees react adversely at the very idea of being evaluated by management.

(7) The value of human resources is presented by estimating the present value of future services of employees, it leads to violation of the ‘cost principle’. The assets must be presented in the accounts at their cost only. While in this method, no consideration is given to the cost of human resources. From this point of view, the balance sheet does not present the true and fair view of the state of affairs of the business.

(8) Whatever method of evaluating human resources may be adopted, the valuation is bound to be subjective depending upon the personal views of the valuer. In case of discounted value method, the rate of discount is not subject to any rule. It may depend upon the management’s personal view. Thus the accounts do not remain objective and even auditor cannot certify the accounts as true.

However, the HRA is useful in many respects and if any consensus is arrived at as regards the valuation method to be followed at international level, if may prove to be of great use to management and to users of financial statements.

2.9 HRA IN INDIA:

In the world, the first attempt of valuing human resources was made by Theodore Schultz in 1961, when he presented a paper entitled “Investment in Human Capital”. Of course up to 1975, there were some stages of development of this
concept. After 1975, people lost interest in human resource accounting. However, after 1990, there is a revival of interest in this subject to some extent.

In India also some Indian companies started valuing their human resources and incorporating them in their Annual Reports.

BHEL & MMTC have been pioneers in introducing HRA in their organisations. Both of them have adopted Lev – Schwartz model. According to this model value of human resources is taken as the present value of estimated future earnings of employees discounted by the rate of return expected on cost of capital. BHEL has classified employees into six groups like (1) Executives (2) Supervisors (3) Supporting staff (4) Skilled Artisans (5) Unskilled and semi skilled workers (6) Clerical staff. They determine the value of future services of an employee in terms of wages and salaries. They also take into account the period for which the employee will remain with the firm. The value of human resources have been computed by working out the present value of the anticipated future earning of the employees after taking into account present pay scales and the promotional policies, which they have adopted.

The annual reports (2010) of the companies, that the chairman’s report invariably contains statements highlighting the importance of human resources. It may contain such statements as “I wish to place an record my sincere gratitude for hard work done by the employees of our company” etc.

The following characteristic are noticed in the human resource valuation by Indian companies in its Annual Reports.

(1) Almost all companies have adopted Lev and Schwartz model for valuing their human resources. The value of individual employee thus computed in the value of an individual to the individual himself.

(2) Such valuation reports are unaudited and they are not major part of the Report. They are simply given as supplementary information. There is neither any Accounting Standard nor is there is any provision in the Companies Act as regards presenting a report on valuation of human resources or including them in the Balance Sheet.

(3) There is no uniformity in use of rate of discount rate for computing present value of future earnings. SAIL is using a discount rate of 14% whereas ONGC uses 12.25% discount rate.
(4) The computation of value requires use of the estimate of time period for which the employee will remain in the organisation and probability of the promotion to his higher posts. But both are subjective in the sense that there is not hard and fast rule. There is great flexibility in their behavior as regards remaining in the organisation.

(5) Though a few companies in the public sector and private sector are valuing their human resources and have reported them, they do not mention as to how they are treating the huge expenses incurred by them on hiring, training and developing their employees. Generally these companies debit all these heavy expenses in their Profit and Loss Account of the year in which they are incurred.