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## HUMAN RESOURCE ACCOUNTING PRACTICES IN HPCL

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**ABSTRACT**

*Despite the technological advances and the increasing importance of computerization, human resources continue to play a dominating role in the effective use of physical and financial resources. Infact the value of human resources is invaluable and cannot be measured accurately. They are the key elements of the knowledge economy. Human resources are recognized as an integral part of the total worth of an organization. Employees are assets that appreciate in value through the skill, knowledge and experience they acquire while working in the organization. Their departure from the organization makes the business lose an essential element of intellectual capital. This loss becomes great if such intellectual element is acquired by a rival business concern. This makes valuation of this asset essential for the success of the company and by reporting it to the public it enhances the image of the company. HRA helps the management to frame policies for human resources. Measurement of investment in human resources will help evaluate the change in human resource investment over a period of time. This paper attempts to discuss in detail the human resource accounting practices followed by HPCL.*

**KEYWORDS**

HPCL, Lev & Schwartz, human resources, human resource accounting, annual report, HR Value.

**INTRODUCTION**

The twenty first century has witnessed globalization of business and service. The role of human forces in the success of any business concern has gained importance as each requires both physical assets and human resources for its success. In the absence of human resources and efforts all the physical assets like buildings, offices, computers etc. become unproductive. Human resources are a true valuable resource that a firm must possess as they are responsible for the effective utilization of all physical and financial resources. Better the quality of human resources better the management and utilization of other resources. They are the key elements of the knowledge economy. It therefore becomes essential that human resources are recognized to be an integral part of the total worth of an organization in the knowledge driven economies. Failure of conventional accounting to treat human resource as an asset has led to the development of 'Human Resource Accounting'.

American Accounting Association (1973) defines Human Resource Accounting as "the process of identifying and measuring data about human resources and communicating this information to the interested parties".

Human Resource Accounting emphasizes the fact that human resources should be treated as assets like physical and financial assets because the quality and caliber of the people working in an organization are the real assets of a firm. Human Resource Accounting is mainly concerned with:

- Identification of data regarding human resources of an organization.
- Measurement of the data in terms of cost and value.
- Communicating this information to the interested parties.

**REVIEW OF LITERATURE**

The concept of human capital is not a recent discovery. Its origin dates back to the late seventeenth century when the economist, Sir William Petty first attempted to estimate the monetary value of population of England in 1681. He considered labour as the 'father of wealth' and stressed that it should be included in the estimate of the total national wealth. The credit for recognizing the value of human resources as an asset goes to William Paton (1962) when he commented, "in a business a well organized and loyal personnel may be a more important asset than a stock of merchandise". However the fact remains that it was Rensis Likert (1967), a Social Psychologist at The institute for Social Research, University of Michigan, who first used the term 'human asset' a term since replaced by human resources. So he originally developed it. Different techniques have been developed to measure the value of human resources. The two main approaches Human Resource Cost Accounting (HRCA) and Human Resource Value Accounting (HRVA) are usually employed for this.

In HRCA, the expenses incurred on acquisition, training and development of human resources are treated as investment and hence shown in the balance sheet as an asset and periodical write off of these investments are charged to profit and loss account. The original cost model of Brummet and others (1968) made the suggestion to capitalize the firm's expenditure on recruitment, selection, training and development of human resources, amortizing such costs over a period and then reporting the net investment in human resources in the Balance Sheet under the heading 'human assets'. During 1968-74 R.G Barry Corporation of U.S.A implemented this method for valuation of human resources and reported the information externally. In 1973 'Replacement Cost Approach' was developed by Rensis Likert and Eric G. Flamholtz. As per this approach the cost of alternative use of employee is value of human resource. Hekimian and Jones (1967) give an 'Opportunity Cost Approach' based on the principle that human assets will be valued while it is scarce.

HRVA is based upon the economic value of human resources to an organization. Hermanson (1964) proposed an 'Adjusted Present Value' model to quantify the value of human capital of a company. He suggested that the amount of future wages payable represent a liability whereas human resources is an asset in the Balance Sheet.

Lev and Schwartz (1971) valued human capital as the present value of future earnings of employee till retirement. Flamholtz (1971) developed 'Stochastic Rewards Valuation' model and determined the value of human assets by aggregating the present value of expected future services of employees. Jaggi and Lau (1974) model considers groups for valuation rather than individuals.

As per Giles and Robinsons (1972) Human Asset Multiplier Model the capitalized value of the company calculated on the basis of price earnings ratio minus net assets are the human resource. Morse (1973) in his 'Net Benefit' method considers that human resources value is equal to the present value of the gross value of services to be rendered by human beings minus present value of the future payments to human beings. Pekin Ogan's (1976) suggested a model known as 'Certainty Equivalent Net Benefit Model' that is the extension of net benefit model of Morse. Certainty with which the net benefit in future will accrue to the organization is the value of human resources. Chakraborty (1976) suggested a model for valuation of human resources known as 'Aggregate Payment Approach'. The value of human resources is calculated by multiplying the average salary with the average tenure of the employee.

Gupta, D.K (1990), Patra, R and Khalik, S.K (2003), Sonara, C.K and Patel, A (2009) conducted a study to know the current status of human resource accounting in the Indian context.

Joshi, U and Reeta (2012) in their paper did a comparative study of HRA system in selected Indian companies. Two public sector and two private sector companies were taken on the basis of their reporting of HRA information in their annual reports. Scores were assigned to the organizations and mean scores for these organizations were calculated on the basis of some important variables. Ranks to the organizations were also given based upon the extent of HRA information reported in the annual reports.

Garg, J (2015) in his study made an attempt to find out the companies reporting HRA information in India and highlight the significance of human resource valuation and methods to measure human resource value.

All the above studies were conducted to find out the current practices followed by the Indian organizations for Human Resource Accounting. The studies concluded that very few companies come forward for reporting Human Resource Accounting as it is not compulsory for them to disclose human resources information in their annual reports. The present paper is an attempt to do the case study of HPCL in detail so that companies not reporting HRA should come forward to do the valuation of HRA as it supplies useful information to take various decisions.

### OBJECTIVES OF THE STUDY

Human capital is now considered to be a critical component that forms the basis of other forms of capital. This led to the emergence of knowledge based industries that viewed human asset valuation as a trend. Through HR valuation the companies are in a position to know the value they would forgo when they are about to lose a person.

The human resource valuation in India is mostly based on the present value of the future earnings of the employees. Despite the fact that it is neither mandatory for the Indian companies to value their human resources nor there are any accepted standards for its valuation the Indian corporate world is evincing a keen interest in accounting for human resource value. In the financial year 1981-82 HPCL started valuing its human resources. Therefore this company is chosen for the study. The specific objectives of the present study are:

- To examine the prevailing HRA reporting practices in HPCL.
- To examine the model used for the valuation of human resources in HPCL.
- To critically evaluate the HRA system of HPCL.

### RESEARCH METHODOLOGY

In the present study most of the secondary data needed has been collected from the published annual reports of the company. The annual reports of HPCL for 2003-04 to 2010-11 were scanned to critically evaluate the human resource accounting information disclosed by the company. The table of trends in structure and value of human resources is prepared after scanning the annual reports to find the reason of variation in the value of human resources of that organization. Various ratios were also calculated to find out that how human resource valuation helps in judging the productivity and performance of human resources of particular organization.

### ABOUT HINDUSTAN PETROLEUM CORPORATION LIMITED

Hindustan Petroleum Corporation Limited, a Fortune 500 company is one of the major integrated oil refining and marketing companies in India. It is a Mega Public Sector Undertaking (PSU) with a navratna status. On July 05, 1952 this company was incorporated in the name of Standard Vacuum Refining Company of India under the Companies Act V11 of 1913. In March 1962 the company name was changed to ESSO Rising Company of India Limited. Finally in July 1974 by virtue of the Lube India and ESSO Standard Refining Company of India Limited Amalgamation Order passed by the Company Law Board the company got its present name Hindustan Petroleum Corporation Limited (HPCL). In 1976 with nationalization the Government of India took over the Caltex Undertaking in India and merged it with HPCL. As HPCL owns the country's largest lube refinery with its world class standard of lube base oils it has given India a firm ground in this sector. HPCL accounts for about 20% of the world market share and 10% of the nation's refining capacity with two coastal refineries, one each at Mumbai and Vishakhapatnam. Since the signing of the first MOU with the Ministry of Petroleum and Natural Gas, Government of India, it has shown excellent performance for fifteen consecutive years up to 2005-06. For excellent overall performance and for being one of the top ten public sector enterprises that fall under the 'Excellent' category it won the prestigious MOU Award for the year 2007-08. The consistent excellent performance of HPCL is attributable to it's highly motivated all India workforce of over 11248 employees (2010-11) working at its various refining and marketing locations. It is a Government of India Undertaking with a strong market infrastructure having an annual turnover of Rs.132670 crores and Rs.143396 crores as sales/income from operations during the financial year 2010-11 that is about 20% marketing share in India among the PSUs.

### HUMAN RESOURCE ACCOUNTING SYSTEM OF HPCL

HPCL considers human dimensions as the key to organization's success. Several initiatives have gained momentum for the development of human resources to meet the new challenges in the competitive business environment. HPCL recognizes the value of human assets that are committed to achieve excellence in all spheres. In the year 1981-82 HPCL started the process of valuation of human resources. Table1 indicates the various variables considered by HPCL for the purpose of valuation of human resources. The data relating to 2006-07 has not been shown as the HRA information has not been disclosed by HPCL in its annual report of the relevant period. The annual report of 2007-08 also does not include the data related to human resource value but relevant information is considered from annual report of 2008-09 onwards.

### THE MODEL USED FOR VALUATION

HPCL uses the Lev and Schwartz model to compute the value of Human Resource assets. The valuation is based on the present value of future earnings of the employees assuming that:

- Employee compensation represented by direct and indirect benefits earned by them on cost to company basis
- Earnings up to the age of superannuation are considered on incremental basis taking the corporation's policies into consideration
- Such future earnings are discounted @ 8.25% during the year 2010-11

TABLE 1: VARIOUS ASPECTS CONSIDERED FOR HUMAN RESOURCE VALUATION BY HPCL

Year	Title of HRA Information	Average Age	Model used for valuation	Discount Rate per annum	Criteria For Discount Rate	Determinants of learn-ings	Treatment of HR costs Revenue/Capital	Other aspects considered
2003-04	HRA	43	Lev & Schwartz	11%	Weighted Avg. cost of capital	Direct & Indirect benefits earned on cost to company basis	Not Reported	Earnings up to age of superannuation incremental basis as per company policies
2004-05	HRA	43	Lev & Schwartz	11%	Same as above	Same as above	Not Reported	Same as above
2005-06	HRA	44	Lev & Schwartz	8%	Not Reported	Same as above	Not Reported	Same as above
2007-08	HRA	44	Lev & Schwartz	8%	Not Reported	Same as above	Not Reported	Same as above
2008-09	HRA	44	Lev & Schwartz	8%	Not Reported	Same as above	Not Reported	Same as above
2009-10	HRA	44	Lev & Schwartz	8.25%	Not Reported	Same as above	Not Reported	Same as above
2010-11	HRA	46	Lev & Schwartz	8.25%	Not Reported	Same as above	Not Reported	Same as above

Source: Annual Reports of HPCL from 2003-04 to 2010-11.

### DISCOUNT RATE AND CRITERIA FOR DISCOUNT RATE

To find the present value of future earnings of an employee it has to be discounted at a particular discount rate. The disclosure of the discount rate is essential from the point of view of the analysts e.g. consider human resource in two organizations with same level of future earnings each using different discount rates for

valuation of human resources. The organization that uses higher discount rates has lesser value of its human resource and vice-versa. From Table1 it is clear that HPCL uses different discount rates in different years. The criteria used by the organization for discount rate is weighted average cost of capital for the year 2003-04 and 2004-05. But there is no reporting for this in the annual reports from 2005-06 onwards.

### DETERMINANTS OF EARNINGS

The value of human resources is measured primarily on the basis of their future earnings. Thus disclosure of what is included in the earnings of human resources is important for the purpose of comparison of human resource value of two organizations. The human resources get both direct and indirect monetary benefits from the organizations in which they are employed. The value of human resources would obviously be greater if both the direct and indirect monetary benefits are included in the future earnings. HPCL clearly indicates in assumptions considered for valuation of HRs that it considers both direct and indirect monetary benefits earned as basis for determination of earnings. Table1 clearly indicates that this basis applies from 2003-04 to 2010-11.

### OTHER ASPECTS CONSIDERED

Assessing the value of human resources really is a complex task that requires a number of aspects to be considered. HPCL disclosed that earnings up to the age of superannuation on incremental basis are considered.

### TREATMENT OF HR COSTS-REVENUE/CAPITAL

The central idea of human resource accounting is that human resource constitute an investment rather than an expense for a firm i.e. employee costs should be capitalized rather than expensed. Some writers state that training is indeed an expense but education and development costs are investments. HPCL has not disclosed this aspect in the annual reports as to how to treat HR costs. The current practice among accountants is to generally treat all such expenditure as expense of the period in which such expenditure is made and accordingly debited to income statements.

### TRENDS IN STRUCTURE AND VALUATION OF HUMAN RESOURCES OF HPCL

Table 2 shows the trends in structure and value of HRs for the year 2003-04 to 2010-11 except the year 2006-07.

### CATEGORIES OF EMPLOYEES

Human Resource profile of HPCL divides its employees into four age groups that are 21-30, 31-40, and 41-50 years and above. Human Resource profile for the year 2010-11 indicates that out of a total employee strength of 11248, 1586 employees belong to the age group 21-30, 1317 employees to the age group 31-40 years, 4421 fall in the 41-50 years age group and the rest 3924 belong to the above 50 years age group. This shows that HPCL has a mix of energetic youth and experienced seniors who harmonize the efforts to achieve the corporation's goals. Two categories of employees i.e. management and non-management are disclosed in different age groups. Human resource valuation is made only for management and non-management employees in total, ignoring age wise categorization.

### NUMBER OF EMPLOYEES AND VALUE OF HUMAN RESOURCES

The trend of human resource value and number of employees shows the reason of the increase or decrease of the value of human resources. It is clear from the table that in the year 2003-04 the total number of management employees was 3594 which ultimately increased to 4938 in the year 2010-11. The percentage of management employees in the total number of personnel has increased from 32.41 to 43.90 during the period of eight years from 2003-04 to 2010-11. This rising trend speaks of the increasing relative importance of management in the organization. The non-management category of employees that numbered 7494 in the year 2003-04 came down to 6310 in 2010-11. The percentage of non-management employees in the total number of staff came down from 67.59 in 2003-04 to 56.10 in the year 2010-11. The table also depicts the value of human resources that was Rs. 4206 crores in 2003-04 that increased to Rs. 11781 crores during the year 2010-11 for the management personnel. The percentage of management value of human resources that was 55.46 in 2003-04 increased to 63.71 during the year 2007-08. The total human resource value for the management and the non-management human resources was Rs. 7548 crores in the year 2003-04 and it increased to Rs. 18493 in 2010-11. Human assets value went up partly due to rise in emoluments and partly due to the growing number of human resources.

TABLE 2: TRENDS IN STRUCTURE AND VALUE OF HUMAN RESOURCES OF HPCL

Year	2003-04		2004-05		2005-06		2007-08 *		2008-09		2009-10		2010-11	
Category	No. of Empls'	Value of HR's Rs. In Crores	No. of Empls'	Value of HR's Rs. In Crores	No. of Empls'	Value of HR's Rs. In Crores	No. of Empls'	Value of HR's Rs. In Crores	No. of Empls'	Value of HR's Rs. In Crores	No. of Empls'	Value of HR's Rs. In Crores	No. of Empls'	Value of HR's Rs. In Crores
Management	3594 (32.41)	4206 (55.46)	3562 (33.73)	4540 (54.94)	3866 (35.87)	6162 (58.10)	4157 (37.97)	7233 (56.82)	4551 (40.47)	8523 (64.83)	4779 (43.33)	9341 (59.67)	4938 (43.90)	11781 (63.71)
Non-Management	7494 (67.59)	3378 (44.54)	6999 (66.27)	3724 (45.06)	6912 (64.13)	4444 (41.90)	6792 (62.03)	5497 (43.18)	6695 (59.53)	4624 (35.17)	6512 (57.67)	6313 (40.33)	6310 (56.10)	6712 (36.49)
Total	11088	7584	10561	8264	10778	10606	10949	12730	11246	13147	11291	15654	11248	18493

Source: Annual Reports of HPCL for 2003-04 to 2010-11

Note: \*Though HPCL does not provide HRA information for the year 2006-07 and 2007-08. The value of HR And other relevant information is available in the Annual reports of 2008-09 for the year 2007-08. For the year 2006-07 information is not available.

### PRODUCTIVITY AND PERFORMANCE RATIOS OF HUMAN RESOURCES OF HPCL

The human resource value data provided by the human resource accounting system when considered along with the traditional accounting data affects various accounting ratios. With the help of valuation of human resources a total picture regarding the resource position of an organization can be perceived.

In the Table 3, an attempt has been made to analyze productivity and performance of the human resources of HPCL by selecting a few parameters such as value per employee, value added per employee, value added to human resources, value per employee to value added per employee ratio, human resource value to total resources and profit before tax to human resources. These ratios for a seven year period from 2003-04 to 2010-11 have been calculated.

TABLE 3: PRODUCTIVITY AND PERFORMANCE RATIOS OF HUMAN RESOURCES OF HPCL

Year	2003-04	2004-05	2005-06	2007-08	2008-09	2009-10	2010-11
Ratio							
Value per employee (Rs. in Crores)	.68 (14.71%)	.78 (25.64%)	.98 (18.37%)	1.16 (0.86%)	1.17 (18.80)	1.39 (17.98)	1.64
Value added per employee (Rs in Crores)	.52 (-5.71)	.49 (-20.40%)	.39 (41.03%)	.55 (34.55%)	.74 (12.16%)	.83 (7.23%)	.89
Value added/Human Resources (Rs. in crores)	.76 (-17.10%)	.63 (-36.50%)	.40 (17.5%)	.47 (34.04%)	.63 (-4.76%)	.60 (-10%)	.54
Value per employee/value added per employee (No. of years)	1.31	1.59	2.51	2.11	1.58	1.67	1.84
Human Resources value/Total Resources value	40.25%	40.78%	38.56%	33.19%	30.41%	33.39%	33.35%
Profits before tax/Human Resources	39.29%	19.86%	2.69%	8.71%	5.42%	13.58%	12.69%

Source: Annual Reports of HPCL for 2003-04 to 2010-11.

### VALUE ADDED PER EMPLOYEE AND VALUE PER EMPLOYEE

A comparison of value added per employee with the value per employee has been made in order to find out whether or not the value added per employee has kept pace with the value per employee over a period of time. Value added is a good indicator of the contribution made by human resources though not entirely or solely. By comparing the growth in value added per employee with the growth in the value per employee, conclusions can be drawn as to whether the human resources are generating the desired return for the organization in relation to the compensation paid to them. Meaningful conclusions can be derived from the comparison of these two ratios that can provide a base for taking strategic decisions.

There is an upward trend in the value of human resources per employee over the period of study. The value per employee increased 2.41 times during this study period. The percentage increase over the previous year in the value of human resources per employee varies from 0.86 to 25.64. The lowest increase over the previous year was in 2008-09 and the highest in 2005-06. The value added per employee stepped up from Rs. 0.52 crores in 2003-04 to Rs. 0.89 crores in 2010-11. If value added per employee is to be compared with the value per employee then we can see that the percentage increase in value per employee over the last year in 2007-08 was 18.37 and this increase in value added per employee during the same period was 41.03. It implies that during this period the employees of HPCL have contributed to the organization at a rate greater than at which their salaries increased. During the year 2004-05 and 2005-06 the percent growth in value added is negative over the previous year whereas there is an increase in the value per employee which means in these years the employees are not able to contribute to the organization despite an increase in their salaries and the same is the position during the period 2010-11. The percent increase in value per employee is 17.98 whereas for value added per employee it is only 7.23. This means that during this period employees of HPCL have generated lesser returns to the organization in comparison to the increase in compensation paid to them.

### RATIO OF VALUE ADDED TO HUMAN RESOURCES

Another use of the human resource accounting data can be to compute the rate at which the organization is deriving the return in the form of value added on its investment base of human resource value. The decrease in the ratio of value added to human resources of HPCL from Rs 0.76 crores in 2003-04 to Rs. 0.54 crores in 2010-11 shows the decrease in productivity of human resources.

### RATIO OF VALUE PER EMPLOYEE TO VALUE ADDED PER EMPLOYEE

The above ratio helps the organization to know the number of years it will take to recover the amount invested in its human resources. As the ratio of value added to human resources shows the decrease in productivity of human resources, therefore it takes more time in terms of number of years to recover the investment made in human resources i.e. from 1.31 to 1.84 years.

### RATIO OF HUMAN RESOURCES VALUE TO TOTAL RESOURCES VALUE

To know the real capital intensity of an organization both physical capital and human capital should be considered. The ratio of human resources to total resources highlights the proportion of human resources in relation to the total resources of the organization. The human resources of HPCL constituted 40.25% of its total resource value in 2003-04. This ratio has declined to 33.35 in 2010-11. This declining percentage shows that the organization has made a higher investment in the physical resources as compared to that in human resources.

### RATIO OF PROFIT BEFORE TAX TO HUMAN RESOURCES

The profit before tax to human resources is an indicator of productivity of human resources. The ratio of profit before tax to human resources has reduced to 12.69% in 2010-11 from 39.29% in 2003-04. This indicates the decrease in the productivity of human resources.

### EVALUATION OF HUMAN RESOURCE ACCOUNTING SYSTEM OF HPCL

HPCL followed Lev and Schwartz model for valuation of its human resources. This model has inherent limitations. By determining the value as the present value of all future salaries accruable to the employees till their retirement the exercise did not take into account the possibility of an employee leaving the organization before retirement. Similarly it was assumed that the employee occupying a particular level would continue to occupy the same till retirement and as a result the possibility of an employee moving from one level to another was not recognized. These two variables are vital for determining the fair value of human resources. Information relating to human resources has been reported by HPCL as supplementary information in its annual report. The human resource information is not included in the financial statement of the company. The data are unaudited and have no significant value at all.

### CONCLUSION

In India, many organizations introduced the system of HRA but the number of these is very low. In spite of the benefits of HRA many organizations stopped reporting HRA information. BHEL that was pioneer in the introduction of HRA in India and R.G. Barry Corporation in the USA both stopped valuing human resources. Human Resource Accounting has a great potential in the modern age of professionalization particularly in the case of labour intensive service industry where human resource constitutes prime resource. HRA information thus would be of immense help in decision making both for internal and external users. Therefore organizations should adopt HRA system.

The conceptual thinking about valuation of human resources is still in a developing stage. No model of HRA is accepted by the accounting bodies all over the world. The models devised so far for valuation of HRA have been developed in the USA taking into consideration the prevailing environment. Most of the companies are using the Lev and Schwartz model with or without modifications as per their convenience. Considering the significance of human resources in knowledge based sectors initiatives should be taken by the government along with other professionals, researchers and accounting bodies both at the national and international levels for the measurement and reporting of such valuable assets. Researchers should come forward to review the models as per the requirements of our country.

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