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## CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
<u>1</u>	<b>Empirical and Qualitative Studies by Analyzing Requirement Issues In Global Software Development (GSD).</b> Rabia Sultana, Fahad Jan, Ahmad Mateen and Ahmad Adnan	<u>1-18</u>
<u>2</u>	<b>Challenges and Opportunities of Technology Transfer Management.</b> Armin Mahmoudi	<u>19-34</u>
<u>3</u>	<b>SMEs Competitive Advantage through Supply Chain Management Practices.</b> Prof. Gyaneshwar Singh Kushwaha	<u>35-50</u>
<u>4</u>	<b>Different Issue for Handling Different Cache Strategies on Usenet.</b> Harish Rohil and Jitender Yadav	<u>51-71</u>
<u>5</u>	<b>Power Quality enhancement in MICROGRID (Islanding Mode) by Using ND - MLI DSTATCOM.</b> M. Manigandan, MIEEE and Dr. B. Basavaraja, SMIEEE	<u>72-90</u>
<u>6</u>	<b>Analysis of Optical Soliton Propagation in Birefringent Fibers.</b> R. Samba Siva Nayak, Suman. J and Naveen	<u>91-102</u>
<u>7</u>	<b>Human Resource Accounting in IT industry (A study with reference to Infosys Technologies Limited).</b> Dr. P. Natarajan and Bashar Nawaz	<u>103-123</u>
<u>8</u>	<b>Solving profit based unit commitment problem using single unit dynamic programming.</b> P.V. Rama Krishna and Dr. Sukhdeo sao	<u>124-146</u>
<u>9</u>	<b>Achieving Optimal DoS Resistant P2P Topologies for Live Multimedia Streaming using Cost function Algorithm.</b> A. L.Srinivasulu, S. Jaya Bhaskar, Ms. K. Deepthi and Dr. Sudarson Jena	<u>147-162</u>
<u>10</u>	<b>Quality of Web Sites – A Study On Some Standard Indian Universities.</b> K. V. N. Prasad and Dr. A. A. Chari	<u>163-182</u>
<u>11</u>	<b>Simulating Complex Environmental Phenomena Using Cubemap Mapping Technique.</b> Movva. N.V. Kiran Babu, Ch. Siva Rama Krishna, M. Hanumantha Rao and V. Venu Gopal	<u>183-203</u>
<u>12</u>	<b>Data Sharing and Querying in Peer-to-Peer Data management System.</b> Jyoti Duhan	<u>204-223</u>
<u>13</u>	<b>Secure File Transmission Scheme Based on Hybrid Encryption Technique.</b> Gaurav Shrivastava	<u>224-238</u>
<u>14</u>	<b>Investigating Flip-Flop Gates Using Interactive Technology.</b> Mr. Amish Patel, Ms. Neha P. Chinagi and Mr. Hiren R.Raotole	<u>239-255</u>
<u>15</u>	<b>B2B Versus B2C Direct Selling.</b> Ankit Chadha and Er. Banita Chadha	<u>256-270</u>
<u>16</u>	<b>Application And Implementation of Crm In Hotels of Developing Cities - A Case Study of Ranchi.</b> Praveen Srivastava, Abhinav Kumar Shandilya and Shelly Srivastava	<u>271-294</u>
<u>17</u>	<b>An Automatic Bacterial Colony Counter.</b> Ms. Hemlata, Mr. Ashish Oberoi and Mr. Sumit Kaushik	<u>295-309</u>

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**Title**

**HUMAN RESOURCE ACCOUNTING IN IT INDUSTRY**

**(A STUDY WITH REFERENCE TO INFOSYS  
TECHNOLOGIES LIMITED)**

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**Abstract:**

Human resource accounting is evaluated as a potential organisational measurement tool. Human being constitutes the most ticklish assets of an organisation. However, the value of this asset does not appear in the financial statement. This paper defines HRA and narrates process of measuring human capital for financial reporting and managerial uses in general and HRA practices adopted by the Infosys Technologies Ltd. in particular.

**Key words:** Human resource accounting (HRA), Accounting history, Human capital

**Preamble:**

HRA involves accounting for people as human assets. Although HRA has important implications for external financial reporting in which the information disclosed in a company's annual report to shareholders, is geared primarily to external users such as stockholders, bankers, potential investors and lenders. Currently, financial accounting treats human resource costs as current expenses that reduce the net income of the company, as opposed to investments that will provide future benefits to the company and that are reported as assets on the company's balance sheet. HRA could be used in some form to improve financial reporting, probably the most important benefit of HRA is that it is a managerial tool. Management can use HRA measures for HR decision making. HRA can be thought of as having three major functions:

1. Providing numerical information about the cost and value of people as organisational resources,
2. Serving as an analytical framework to facilitate decision making,
3. Motivating decision- makers to adopt a human resource perspective.

Flamholtz (1987, 1980) described the HRA paradigm in terms of the "psycho-technical systems" (PTS) approach to organisational measurement. The PTS approach holds that there are two functions of measurement:

1. Process functions in the process of measurement,

2. Numerical or informational functions from using the numbers or measurements.

The one role of HRA measurement is to provide numerical information as an input to management and financial decisions. But another and even more important role comes from the measurement process, from the act of monitoring and quantifying the costs and value of people from a HR perspective.

### **Review of Literature:**

**Vashisht (1993)** in his research paper, “accounting for human resource development”, stated that there is not even a single model which fulfils all the requirements of a model which could help in the process of HRA. Certain model fails to recognize the factors determining the value of human resources whereas others have computational problems.

**Gupta (1997)** in his paper entitled “valuation of intellectual assets and human resource accounting”, focused on the methodology adopted by some of the organization to value their intellectual assets and extends the same methodology to value the human resources associate with the creation of such intellectual assets.

**Gurusamy (1998)** in his article entitled, “Accounting and reporting for human resources”, measured that a proper reporting of human resource in the financial statements of a company will go a long way in giving a fair and complete view of the accounting information, infuse confidence in the people working in the organization, boost their morale and help the management in fulfilling their social responsibility towards their own employees.

From the above outlined it is concluded that there is a need for great deal of research with regard to evolving a system of accounting for human resources.

### **Historical development of HRA:**

The development of HRA has passed through five stages as follows:

- 1960-66 : derivation of basic HRA concepts from related bodies of theory.
- 1967-70 : basic academic research developing measurement models.



- 1971-77 : rapid growth of interest in HRA.
- 1978-80 : period of declining interest in academia and corporations.
- 1981- present : renewed international interest in HRA theory and practice.

### **Significance of HRA:**

Human Resource Accounting is the measurement of the cost and value of people to the organization. It involves measuring costs incurred by the organizations to recruit, select, hire, train and develop employees and judge their economic value to the organization. For a long period, the importance of human resource was not taken care of seriously by the top management of organizations. Therefore, at this juncture, it becomes imperative to pay due attention on the proper development of such an important resource of an organization.

### **Statement of Problem:**

Human resources have certain distinct characteristics from other physical assets like personality, self control, devotion, quality, skill, talents, loyalty and initiativeness. It is basic need of present time to improve productivity that can be improved by the human force. Hence, to encourage it is necessary to account them and take progressive decision for them. The business organisations have now realized that no production and performance is possible without willing participation and support of human skill of the concern. Therefore, it is essential to collect and report the human resource information which is useful for different types of users. In traditional accounting practices, human resource, a vital asset also did not find its place. The expenses incurred in respect of selection, layoff, training, promotion etc of employer are treated as revenue expenditure. It is argued of late that, such expenditures yield benefits to an enterprise in form service rendered by the manpower and such expenditure should be capitalized and shown in the balance sheet. To what extent this fact makes sense, is the motivation of this study. For this purpose, the present study made indepth attempt to study the HRA practices of Infosys Technologies Ltd. (ITL), Infosys Technologies Ltd. is one of the IT- software private sector giants established in 1981 and the first private company adopting the human resource accounting

practices in the year 1995-96. Infosys has been ranked at no.2 among the list of top Indian IT companies by the survey of First Call Research in the month of October, 2010. Now the company employing about 114822 employees that is why valuation of HR has crucial importance.

### **The Objectives of the Study:**

1. To give an overview about different HRA models.
2. To examine the application and progress of HRA in Infosys Technologies Ltd.
3. To project the employees growth and their worth.

### **Hypotheses:**

- H<sub>01</sub> : There is a relationship between total asset and human resource value.
- H<sub>11</sub> : There is no relationship between total asset and human resource value.
- H<sub>02</sub> : There is a relationship between net profit and human resource value.
- H<sub>12</sub> : There is no relationship between net profit and human resource value.
- H<sub>03</sub> : There is a relationship between human resource cost and human resource value.
- H<sub>13</sub> : There is no relationship between human resource cost and human resource value.

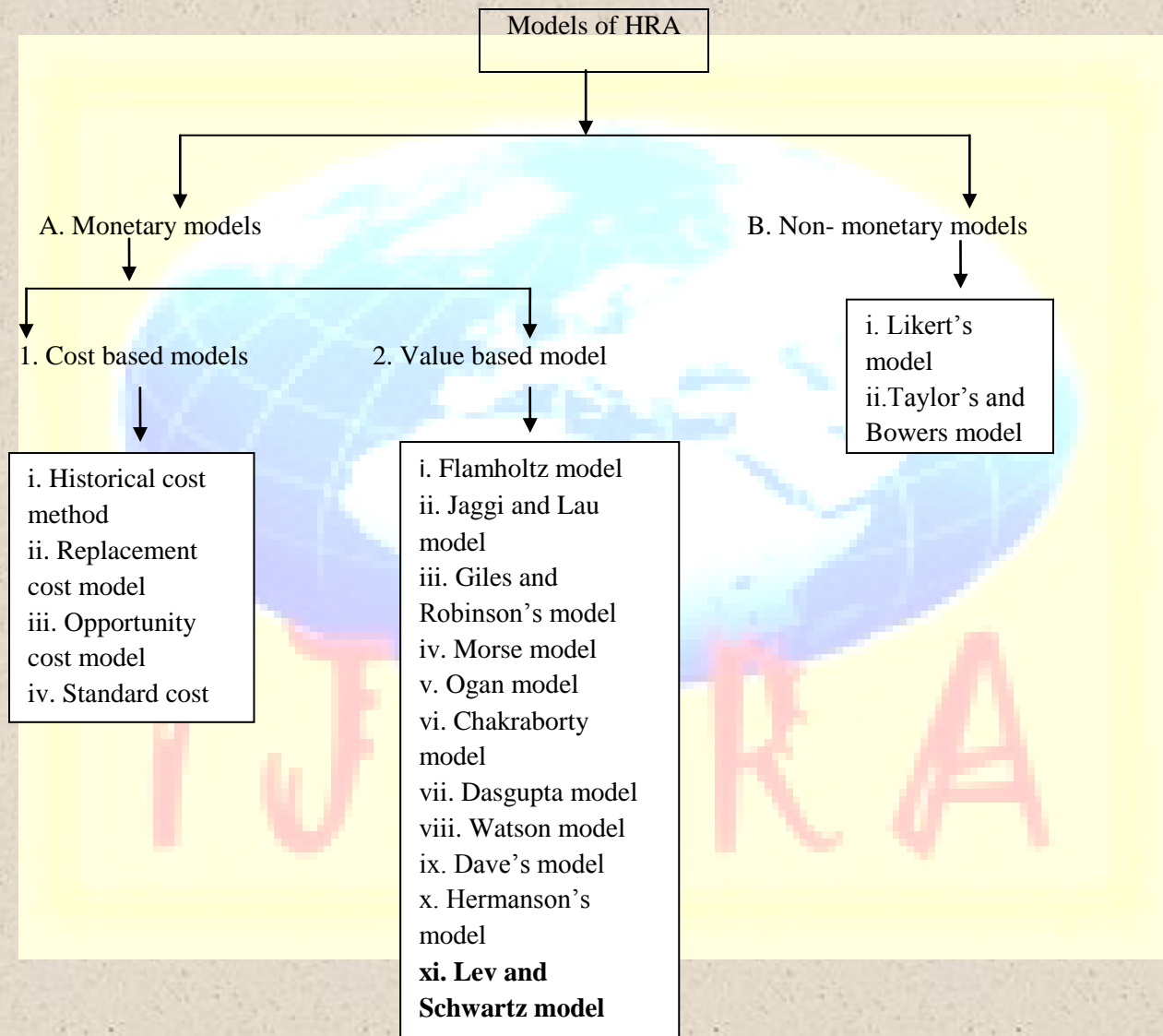
### **Methodology:**

The present study is of Case Study nature. The case being Infosys Technologies Ltd. It is fully based on the information collected by secondary sources available from the corporate office of Infosys Technologies Ltd.

Apart from that, secondary data were obtained from annual reports of the company, the government publications, newspapers, journals, magazines, unpublished PhD thesis, M.Phil

dissertation different websites, books, statements etc. for developing the conceptual base of our study. Finally all the information relating to HRA were collected and analyzed and important inferences were drawn.

**Chart showing HRA models classification**



**Model specification:**

There are several models developed by the experts from time to time on HRA. This study is purely based on Lev and Schwartz model since, it has been widely recognized.

### The Lev and Schwartz model (Present Value of Future Earning Model):

This model has been developed by Brauch Lev and Aba Schwartz in 1971. They are of the opinion, that determination of the total of a firm's labour force is a straightforward extension of the measurement procedure of an individual value to the organisation. They have divided the whole labour force into certain homogeneous groups such as skilled, unskilled, semi- skilled technical staff, managerial staff etc. and in accordance with different classes and age groups. Average earnings stream for different classes and age groups are prepared for each group separately and the present value for the human capital is calculated. The aggregate present value of different groups represents the capitalized future earnings of the firm as a whole. They have advocated the use of cost of capital rate for the purpose of capitalizing the present value of the future earnings of the employees. According to them, the value of human capital represented by a person of age is the present value of his remaining future earnings from his employment. They have given the following formula for calculating the value of an individual:

$$V_r = \sum_{t=r}^T \frac{I(t)}{(1+R)_{t-r}}$$

Where,

- $V_r$  = The human Capital value of a person r years old,  
 $I(t)$  = Individual remuneration per year up to retirement,  
 $R$  = Years old,  
 $t$  = Retirement age,  
 $R$  = Discount rate.

This model is only based on salary paid to a worker, which may be less than what he actually deserves. It does not take account that a worker may leave the organisation at any time before retirement. It also ignores the possibility of workers changing their roles during their career.

The original model of human resource accounting given by Lev and Schwartz ignored the possibility of death prior to retirement age which promote the authors to refine the model by incorporating  $P_x(t)$  the probability of a person dying at age t in the following:

$$\sum (V^i x) = \sum_{t=x}^T P_x(t+1) \sum_{i=x}^T \frac{I^i}{(1-r)^{i-x}}$$

Where,

$I^i$  = Future annual earning,

$P_x(T)$  = The probability of a person dying at age t, and

$\sum (V^i x)$  = The expected value of an individual's human capital.

The model given by Lev Schwartz can be considered as an improvement over the cost models as it seeks to value the human resources of an organisation on the basis of the economic value of the employees of total organisation.

In addition, **quadratic trend** has been used (because the graph of past data of employees shows the parabolic curve) for projecting number of employees for the next five years starting from 2010-11 to 2014-15 which is given as follows:

$$Y = a + bx + cx^2$$

Simple **linear regression** also has been used for predicting the value of the employees for the aforesaid period, which is given as follows:

$$Y = a + bx$$

**Correlation, simple average and percentage technique** has also been used for this study.

### Scope of the study

This is a micro level study. The study is confined to the analysis of HRA Practices in Infosys Technologies Ltd. The period of the study extends from 1999-2000 to 2009-2010. Thus, period of 11 years has been taken for the purpose of an objective analysis of the study. The study mainly covers HRA Practices in Infosys Technologies Ltd.

### Progress of HRA in Infosys Technologies Limited:

The HRV is an important concern for success of the business organisation. There could so many factors that could result in employee value creation or value destruction. However, when more and more employees are recruited, what is the impact on HRV is the prime motive of study in table given below.

Financial Year	SWP/SD			SP (Tech. & Others)			Total		
	No. Of Emp.	HRV (In Crs.)	Avg. HRV (In Rs.)	No. Of Emp.	HRV (In Crs.)	Avg. HRV (In Rs.)	No. Of Emp.	HRV (In Crs.)	Avg. HRV (In Rs.)
1999-00	2854	769.84	2697407	912	175.86	3834709	3766	945.7	2511152
2000-01	4292	1965.14	4578611	1097	272.28	4760812	5389	2237.42	4151828
2001-02	7641	4406.53	5766955	2190	716.89	6775158	9831	5123.42	5211494
2002-03	9405	8662.99	9211047	1333	876.16	11985361	10738	9539.15	8883544
2003-04	14521	10078.91	6940920	1355	699.05	9373916	15876	10777.96	6788839
2004-05	23855	19607.78	8219568	1779	1532.18	14363024	25634	21139.96	8246844
2005-06	34747	26550	7640947	2003	1784	8906640	36750	28334	7709932
2006-07	49495	43336	8755632	3220	3301	10251553	52715	46637	8847007
2007-08	68156	53592	7863138	4085	3860	9449204	72241	57452	7952825
2008-09	85013	92331	10860810	6174	6490	10511824	91187	98821	10837181
2009-10	97349	95600	9820337	7501	6533	8709505	104850	102133	9740868
<b>Forecasted No. of Emp. and Their Respective Monetary Worth</b>									
2010-11	HRV - Human Resource Value						115505	112653	9753084
2011-12	SD - Software Delivery						133021	130467	9808000
2012-13	Tech. - Technical						151636	149398	9852410
2013-14	SP - Support						171351	169448	9888941
2014-15	SWP - Software Professional						192165	190616	9919392

**Table 1** Year Wise Observed Forecasted Average HRV of Infosys Technologies Ltd.

Source:

Annual Reports of ITL

Table 1 highlights the observed and forecasted average HRV of Infosys Technologies Ltd. during the period from 1999 through 2015.

Regarding software professional employees, the table reveals that there has been gradual increase in total number of employees and their respective worth in the company till 2004. However, from the year 2005, there is high increase in both variables viz. Employees appointment and their total worth in the company. The reason could be explained by the high growth of company in terms of market capitalisation during the last five years of study. The interesting point worth to mention here is that, there is no impact on recruitment of employees by the financial depression occurred in 2008, implies by and large the efficiency of the company to tackle even the worst situation. Nevertheless, there has been continuous fluctuation in average human resource value from 2004, the reason could be explained by ineffective recruitment, training or poor employer- employee relationship.

Similarly, concerning support employees, table reveals that unlike software professional employees, there has been a steep fall in support employees in 2003, along with human resource value in 2004. However, like software professional employees, the analysis shows that there is also a fluctuation concerning human resource value from the year 2004, the forecasted employee rate is found to be slightly increasing somewhat at constant rate. Similarly, for human resource value, there has also been a wide fluctuation in observed frequencies. However, the same is seen vanishing over forecasted period of time, that is the forecasted HRV rate is found to be slightly increasing in the same way as the predicted employees till 2015. The reason might be effective employee hiring and their retention in the company.

The overall analysis highlights that, by and large the appointment of employees and their total worth in the company has been increased throughout the study period, particularly during the last five observed years. However, there has been a continuous fluctuation in average human resource value since 2004.

### **Value Addition in HR:**

Like customers, the retention, growth and evaluation of human resource is also equally important for any organisation. The fact that their assets have a dominant role in company profits

and conveys an important information for organisation in general and management in particular. This phenomenon could help the management in recognising the worth of an employee against the costs incurred by the company during his tenure. In this context the following table has been drawn to know the growth of HRV in terms of percentage and value of HR per employee has been analysed. And (value addition over the previous year/HRV in the base year\*100 & HRV/No. Of Employees) formula has taken into consideration.

**Table 3 Growth of HRV Addition and HRV per Employee in Infosys Technologies Ltd.**

Financial Year	HR Value	Value Addition Over the Previous Year	%age	No. of Emp.	Value of HR Per Emp.
1999-00	945.7	-	-	3766	0.25
2000-01	2237.42	1291.72	136.6	5389	0.42
2001-02	5123.42	2886	129	9831	0.52
2002-03	9539.15	4415.73	86.2	10738	0.89
2003-04	10777.96	1238.81	13	15876	0.68
2004-05	21139.97	10362.01	96.1	25634	0.82
2005-06	28334	7194.03	34	36750	0.77
2006-07	46637	18303	64.6	52715	0.88
2007-08	57452	10815	23.2	72241	0.8
2008-09	98821	41369	72	91187	1.08
2009-10	102133	3312	3.4	104850	0.97

HR:

Human Resource, HRV: Human Resource Value, Source: Annual Reports of ITL

Table 3 highlights the growth of HRV addition and HRV per employee in Infosys Technologies Ltd. The analysis shows an increasing trend in the human resource value and value of human resource per employee. From the year 2003-04 to 2009-10 there is a fluctuation in the value of human resource per employee and decreasing trend in terms of percentage of human resource value. The reason could be explained by the ineffective recruitment of the personnel or poor relationship between employer and employee in the company. The table also depicts that there has been an enormous growth in the addition of human resource value in 2004-05, 2006-07 and 2008-09 respectively which leads to increase in the percentage also. The reason could be



explained here the effective recruitment and better employer employee relationship in the company for the said years.

The overall scenario reveals that there is a link between human resource value and number of employees of the company. The fact is that the diminution or increment in the number of employees can lead to reduction or increment in the human resource value respectively of the company.

### **Share of HRV in Total Assets:**

In addition to strong customer base, the aim of every business organisation is to increase its assets which in turn helps in diversifying the business. The assets of the company by and large comprises of fixed, variable and intangible assets. The following table shows the share of HRV in total asset of Infosys Technologies Ltd, for that  $(HRV/TA*100)$  formula has been analysed.

**Table 4 Share of Human Resource Value in Total Asset of Infosys Technologies Ltd. ( In Cr.)**

Financial Year	Net Profit	HRV	Total Asset	%age to Total Asset
1999-00	135.26	945.7	NA	-
2000-01	293.52	2237.42	8316.72	26.9
2001-02	628.81	5123.42	11889.06	43.09
2002-03	807.96	9539.15	18876.26	50.54
2003-04	957.93	10777.96	20765.68	51.9
2004-05	1243.47	21139.97	32668.11	64.71
2005-06	1904	28334	47806	59.27
2006-07	2421	46637	76586	60.89
2007-08	3783	57452	100328	57.26
2008-09	4470	98821	144479	68.4
2009-10	5819	102133	152732	66.87

*HRV: Human Resource Value, Source: Annual Reports of ITL*

Table 4 highlights the contribution of human resource value in relation to total assets of the company from the period of 1999 through 2010. The analysis shows an increasing trend in share of human resource value in total assets of the company, particularly in the initial three years and also in the year 2005. The contribution of human resource value however, has been reduced in the year 2006, 2008 and 2010 respectively with a minimum reduction of about 6% during 2005-06. The reason could be explained by ineffective training and development programme among employees from time to time, over estimation of man power recruitment or poor relationship between the employer- employees. Nevertheless, the overall result suggests that there is an immediate link between the human resource and the total asset of the company. The fact that the reduction in assets like human resource can lead to reduction in the total assets of the company.

Correlation between human resource value and net profit ( $r_1$ ) = 0.98, which is positive as well as significant.

Correlation between human resource value and total asset ( $r_2$ ) = 1, which is perfectly positive as well as significant.

### **HRC in HRV and Net HRV to HR Cost:**

Whatever be the asset it should yield income to the owner and it also incurring some costs. In this phenomenon human resource is the most important intangible assets for every organisation. For acquiring, developing or replacing its human resource it incurred some costs. In respect of incurring costs, the organisation also valuing its human resource value for the sake of interested parties. The following table shows the share of human resource cost in human resource value and net human resource value to human resource cost of Infosys technologies ltd. For this purpose ( $HRC/HRV*100$ ) and ( $HRV-HRC$ ) formula has been analysed.

**Table 5 Share of HRC in HRV and Net HRV to HR Cost of Infosys Technologies Ltd. (In Crs.)**

Financial Year	Model	HR Cost	HR Value	%age of HRC in HRV	Net HRV
1999-00	L & S	166.06	945.7	17.6	779.64
2000-01	L & S	334.56	2237.42	15.0	1902.86

2001-02	L & S	717.78	5123.42	14.0	4405.64
2002-03	L & S	1117.87	9539.15	11.7	8421.28
2003-04	L & S	1677.12	10777.96	15.6	9100.84
2004-05	L & S	2450.96	21139.97	11.6	18689.01
2005-06	L & S	3539	28334	12.5	24795
2006-07	L & S	4801	46637	10.3	41836
2007-08	L & S	7112	57452	12.4	50340
2008-09	L & S	8878	98821	9.0	89943
2009-10	L & S	11405	102133	11.2	90728
Average	-	Avg. HR cost	Avg. HRV	-	Avg. Net HRV
1999-2010	-	3836.30	34830.97	-	30994.66

HR :Human Resource, HRV: Human Resource Value, L & S: Lev and Schwartz  
HRC: Human Resource Cost, Source: Annual Reports of ITL,

Table 5 highlights the net human resource value to total human resource cost. It is clear from the table that the human resource cost is increasing almost double for the initial three years but there is slight increase in the same for remaining periods and the scenario of human resource cost in terms of human resource value of the company reveals that there is a negative trend. The reason could be explained by effective cost management, economies of the scale, technology, innovation etc. Table also reveals that there is a positive trend in the year 2003-04, 2005-06, 2007-08 and 2009-10 respectively, the reason here could be huge investment on employees, increment in salaries or declaring bonus to the human resource of the company. Nonetheless, the HRV and Net HRV have also been found increasing in all three years in live with the HR cost. But for the remaining periods it is increasing, although there is slight decrease in the increasing level. Overall, it can be concluded that there is an immediate link between the human resource cost and human resource value of the company. If the human resource cost will increase lesser than the human resource value then the share of both will go down and vice- versa, which shows the good sign for the company and it also can be concluded that the HRV contribution to the Infosys technologies ltd. is remarkable.

Correlation between human resource value and human resource cost ( $r^3$ ) = 0.99, which is positive as well as significant.

**Conclusion:**

The history of HRA illustrates how intellectual conceptualisation and empirical testing in academic settings can serve industry's practical needs. It converse value addition, HRV in total asset and evaluate the worth of people by using most acceptable and accurate Lev & Schwartz model and costs incurred on it with changes over the study period. Manpower costs forms the major element in operating cost. Those companies who could control these costs and use the workforce optimally become the ultimate winners with crowning glory. It also helps the management to determine how far profits are utilised for investment in people. In a nutshell, this paper reveals that HRV has been increasing consistently over the study period and its share in total assets has also increased. This indicates the best HR practices of Infosys ltd. However, the system could be fine tuned by incorporating the following suggestions:

- ✓ Company must consider the role of employees when intra shifting occurs (means transfer from one department to other).
- ✓ Company must also consider and evaluate the team work of employees periodically.
- ✓ By adopting Lev & Schwartz Model Company need not ignore the security, bargaining power, skill and experience of personnel and
- ✓ The company must consider the possibility and probability of an individual leaving the organisation for reasons other than death or retirement and endeavour to retain them with suitable strategies.
- ✓ Value addition should be regularly monitored and enhanced in an acceptable form.

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