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## Human capital value creation practices of software and service exporter firms in India

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## Keywords

content analysis, human capital, India, software and service exporters, value creation

## Disciplines

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***HUMAN CAPITAL VALUE CREATION PRACTICES OF SOFTWARE AND  
SERVICE EXPORTER FIRMS IN INDIA***

by

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### ***Abstract***

This study explored the human capital (HC) value creation practices of the top seventeen software and service exporter firms in India. The study used HC disclosure attributes as a tool to the contents of the annual reports for the year 2003-04, to evaluate the type and amount of HC disclosed by the software firms. The study conducted semi-structured interviews with the Heads of Human Resources of fourteen software firms to obtain a greater understanding of the similarities between reporting and managed HC practices. The study identified most reported and least reported attributes of HC using content analysis and explained their reporting of value creation using interviews and Resource Based View (RBV). The findings suggest that the HC reporting practices were consistent with interview findings. The frequency of HC attributes reported followed the extent of the management's perception of HC value creation to the firm.

Key words: content analysis, human capital, India, software and service exporters, value creation,

## ***1. Introduction***

The purpose of this study is to explore the human capital (HC) value creation practices of the software and service exporter firms in India. The American Accounting Association (1973) defined human capital (resource) reporting as “the process of identifying and measuring data about human resources and communicating this information to interested parties. Value is defined in economic terms, and framed in terms of shareholders value perspective. According to Mouritsen, Larsen and Bukh (2001), value creation is the process of transforming or improving corporate routine and practices.

The knowledge-based software and service exporter industry in India by its nature is HC intensive with physical capital requirements confined to office space and hardware. In this industry production activity embodies technological learning that requires skills, knowledge and capabilities (Patibandla & Petersen, 2002). HC is the most important ingredient that helps in value creation in a knowledge-based economy - those that use knowledge as a source of competitive advantage (Edvinsson & Sullivan, 1996).

In a knowledge-based economy, technology, connectivity and human capital play an increasingly dominant role which reflects in the financial results of a firm (Low, 2000; Seetharaman, Sooria, & Saravanan, 2002). This is due to economies experiencing exponential rise in the demand for knowledge-based products and services (Wisner, 2001) vested in knowledge, information, intelligence, know-how,

and awareness of people (Abeysekera & Guthrie, 2004). Thus there is a growing need among firms for understanding, recognising, managing, measuring and reporting HC. This is more so for the fact that knowledge of workers could seldom be reproduced by competitors to achieve competitive advantage (Bart, 2001).

The role played by software industry in the contemporary world arouses the need for further analysis of the industry practices on HC. Rapid globalisation of software industry in recent years has focussed a great deal of attention on India whose software industry is a growing part of the international division of labour in software (Arora, Arunachalam, Asundi, & Fernandes, 2001). Understanding India's success in the software industry with the use of HC may assist other developing countries to follow its example to create a competitive advantage in their software industry.

This study has used the resource-based view to argue that the software firms use HC, one of their influential assets for generating and sustaining superior returns. To accomplish the aim of exploring HC value creation practices of the software and service exporter firms in India this study set the following objectives: First, to use HC disclosure content attributes from existing literature as a tool to evaluate the type and amount of HC disclosure (Abeysekera & Guthrie, 2004); Second, to apply the HC disclosure content attributes to the annual reports for the year 2003-04 of the top 17 (by export revenue) listed software and service exporter firms in India; Third, to conduct interviews with the Heads of Human Resources of fourteen of the above 17 software firms to obtain a greater understanding of the similarities between reporting and managed HC practices based on a previously established questionnaire tool

(Abeysekera & Guthrie, 2003). Data thus collected has been qualitatively analysed to understand value creation practices adopted by the firms.

To address the aims of the study, the following section provides a review of the literature on HC reporting practices. Section three outlines the theoretical framework, resource-based perspective. Section four outlines the research methods adopted, namely, content analysis and semi-structured interviews. Section five outlines the results and discussion and section six gives the conclusion.

## **2. *Literature Review***

This section of the paper reviews prior studies examining the relationship between HC and value creation and finally the various studies that have used content analysis technique to examining the HC reporting practices.

### **(i) Relationship between HC and value creation**

The general adage “what is measured is managed” leads to understand that the firms’ intention would be to measure HC to manage productively their firms. Olsson (2001) argued that the firm would disclose its personnel policy by managing, measuring and reporting HC since disclosures give transparency and transparency gives the stakeholders information they need to predict the future value of HC. The potential advantages for firms are that in reporting their HC not only communicate the firm's advantages, but could also attract valued resources (Mouritsen, Bukh & Marr, 2004). Skoog (2003) found a positive correlation between HC reported and profitability in the long run. According to the VCI (value creation index) study conducted by Low (2000), a top non-financial performance driver for financial services is human capital.

Wright and Snell (2005) argue that in a knowledge-based industry, value creation can be achieved by giving attention to skills, knowledge, capability and commitment of workforce.

The value of HC is distinct in two types of firms in relation to how firms create value: First, professional firms use HC as a direct resource, and second, other firms (such as computer firms, high-technology firms and software firms) use HC as indirect resource (Edvinsson & Sullivan, 1996). Both types of firms create value from the commercialisation of the knowledge created by their employees. However, Edvinsson and Sullivan (1996) suggest that it is not the store of knowledge in employees but the ability of the firm to leverage knowledge that drives the value creation. A successful firm would understand the expectation of shareholders and their risk perception (Anderson, 2000) and transform HC capabilities of the firm to better meet expectations of shareholders (Bassi, Lev, Low, McMurrer, & Siesfeld, 2000; Meer-Kooistra & Zijlstra, 2001). Therefore, in the context of software firms, if the firm efficiently manage and report its HC, it would result in increase in the shareholder value.

There has been a shift in the outlook of management towards employees and contribution of employees to the firm (Bassi et.al., 2000). Firms have realized that HC practices, and their reporting to shareholders play an important function in firm performance (Boudreau, 1991; Wright & McMahan, 1992). The HC practices include acquisition, development, allocation, replacement or retention of employees (Flamholtz, 1972). Selective staffing, comprehensive training, employee empowerment, participative problem solving, incentive compensation, job rotation



and teamwork can increase value creation of the firm by transformation of processes (Youndt, Snell, Dean, & Lepak, 1996). For a software firm, a key challenge is to acquire and retain the technical and business knowledge and expertise for value creation (Nowak & Grantham, 2000).

### (iii) Human Capital reporting practices

Some researchers have performed content analysis on annual reports to explore HC reporting practices of firms either HC as a resource category of intellectual capital or HC as a stand-alone resource category. The studies exploring HC as a resource category of intellectual capital includes Petty & Guthrie (2000) in Australia, Bontis (2003) in Canada, April, Bosma and Deglon (2003) in South Africa, Abeysekera and Guthrie (2003) in Sri Lanka and Brennan (2001) in Ireland. Studies exploring HC as a stand-alone resource includes Abeysekera & Guthrie (2004), Subbarao & Zeghal (1997) in six different countries and Olsson (2001) in Sweden.

Though previous studies have examined HC reporting practices of firms belonging to different industry sectors and different countries, there is limited in-depth examination of such practices in relation to a specific knowledge-based industry sector such as software and service exporter firms. It is also notable that the majority of studies had the focus of HC reporting practices of firms in developed nations with the exception of Abeysekera and Guthrie (2003, 2004) studies in Sri Lanka. Generally, there has been a limited investigation of HC reporting practices of firms in developing countries, and specifically the literature is dearth in relation to a specific industry. This paper attempts to fill in this gap in the literature.

### **3. *Theoretical Framework***

In the last decade, the resource-based view (RBV) of the firm has gained much attention in the field of strategic management, economics, and organization theory, with useful connotation to accounting literature (Maijoor & Witteloostuijn, 1996; Nerdrum & Erikson, 2001; Peteraf, 1993). Its usefulness for such theoretical interpretation is empirically validated through evidence-based research (Galbreath, 2004; Hall, 1992). Wernerfelt (1984) has noted that RBV is built upon the view that a firm's value creation is largely determined by the resources such as assets and/or capabilities it owns and controls.

According to RBV, assets may be tangible or intangible which are 'owned' and 'controlled' by the firm (Collis, 1994). Examples include: in-house knowledge of technology, and employment of skilled personnel. Capabilities are intangible bundles of skills and accumulated knowledge (Nelson & Winter, 1982). Capabilities are the firm's capacity to deploy resources that have been purposefully integrated to achieve a desired outcome (Hanson, Dowling, Hitt, Ireland, & Hoskisson, 2004).

Barney (1991) suggests that firms gain a competitive advantage when their assets and capabilities possess specific characteristics; rare, valuable, difficult to imitate and non-substitutable, they represent a critical source for competitive advantage in transforming and improving corporate routines and practices (John & Harrison, 1999). The study conducted by Galbreath (2004) supports the RBV posits that only resources that meet certain special characteristics are capable of generating and sustaining firm success. Galbreath concluded that in pursuit of competitive advantage, investment of

time and money in intangibles such as HC must be given strong consideration in relation to the firm's other resources.

RBV explains that resources are made productive and valuable by how this resource is managed and developed (Kor & Leblebici, 2005). Since the focus of RBV is the efficient management and use of resources and capabilities, RBV becomes useful in interpreting the HC value creation practices adopted by software firms in this study.

#### **4. *Research Methodology***

The methodology used is a combination of: content analysis of annual reports for the year 2003-2004 of the top 17 software and service exporter firms listed on the Mumbai Stock Exchange and semi-structured interviews with senior HR executives of 14 of the top software firms.

##### **1. Content Analysis**

Content analysis of annual reports has been carried out in several HC practices studies (Abbott & Monsen, 1979; Abeysekera & Guthrie, 2003; Choon, Smith, & Taylor, 2000; Guthrie & Mathews, 1985; Guthrie & Petty, 2000; Olsson, 2001; Subbarao & Zeghal, 1997). Annual reports are selected as source data for this study since they express corporate interest in a discursive and concise manner (Abeysekera & Guthrie, 2003). The corporate annual report is viewed as a means by which firms seek to establish an image in the public sphere and through which the firm identifies itself with shareholders (Guthrie & Petty, 2000). Studies confirm that annual reports

provide a special communication opportunity for firms to go beyond reporting financials (Cameron & Guthrie, 1993) and to prove their leadership and vision to reflect the values of the firm (Niemark, 1995).

Large firms are likely to take lead in the area of voluntary reporting (Chow & Boren, 1987; Guthrie & Petty, 2000; McKinnon & Dalimunthe, 1993; Mitchell, Chia, & Loh, 1995; Morris, Ho, Pham, & Gray, 2004). The 17 top software and services exporter firms in the sample account for 65% of the total IT software and service exporters.

#### Procedure of content analysis

To carry out content analysis on the annual reports, the HC items in the annual report for the year 2003-2004 were coded into a coding sheet. This study analysed HC disclosure of annual reports which are voluntarily disclosed and are not mandated by accounting standards or company law (Abeysekera & Guthrie, 2004; Guthrie & Petty, 2000). The framework for measuring HC is adopted from the study by Abeysekera & Guthrie (2003). The above study had 25 HC attributes (items). This study added “Employee attrition and retention” attribute based on the pilot study findings from software and service exporter firms, which highlighted the influence of attrition rate of employees in their HR practice. This attribute is important for this study since a high attrition rate prevails in the software market worldwide in general (Rathi, 2005) and India in particular (NASSCOM, 2004). Moreover, retention of technical and business knowledge and expertise is essential for value creation (Nowak & Grantham, 2000).

Operational definitions of HC items in the coding framework were based on previous study by Abeysekera & Guthrie (2004b). The frequency of occurrence of each HC attribute was recorded in the coding framework which was determined by the number of times a HC attribute was described either qualitatively (non-numerically and non-fiscally) or quantitatively (numerically or fiscally). A HC item was coded “1” if it was reported in some form (discursive, numerical, charts or photos) and “0” if the attribute did not appear in the annual report. Thus since each item is coded zero or one, indicating the absence or presence of the attribute under analysis, the resulting scale varies between zero and the number of times the attribute is being investigated (Abbott & Monsen, 1979).

#### Validity & Reliability of content analysis:

Both the researchers re-examined the contents of the annual reports after a time interval to confirm consistency in identification of the HC items in annual reports to check inter-coder reliability and intra-coder reliability as suggested by Krippendorff (1985) and Weber (1990). Data accuracy was obtained since the study used pre-defined content analysis framework used in the literature (Abeysekera & Guthrie, 2004b; Guthrie & Petty, 2000). The data satisfied ‘construct validity’ (Singleton & Straits, 2005) as it used empirical data that supported the operational definitions of the concepts from previous studies.

## 2. Interviews

This study carried out fourteen semi-structured interviews to strengthen the analysis of the results and to understand HC management practices adopted within the firms in the sample.

In-depth semi-structured interviews were conducted in two phases. The first phase consisted of three pilot interviews of the publicly listed software firms, which did not belong to the top 17 listed firms analysed in this study using a semi-structured questionnaire framework. The purpose of the pilot study was to establish validity of the previously established questionnaire instrument in the context of the software industry in India, thereby enabling an effective interview process in phase two. This first phase also helped in understanding HC issues existing in Indian software firms. This resulted in adding an attribute, “employee attrition and retention” to the previously established coding framework and interview questionnaire.

The second phase comprised interviews conducted with the Human Resources (HR) heads of the software and service exporter firms selected for the study. The questions in the interview questionnaire were semi-structured (See Appendix I) and arranged around the coding framework of HC attributes in content analysis (Abeysekera & Guthrie, 2004a; Abeysekera & Guthrie 2004b).

To ensure the reliability and validity of the data collected from the interviews, several steps were taken to reduce threats from observer-caused effects; observer/interviewer bias; data access limitations; and complexities and limitations of human mind as suggested by McKinnon (1988). The researchers conducted themselves professionally encouraging free interaction to reduce observer-caused bias. Prior permission was obtained from the CEO of the firms that helped in getting greater respondent co-operation. This reduced data limitation bias to a great extent. The researchers took notes while interviewing, which was later cross checked for consistency. Analysis of

the data was separated from collection of data by space of time to avoid contaminating the results with observer bias. Probing questions were asked when more information was required and the interview was informal putting the respondent at ease to curtail the problems caused by complexities of human mind.

## **5. *Analysis and Interpretation of data.***

The annual reporting of HC items are classified and summarised in Table 1 as most reported and least reported<sup>1</sup>. The extent of HC reporting found in annual reports and the management practices of the firms for value creation is discussed below.

### **I. *Most reported***

#### **Employee featured (243 frequencies) Employee thanked (320 frequencies)**

Featuring employees and thanking employees for their contribution and reporting about the good relation helps in motivating the employees, increase their loyalty to the organisation enabling them to play a role model to other employees. According to the respondents, the firms thank, encourage and motivate employees by giving recognitions and awards. Each firm has annual functions in which exceptional performers are recognized and awarded. A lot of importance is given to such functions that are celebrated at a grand scale. Thanking and appreciation is also in the

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<sup>1</sup> Attributes that had frequency count of 35 or more frequency counts were considered as most reported and those that had frequency count of less than 35 were considered as least reported. Ignoring the two skewed attributes namely 'employee thanked and employee featured' that had an unusually high frequency count due to unique situation, the highest (74) and the lowest (0) frequency were added and simple average taken. This gave an answer of approximately 35 that was considered as the cut-off for high frequency. Any frequency below this point was considered as least reported.

form of emails, appreciation letters, token gifts and the like. All firms give these awards in a function mainly to publicise their top performers.

**Table 1**

Reporting frequency of HC attributes of seventeen firms

<b>Most reported attribute [frequency count]</b>	<b>Least reported attribute [frequency count]</b>
Employee thanked [320]	Equity issues based on gender, race, religion and disability [18]
Employee featured [243]	Employee safety [11]
Employee know-how [74]	Median age of employees [5]
Employee involvement in the community [69]	Expert seniority [3]
Employee numbers [68]	Union activity [0]
Education [60]	
Training [52]	
Career development [46]	
Employee benefits [38]	
Professional experience [35]	
Vocational qualifications [35]	
Entrepreneurial spirit and innovativeness [36]	

All firms have their own intranet and in-house newsletters. Employees are encouraged to write articles in their newsletters. Newsletters & intranet feature employees getting awards & recognition. Top performers share their experiences and employees can interact with their leaders. Some firms encourage employees to write articles in journals and employees of few firms have published books demonstrating their expertise. While analysing this from the point of view of RBV, the software firms have realized that their HC is strategically valuable and cannot be imitated. As Roos (1998) points out, sharing of knowledge result in increasing returns. The more



knowledge is developed, the more knowledge can be leveraged. The value of HC is increased multifold when all employees learn and follow the best practices. The knowledge and experience shared could be leveraged by transforming individual learning into organisational learning thus making it into firm's structural capital (Lank, 1997).

**Training (52 frequencies), education (60 frequencies) and know-how (74 frequencies)**

The heads of HR of the software firms that participated in the interviews insisted that training and education is the key to improve the employees' competence. To quote a respondent

*“Each firm is facing ‘margin’ pressure as customers expect both quantity and quality of work. We expect all jobs to be well groomed in our firm and this could be achieved only by continuous training”.*

Though each firm has a different training schedule some features were common for all firms. The firms were particular in training new entrants in those skills that help them to have a smooth induction. The new entrants were given training in various fields like technical skills, behavioural skills, cultural skills and customer relation skills. Entrants who had prior work experience were trained in certain fields to suit their new job. One feature that was common to all firms was that firms insisted on continuous on-going training to their employees. Each firm has its own learning center that mentors and counsels the employees training schedule. Some firms have tie ups with external universities and employees are encouraged to pursue higher studies at cost of the firm.

Generation of firm performance is linked to skills, expertise and know-how of managers (Lado, Boyd, & Wright, 1992; Lank, 1997). Training and education

enhance the knowledge and skills of the employees. Among the organisational capabilities that have been posited as potent sources of sustainable competitive advantage, the most important is learning (Teece, Pisano, & Shuen, 1997). As envisaged by RBV, a firm increases its value by developing firm-specific capacities in its HC (by training and education) that cannot be imitable. The software firms highly value these attributes of HC and report more about them in their annual reports. This is evident from the following comment by a HR head.

*Keeping the individual in mind, we have numerous opportunities for growth & development with world-class training facilities. Our training programs are among the best in the IT industry equipping our people to be qualified professionals in their chosen field. We understand the challenge of time head-on...and hence we keep ourselves abreast of the changing times and provide training to address the real world needs and in doing so we stand out of the crowd”.*

#### **Employee involvement in Community (69 frequencies).**

Community activity is very important for a country like India where one can find a yawning gap between the rich and the poor. Of the one billion population of the country, 300 million people live in absolute poverty with no proper food, clothing and shelter (Planning Commission of India, 2002). It is imperative that the firms come forward to help the poor and downtrodden to bridge the gap and those that involve in community activities tend to report on their community involvement activities to its stakeholders.

Another reason for reporting may be societal expectations that firms employ their resources in a socially responsible manner have grown exponentially over the past three decades (Johnson & Brennan, 2002). Socially responsible firms consider the full scope of their impact on communities and the environment when making decisions, balancing the needs of stakeholders with their needs to make a profit (Doane, 2005).

The firms undertake community activities like slum and village welfare, health, hygiene, education and houses for poor, women and children. Maintenance of parks, local police station, lakes and surrounding areas is also carried out. The firms encourage its employees to participate in community activities. Most of the firms have formed foundation trusts and use the funds for the above purposes. The firms also help the community at times of natural calamities like tsunami and social calamities. Employees are encouraged to donate money or contribute in the form of physical help. One of the respondents commented that they involve in community activities to help others and at the same time break monotony from work.

*“Our Company recognizes that our people are intimately familiar with both the needs of their communities, and the organizations that best address those needs...so we tend to involve all our employees in such activities”.*

*“Companies & employees involve in community activities since what they have is given by the community and hence to give back to the community; Social involvement gives variety to employees & breaks monotony...so our people love it!”*

### **Employee numbers (68 frequencies)**

According to the HR heads interviewed, the growth of the Indian software and services exports over the 2002-04 period, created a major need for manpower. As the industry expands rapidly, it needs more specialized manpower to fuel its growth. A respondent from one of the top five firms emphasised on the increase in business and employee number as follows:

*“With a growth rate of around 60% in the last 5 years, and branches across the world, we are heading ahead in the global market. To achieve our vision, we are always looking out for talented, learnable individuals who are ambitious, who love challenges and who have a passion to excel!”*

The increase in employee numbers indicates that the software firms are in their growth path. They also help in the growth of the economy by reducing the rate of unemployment. Software industry employee base increased from 242,000 in FY2001-02 to 697,000 in FY 2003-04 with a Compounded Annual Growth Rate (CAGR) of 23.6%. Over the past 15 years, annual employment growth in India has decreased from 2.7 percent to just 1.1 percent (Bidwai, 2004). It can be clearly seen from the statistics that software industry is in the driver's seat lifting up the Indian economy.

It could be argued that employing more number of people indirectly shows that the firms' turnover is increasing and that the firm is able to sustain competition. Increase in employee numbers is the first step of value creation. As Edvinsson and Sullivan (1996) suggest, the existence of a store of knowledge in employees combined with the ability of the firm to leverage this accumulated knowledge would drive it to increase value creation.

### **Career Development (46 frequencies)**

Retention of talented employees is essential for long-term sustainable competitive advantage. To attract and retain staff, leading Indian software firms are trying new approaches that focus on intangible benefits such as career growth (Ribeiro, 2004). Employees would continue with an organisation only if they foresee a career path for themselves.

*“When freshers are recruited, our company has a pre-placement discussions that starts with a talk by a senior person explaining the prospective employees on what the company course is, what is the company's plans, and what career plans an employee could have and the company's contribution starts from there and we give an assurance that the company can get you to where you want to be...this helps in retaining young talent”*

Information about career development is reported frequently in the annual reports probably to highlight the strategies formulated by the firm to reduce attrition rate. The respondents in the interview claimed that the software firms compete among each other to retain employees. This is achieved not just by giving a high salary but showing them a career path, training them to move on the career path. A quote from one of the respondents shows how firms consider career development important.

*“We have invested in people and infrastructure so that we could build a total learning framework. This shows our commitment to continuous learning that builds intellectual capital for our employees that helps them to have a strong career path that helps to reduce our attrition rate.”*

Career growth motivates an employee and people related assets like motivation is an element that cannot be owned, transferred or traded like any physical property and hence is a source of sustainable competitive advantage.

### **Employee Benefits (38 frequencies)**

All respondents acknowledged that keeping manpower motivated was extremely important to increase the value of their HC, curtail attrition rate and successfully retain skilled personnel. For these reasons a number of leading Indian software and service players have put in place special HR strategies over the past two to three years (NASSCOM, 2005). The HR head from one of the top three software firms said the following.

*“Our compensation package is among the best in the industry and is aimed at not only attracting but also retaining the best talent. The package caters to all positions across the firm. Rewards for each position are based on performance, potential, criticality, and market value.”*

The software firms provide facilities like transportation, gym, yoga, sports facilities, food courts and health centres. According to one of the respondents, these facilities create an environment that gives employees a feeling of energy, vitality and of

freshness and one of them described it as a feeling of *joie de vivre*. Moreover, these facilities become mandatory since employees are sometimes required to work overnight, and may require frequent breaks.

According to Arora (2003), Information Technology (IT) professionals were jumping jobs for short term monetary benefits, but with the closure of small IT firms and instability of jobs employees are looking more for benefits like insurance and medical facilities for self and family that gives them a stable, secured life. The case study interviews disclosed that all software firms highly value these benefits and provide such benefits to their employees.

*“We are very concerned about the health and safety of our employees and hence have a focus group concentrating on this aspect. A number of doctors from outside visit us on a regular basis for quick and periodical health checks. This is ongoing since computer consultants are very stressed and work long hours and really do not care about their health. So we remind them of that & that doctors are available... and it is very effective”*

It is apparent that the firms would display information about the benefits offered to employees in their annual reports to reassure their stakeholders that they motivate their employees thereby increasing their efficiency and competitiveness, keeping them abreast of their competitors.

### **Average professional experience (35 frequencies)**

The respondents uniformly acknowledged that they have experienced an exponential growth in the software and service exporter industry and therefore need to recruit more IT professionals. They pointed out that the industry is experiencing a short supply of experienced professionals and also suffers from high attrition rate. There is

a mismatch between demand and supply of human resources in the industry. This is evident from the following quote by Nasscom.

*"Both employment generation and attrition levels remain high in the industry, even as the IT, and IT enabled services industry has added 150,000 jobs in 2004-05. Demand for experienced professionals outpaced supply and attrition was between 25 and 40 per cent"(NASSCOM, 2005).*

All the respondents interviewed revealed that their firms take significant effort to recruit and retain experienced professionals. The firms may therefore report most about the experience of the employees in their annual reports. One of the respondents emphasized that experienced professionals in leadership roles in key areas like, software development, sales, marketing, delivery and human resources play a vital role in value creation of the firm. As pointed out by Pattit and Wilemon (2005) visionary leadership, building high-performing software development teams that utilize state-of-the-art development processes, increases the likelihood that firms can compete and meet the ever-expanding expectations of stakeholders. The findings of the interviews were consistent with annual reporting.

The HR heads articulated that their firms hire two types of professionals: fresh young graduates and graduates that have prior experience in the relevant area. The HR heads espouse that though in the previous years the proportion of graduates with work experience have been more compared to freshers, the trend is now to recruit more freshers.

*"Now-a-days more offshore oriented projects are undertaken and it is industry practice to hire freshers from campus and recruit the cream of the campus...give a strong foundation and develop them over a period of time. This helps in reducing attrition rate and gives a sense of belongingness to the company and goes a long way to stay with the company. Their commitment to the company is much...much more than laterals in terms of productivity."*

The respondents from the smaller firms (by total export revenue) pointed out, that the primary reason for having graduates with work experience were because their firms did not have continuous workflow and the investment in training of freshers and young graduates did not justify their financial returns. This is consistent with the Kor and Leblebici (2005) findings that development of new knowledge is time consuming and creates an opportunity cost at times of high industry growth that is being experienced by the software and service exporter firms.

Further, some of the HR heads of firms interviewed believed that attrition should not be treated as a negative factor to train fresh and young graduates, as lower cost of remuneration relative to a lateral enable the firm to absorb the cost of training of these professionals. Additionally, a respondent from one of the top ten firms cited following reasons for recruiting the fresh graduates:

*“With the freshers it is easy to retain talent since they are loyal to our company. They could be easily groomed and we could promote them...We could see that they have a sense of belonging and grow and mature with the company and fresh graduates are more updated with the changes in technology & learn quickly.”*

However, at the time of the interviews, most of the firms claimed that they have reached a stage of growth where they have continuous workflow and are expecting a growth in workflow into the future.

The RBV posits that internally groomed HC may be more appropriate than hiring graduates with work experience (Kor & Mahoney, 2000). The fresh graduates could be trained on firm-specific (idiosyncratic) skills and knowledge thereby becoming fully available for the firm and blend well with other resources to give the best results (Peteraf, 1993). These graduates would have special characteristics that would result



in superior performance (Barney, 1991). A new employer incurs considerable adjustment costs to make the acquired HC (both lateral and fresh graduate) productively deployable with other resources (Prescott & Visscher, 1980).

### **Vocational Qualification (35 frequencies)**

The case studies revealed that the software and service exporter firms in India undertake offshore projects for a wide variety of industries. The industry sectors include Banking and capital markets, aerospace and defence, communication services, manufacturing, energy, healthcare, embedded technology, insurance, life sciences, media and entertainment, retail and consumer packaged goods, quality assurance, and transportation. The respondents espoused that their employees possessed Bachelors degree in Computer Engineering or Electronics and such qualifications provide new recruits with a basic understanding of the technical (software) side of the job in the firm.

As indicated by respondents, their firms need specialists with vocational qualification (in the clients domain/vertical<sup>2</sup>) for the analysis and design of processes, IT systems development, network and security professionals, banking and financial experts, business consultants and Six Sigma master black belts. Industry experts and managers who hire software engineers stated that domain expertise and the ability to deal directly with customers are two attributes that go a long way toward maintaining job security (Schwartz, 2005). As Schwartz (2005) points out talking the client's language and translating it into software is an ability that is always going to be a useful

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<sup>2</sup> The application domain of a software system is the domain of interest in which the system is used. Examples of application domains are Insurance, Computer Aided Manufacturing, Administration, and so on (Wikipedia, 2005).

competence of an employee. From the point of view of the firm, vocational qualification of the employees helps in enhancing client satisfaction.

### **Entrepreneurial spirit and Innovativeness. (36 frequencies)**

In a typical software firm, the engineers must have the ability to provide solutions to their clients that involves decision-making. To be a high quality solution provider, the engineers must be highly innovative. One of the HR heads commented:

*“The key factor for success is innovation and creativity...our company’s mission statement concentrates on three factors...customer satisfaction, technology and innovativeness, which talks on how much we value innovativeness. We encourage freshers to come out with their own ideas on how well a problem can be solved...”*

A firm’s capability of being innovative and at the same time delivering high-quality products or services to customers is its intangible resource (Hee-Jae & Vladimir, 2005). RBV believes in the importance of knowledge, innovation and creativity for superior firm performance. Hence, a software firm in a knowledge-based industry would canvas their innovativeness to its stakeholders.

## **II. Least Reported**

The least reported HC attributes could be further classified into three classes: Least reported but efficiently managed practices; least reported and inefficiently managed practices; and least reported with no managed practices.

### **I. Least reported but efficiently managed practices**

These attributes include employee safety, equity issues based on gender, race, and religion.

**Equity issues based on gender, race, religion and disability. (18 frequencies)**

The software firms reported least about equity issues relating to gender, race, religion and disability. Though this issue is not reported, interviews revealed that all firms practice equal employment opportunity. The HR heads articulated that their firms selected an individual based on competency.

*“ We 100% go on the quality and capability of an individual and selection is purely on merit. The policy of the company is equity based. We go across the country to recruit freshers. Even at a stage when supply (of labour) exceeds demand, we would still be an equal employer.”*

The jobs created in the software industry are generally physically less demanding than those in other manufacturing industry. Hence, they are also well suited to women. Yet the male to female ratio is very low. Therefore, the firms encourage employment of women in their organisation by giving them special privileges like flexi hours, long maternity leave, and work from home. The current male female ratio is between a low of 18% in some firms and a high of 45%. Equal Employment Opportunities (EEO) is compulsory since most of the firms are multinationals and needs to meet the EEO requirement of various countries. This approach of encouraging women at work is much a social obligation of firm. Equity issues based on gender, caste and religion is managed well but not sufficiently reported, and such under-reporting needs further investigation when organisation could disclose enough information about itself for the society to judge whether or not it is being a ‘good citizen’ (Woodward, Edwards, & Birkin, 1996).

### **Employee safety (11 frequencies)**

All firms reported least about employee safety measures. Case study interviews revealed that all firms very involved in managing workplace safety. All firms are ISO complaint and adhere to BS 7799 standards<sup>3</sup>. Although the interviews revealed that the firms give utmost importance to the safety of employees these have not been reported in the annual reports. It could be argued that because all firms maintained similar safety standards, reporting about safety in their annual report does not highlight value creation to shareholders.

### **Median age of employees (5 frequencies)**

Case study interviews revealed that all the firms have a young work force. The firms in software industry in India are very young and require young and fresh graduates who could grow with the firm. The average age of employees in these firms is 26 years. The median age range is between 26 to 29 years. The overall median age of software professionals was 26.5 in the year 2003 (NASSCOM, 2003). The intake of fresh graduates is increasing and hence the HR heads expect average age to fall. Few firms explicitly reported about the age of employees. The frequency count included only such items and hence the count is very low. All the firms used words such as ‘young, fresh graduates, blooming, new recruits and campus recruitment’ to describe its employees. This implicitly suggests the age of its employees but this was not taken for frequency count, and is probably the reason for a very low frequency count.

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<sup>3</sup> BS 7799 Cybertrust's Business Security Assessment (BSA) methodology provides management with an independent assessment of the effectiveness of security controls across the firm. This flexible assessment methodology enables Cybertrust to evaluates a firm's compliance status against internal, regulatory and 3rd party security standards including: BS7799 etc(1996) (*ISO 17799-BS 7799*, 2005).

### **Expert seniority (3 frequencies)**

In the years before 2000, the Indian system of promoting software programmers to managers was based on seniority rather than on proven managerial ability. The Indian firms practiced it as a way of providing a career path to their professionals and an attempt to hold down employee attrition. The overseas clients felt that this practice weakened the project and lowered productivity levels (Arora, Arunachalam, Asundi, & Fernandes, 2001). In recent times, the firms have realized this issue of weakening projects and have changed their outlook. The respondents expressed that the firms have moved into role-based assessment and promotions are given based on competency and not based on seniority. Though promotions are not based on seniority, senior employees are given due recognition in the firms.

*“While we do consider the number of years (of service) a person has put in the company, promotions purely goes on the basis of their performance and the value added to the project by the employee and that is a prerogative”.*

It could be argued that seniority has no relevance to the firm or its shareholders for two reasons. First, with high attrition rates in the industry not many employees have stayed in the firm for a long time. Second, the efficiency of the employees and the firm does not depend on seniority but on capabilities ability to learn about the products and processes, and teamwork. Hence, it is probably not necessary for the firm to report about seniority of its employees.

## *II. Least reported and inefficiently managed practices*

### **Equity issues based on disability. (3 frequencies)**

Interviews revealed that the firms neither discriminate disabled people nor do they encourage employment of disabled. The respondents said that they recruit physically

disabled ('challenged' as the word used in India) people if they are found competent and they are treated at par with others. However, very few firms have infrastructure that suit physically disabled. Further, no firm has any special quota for employing disabled people. In this instance, therefore the low frequency of annual reporting is consistent with poor management practices of employing disabled staff. It could be argued that the firms may be discouraged to employ disabled people, who they presumably don't believe to be as valuable as others and this is consistent with maximising the value of the firm's HC.

### *III. Least reported with no managed practices*

#### **Union activity (0 frequency)**

Interviews and the annual reports confirmed that no union activity is found in software firms. Unions involve in negotiating contracts with employers. According to HR heads, in the Indian software industry the situation is different. The firms do not have unions and do not see union activities coming up in the future too. The reasons in the words of HR heads are:

*"The companies proactively take care of the needs of the employees; It is a workforce that is intellectual and competent and most importantly they don't see any threat to their jobs. If the current employer does not provide what they want...they can always switch over to a new employer and the question of unions do not arise at all. IT industry is an employee driven industry; each employee's issue is given priority and solutions taken immediately; and, employees are competent and do not need a union to raise their issues. Unions are necessary only when employees find problems with wage structure or other issues...but in this industry the question of negotiation does not arise."*

Though this is very accepting of a managerial viewpoint, it could be argued that the software industry in India is an employees' market. Statistics show that the demand for qualified professionals in this industry exceeds supply. The Indian IT software and services market is expected to grow to US\$ 50 billion by 2009, recording a capital annual growth rate (CAGR) of 27 percent. To sustain year-on-year growth of approximately 30% in software and services revenues, the Indian software and services industry will require about 110,000 new out-of-college engineers each year, against the current availability of about 80,000 a year (Ribeiro, 2004). Hence the firms should keep its employees happy to retain them and curtail attrition rates and sustain competition. Therefore unions are probably not required in these circumstances to uphold rights of employees.

## ***6. Conclusion***

The findings of this study indicate that HC reporting practices of software and service exporter firms in India are consistent with HC value creation perceived by the firm. The HC attributes can be classified as most reported and least reported and hence most value creating and least value creating to the firm. This study has four limitations. First, it is a cross-sectional study. Second, the findings may be applicable exclusively to the software and service industry in India and this industry in India is undergoing an exponential growth. Therefore, this study cannot be generalised to other industries in India or software industry in other countries. Third, the assertions by the HR heads are assumed to faithfully reflect the firm's HC practices. Fourth, the study assumes that annual reports are the primary documents available to shareholders requiring information on the firms.

There are four main contributions of this study. First, this study could provide an insight into the HC reporting practices of the nascent software and service exporter industry. This is important in the context of a developing country like India, which is experiencing an economic boom that is positively influenced by the IT software industry (Planning Commission of India, 2002). Second, India is a favourite destination for many countries for their software service solutions. This study would throw some light on how the top software firms in India utilize their HC for value creation. This may help countries having tie-up with Indian firms to understand the value creation process of these firms to sustain growth. Third, the findings could assist policy makers to determine the extent of support to be provided to software industry in areas such as industrial relations, and training and development of expertise in the software industry. Fourth, the study would enable other software firms to understand HC reporting practices of the industry, providing a benchmark for comparison with their own HC reporting practices. A deeper understanding of HC reporting practices of the industry can assist firms to review their ideas and methods of managing their people.

Field study research may be carried out to provide a deeper understanding of the management practices of the firms. Content analysis of web-based information could be conducted to get a broader view of the firms' reporting practices. Further study could be based on a comparison between HC reporting practices of firms in a knowledge-based industry and firms in a manufacturing industry. This may give a better understanding of HC value creation process in different industries. A further extension of this study would be to interview employees to view value creation from



their perspective. This could be compared to the 'management talk' and analyse if there is difference in what the company leaders do to what they actually report.

## ***Appendix 1***

### **CASE STUDY SEMI STRUCTURED INTERVIEW FRAMEWORK**

Name:

Designation:

Years of experience:

In this co:

In other com in the similar position:

Please state your thoughts and how you manage the following practices of your firm?

1. Educational and vocational qualifications of employees?
2. Know-how of employees?
3. Community activities?
4. Career development of employees?
5. Creative and entrepreneurial qualities (risk taking, proactive) of employees?
6. Training your employees?
7. Equal opportunities for employees based on merit on race, gender and religion?
8. Employing disabled people?
9. Safety of employees at work?
10. Relationship with the employee unions?
11. Headcount in your firm?
12. Thanking employees?
13. Featuring employees in magazines, annual reports, and other publications?
14. Rewarding employees non-monetarily?
15. Employee benefits provided?
16. Making employees' owners of the firm such as employee share and share option schemes?
17. Place for professionals in your firm?
18. Seniority of employees?
19. Age of employees?
20. Attrition and Retention of employees?

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