INTELLECTUAL CAPITAL REPORTING PRATICES: A STUDY OF ANNUAL REPORTS OF SELECT INDIAN FIRMS

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Abstract: This paper is an attempt to measure and evaluate voluntary intellectual capital (IC) disclosures made by some select Indian firm in their annual reports. Content analysis method has been used to measure the extent and nature of reporting in 20 sample companies across different industries with the help of certain criteria identified in the form of eighteen (18) intellectual capital indicators across three broad categories, viz. Structural capital elements, Relational capital elements and Human capital elements. From the study it can be informed that most of the reported IC indicators are expressed in discursive rather than numerical or monetary terms. The intellectual capital disclosures made by the sample firms do not fully satisfy the informational demand of various stakeholders associated with the firm, thus the business units need to disclose more meaningful information in their annual reports in the form of IC disclosure or in separate IC reports or statement as appendix to the annual reports.

Keywords: Intellectual Capital Disclosure, Structural Capital, Relational Capital, Human Capital, Content Analysis

1. INTRODUCTION

The growth in knowledge intensive companies in the world economy has become the core reason for measurement and reporting system of intellectual capital (IC). It is generally said that intellectual capital may be a source of competitive advantage, but most organizations do not understand its nature and value (Collis, 1996). The area has since been detonated with dozens of dedicated publications and academic researchers (Serenko and Bontis, 2004, 2009; Bontis and Serenko, 2009 for comprehensive reviews). Research studies have disclosed that 50 to 90 percent of the value created for firms in new economy is only due to IC instead of production and sale (Ehrhardt, 2007). And the real image behind this result is the successive improvement in knowledge management. Various scholars have given their best to know whether and how specific areas of intellectual capital add to better organizational performance, but little research has been carried out on overall IC

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management and reporting. The idea of IC has become popular worldwide but it is still very much an academic debate in India. Against this background, this research work intends to examine how Indian firms have equipped themselves to meet the requirement of disclosure of information pertaining to IC.

The Growing Importance of Knowledge Management Intellectual Capital

In the stir of intense globalized competition, there is a extensive credit that intellectual capital is a critical power that drives economic growth (Huang and Liu, 2005). IC is the organizational knowledge that can be treated as static assets or stock of the organization or a mechanism for value creation for stakeholders. The static assets or stock of the organization includes the knowledge, skill and experience of all employees of the firm and organizational guidelines followed in the firm and these are very difficult to identify, manage and measure and results increases company value. As IC management is the cause of competitive advantage, measurement and reporting of IC have become a vital topic for both researchers as well as for the firm. Crucial concepts like the composition of intellectual capital and the management of IC and their management in the organization need to be researched properly as these factors influence the creation of competitive advantage for the firm.

Aligned with this backdrop, this research work aims to explore the extent and nature of the voluntary intellectual capital disclosure (ICD) in select Indian companies. Various companies representing five different industries have been considered for this research where IC plays a dominant role. One particular industry that is believed to be a knowledge-intensive one and the source of source of great intellectual capital is the pharmaceutical industry (Daum, 2005). This industry is research-intensive (DeVol et al., 2004), highly inventive (Chen, 2004), well managed in its use of human intervention and technology (Hermans, 2004), and to a large extent dependent on its intellectual capital for a source of regeneration (Zucker et al., 1994). Ultimately, it is a great choice for analyzing intellectual capital components (Bollen et al., 2005). The nation has been undergoing rapid economic transformation in the IT sector and software companies are considered to be highly knowledge intensive. Apart from the above mentioned two industries, firms representing, other industries like Cotton, Aluminium and Construction have also been considered to ascertain their disclosure level of IC. For this study, the related information about IC available in the annual reports of the select companies has been congregated using content analysis. On this backdrop the paper is divided into five sections. The first section introduces the paper followed by a brief overview of related research both in global and Indian context in Section 2. The research methodology adopted for the study is discussed in Section 3. Section 4 presents the analysis of results and Section 5 concludes it.

2. REVIEW OF RELATED LITERATURE

Good attempts have been shade to study the intellectual capital disclosure practices of companies all over the world. This section provides a review of the relevant literature both in international context across various countries as well as in Indian context.

2.1. Studies in International context

In 1994, the first intellectual capital report was formed to be published by Swedish insurance company "Skandia". On 10,000 Canadian companies, Bontis (1996) carried out a study and found that only a small percentage of companies (68 out of 10,000) mentioned the term IC in the annual reports. In the year 2000, the Danish government published guidelines for "Intellectual Capital Statements". What it was proposed that IC was to be reported in a separate statement referred to as "intellectual capital statement". It suggests that an IC statement may provide a picture of the corporate effort to build up, develop and streamline its resources and competencies in relation to its employees, customers, technology, and processes (Danish Agency for Development of Trade and Industry, 2000). Guthrie and Petty (2000) pioneered the use of Sveiby's intellectual capital framework to determine the extent of IC disclosure.

The extant literature also indentifies scant studies pertaining to disclosure of IC in the annual report. For example, Brennan (2001) presented evidence from annual reports of 11 knowledge-based Irish-listed companies, Olsson (2001) reported on the 18 largest Swedish companies. Bozzolan et al. (2003) provided content analysis of the annual reports of a sample of Italian companies and made a comparison of IC disclosure practices of 'traditional' companies with the practices of 'high tech' companies. Chaminade and Roberts (2003) investigated IC disclosure practices of firm in Norway and Spain and concluded that culture to some extent may decide the emergence of IC management and reporting. Roos (2003) reported that all the aspects of a firm must be taken into account in order to present a complete image of a firm's performance and hence IC should not only be measured correctly, but the information yielded should be used effectively. In 2004, Goh and Lim examined the evidence of disclosure of IC in annual reports of 20 Malaysian companies. Collectively, these studies indicated that disclosure of IC in the annual reports of the companies investigated has been quite limited.

Guthrie et al. (2006) highlighted that the practice of disclosing IC is very low and limited and in qualitative form rather than quantitative form in some firm operating in Hong Kong and Australia and level of disclosure also depends upon the company size. In 2006, Chu observed that the by measuring and reporting the IC, an organisation can present a new image for observing its hidden value (Chu et al., 2006). Roslender et al. (2006) concluded that IC must be reported in financial

statements along with other resources of a business entity. In 2006, Bozzolan highlighted that the proportion of IC disclosed is also depend upon whether a company related to a 'traditional' or 'knowledge-intensive' sector, and found that this sector divergence was one of the basic forecaster of ICD levels. Petty et al. (2006) also examined the importance of sector distinction in the pattern of ICR practices.

Ismail (2008) examined voluntary intellectual capital reporting (ICR) in Egyptian companies' annual reports with a view to understanding the practice of ICR ,Moreover he also brought out the barriers that might impact the development and implementation of IC indicators in Egyptian setting. Striukova et al. (2008) investigated the intellectual capital reporting practices of UK companies in four distinct sectors viz retail sector, pharmaceuticals/biotechnology sector, software sector, and real estate/utilities sector and through the research it can be said that the most prominent IC elements reported in each sector appeared to disclose the knowledge-related concerns are significant in providing companies in that sector with a competitive advantage. This study has also found that a range of corporate reports in addition to annual reports are used to communicate information about IC. Whiting and Miller (2008) examined the level of ICD by 70 companies and highlighted the hidden value of intellectual capital which is the difference between market and book value. In 2010 using an intellectual capital disclosure (ICD) index to assess annual report disclosures, White examined the information strategies of Australian and UK based biotechnology companies Thus it can be observed that most of the researchers have found disclosures to be low and that too in qualitative form except for a few studies (Sujan & Abeysekera, 2007; Steenkamp, 2007), in which a shift towards quantitative and high disclosures have been noticed.

2.2. Studies in Indian Context

Availablity of scant literature in Indian Context has induced to examine the IC disclosure practices among Indian firms incontrast to relatively more studies, while there have been several studies focusing on corporate intellectual capital reporting practices in Europe, UK and other developed countries.

DePablos (2005) examined the differences existing in the level of disclosure practices between Indian and European IC reports and found that the Indian intellectual capital report did not focus on the business model, values, mission and vision and knowledge management issues as in the contrast to the case of European IC reports. Kamath (2008a) analyze "TecK", *i.e.* technology, entertainment, communication and other knowledge based firms and observed that Indian firms disclosed very small amount of IC information in general and Indian Information Technology firms opted for more intellectual capital disclosure (ICD) compared to other sectors. In another study Kamath (2008b) highlighted that in spite of growing importance of intellectual resources in the Indian pharmaceutical industry, the

impact of the same on the financial performance of the industry is found to be missing.

In India Bhanawat (2008) calculated IC of Pharmaceutical companies and found that the present structure of reporting of intellectual property (IP) in Pharmaceutical companies is not enough and it fails to disclose whether an IP is self - developed or acquired. Using content analysis Joshi and Ubha (2009) examined ICD of the Indian software industry and briought to a closes that IC reporting has not received any preference or priority among the mentors of the Indian corporations. Singh and Kansal (2011) investigated 20 Indian pharmaceutical firms and observed that the stage of ICD is very limited and most of the companies were not disclosing its trademarks and copyrights; as a result of which companies are undervalued according to reports of the firms.

The research work on practice of IC reporting is insufficient in Indian context justifying the organization of the present study. It contributes to the existing literature by examining the present status of Intellectual Capital Disclosure in some select Pharmaceutical, Cotton, Aluminum, Construction and Software firms in India.

3. RESEARCH METHODOLOGY

3.1. Sample and Data Source

The present work has been undertaken for firms representing different capital intensive industries in India, viz. Pharmaceutical, Cotton, Aluminum, Construction and Software. Top four firms for each industry, listed in National Stock Exchange of India are considered for the study. These largest four companies from each industry are chosen based on their market capitalization. Thus, for the present study two sectors were chosen where it was expected that there would be considerable reliance on a variety of IC value drivers (software and pharmaceutical sector) and in final sector (cotton, aluminum, construction) an intermediate reliance on IC was expected. The aim of this study is to examine the level of intellectual capital disclosure by the selected Indian firms. In order to fulfill this objective, information has been collected from the annual reports for each of the firms in the sample for the year ending March, 2013. A list of sample companies along with their industries is presented in the *Table 1*. Only annual reports have been taken into consideration for the analysis of the total 20 companies selected for this present study. In this literature, the corporate annual report is considered as a means by which organization wants to reflect their image in the eye of public.

According to various researcher like (Barlett and Chandler, 1997; Savage, 1998) Corporate annual report is seen as an important channel for financial communication between management and stakeholders.

Table 1
List of sample companies as per its market capitalization

Companies in Pharmaceutical Industry	Companies in Software Industry	Companies in Cotton Industry	Companies in Aluminum Industry	Companies in Construction Industry
1. Sun Pharmaceutical Inds. Ltd	1. Tata consultancy Services Ltd.	1. Nahar Spinning Mills Ltd.	Ess Dee Aluminium Ltd.	Voltas Ltd.
2. Lupin ltd.	2. Infosys Ltd	2 Dawn Mills Co. Ltd. [Merged]	Sundaram-Clayton Ltd	Unitech Ltd.
3. Dr. Reddy's Laboratories ltd.	3. Wipro Ltd	3. Madura Coats Pvt. Ltd	Indian Aluminium Co. Ltd. [Merged]	National Buildings Construction Corpn. Ltd.
4. Cipla Ltd.	4. HCL Technologies Ltd.	4. Maharaja Shree Umaid Mills Ltd.	Alicon Castalloy Ltd.	Puravankara Projects Ltd.

3.2. Content Analysis

This study used content analysis as a research technique to collect the required data from the annual reports. Content analysis is described as 'a technique for gathering data that consists of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative scales of varying levels of complexity' (Abbot and Monsen , 1979, p. 504). As per Krippendorff (1980), "content analysis is a research technique for making replicable and valid inferences from data according to their context."Content analysis is used as the research method to evaluate the nature and extent of disclosure (Guthrie and Parker, 1990; Hackston and Milne, 1996).

In content analysis a significant footstep is the selection of the recording unit for analysis; recording unit refers to a specific segment of the context unit in the written material that is placed in a category. There are a number of choices in regard to calculating the recording unit, such as a word, a group of words, a sentence, a paragraph or an entire document (GAO, 1982). For the purpose of content analysis,this study takes"number of sentences" as a recording unit. Number of sentences has been used in the previous empirical studies like Brennan (2001); Bontis (2002, 2003); Shaikh (2004); Pablos (2005); Striukova et al. (2008) and Unerman and Guthrie (2008).These studies considered number of sentences both as the most appropriate measure of disclosure, and also as the most appropriate basis for coding and analysis.

Guthrie et al. (2004) stated that content analysis is a method of codifying the text or the content of a piece of writing into various groups or categories based on the selected criteria. It presumes that frequency indicates and supplies as evidence of the importance of the subject matter. For the present study, the content

analysis involves reading the annual report of each corporation and then coding the information contained therein in accordance with a selected framework of IC indicators. The main IC framework has been obtained from several professional pronouncements on IC (IFAC, 1998; SMAC, 1998). For the content analysis, the content categories and elements used are divided according to the contemporary classification scheme for intangibles used in Sveiby's IC Framework (Sveiby, 1997), which consists of three components:

- Internal structures (organisational/structural capital);

- External structures (customer/relational capital); and

- Employee competence (human capital).

Hence three broad IC categories, viz. Structural capital elements, Relational capital elements and Human capital elements have been used for the present study. These three categories include various IC indicators or elements, based on which data has been collected using content analysis from annual report. These IC indicators are in consonance with the literature representing similar studies carried out in earlier occasion [Brennan, 2001; Bontis, 2002, 2003]. The list of the IC indicators or elements used in the study with which to ascertain the level of intellectual capital reporting is provided in *Table 2*.

Table 2
List of Intellectual capital indicators/elements that forms the basis for content analysis

S.No.	A. Structural Capital Indicators/Elements	B. Relational Capital Indicators/Elements	C. Human Capital Indicators/Elements
1	Intellectual Property	Brands	Employees
2	Management philosophy	Customer Satisfaction and Loyalty	Education and Vocational Qualifications
3	Corporate Culture	Company reputation	Training
4	Management Processes	Distribution Channels	Work related Knowledge and competence
5	Information Systems	Business Collaborations	Innovativeness of Employees/ Teams of Employees
6	Communication Systems	Licensing Agreement	
7	Research and Development		

Lastly from the annual reports, the information is collected of each of the sample companies on the basis of these IC indicators. Moreover, a datasheet is framed incorporating all the IC indicators and the number of sentences is noted down element wise after studying the annual reports of each sample companies.

Subsequently, the *volume of disclosure* (in the form of number of sentences) has been studied, industry wise separately for all elements. Accordingly, the first

categorization has been made on the basis of the *nature of information* available, *i.e.* whether it is narrative or quantitative in nature and subsequently on the basis of *type of disclosure i.e.* If the disclosure is quantitative then whether it is nonmonetary or monetary in nature. If it is disclosed in phrases, the information is supposed to be *narrative* in nature and if the information is disclosed in quantitative terms but not monetized then it is said to be *nonmonetary quantification*. If the disclosure is in monetary terms, it has been analyzed further to identify whether represents *monetary quantification* of information. ICD has also been examined on the basis of *tone of disclosure*, viz. positive, neutral and negative manner of disclosure.

4. RESULTS AND ANALYSIS

With the help of the content analysis, it has been identified whether the sample companies reveal most of their intellectual capital information in their Director's report and Management Discussion & Analysis section. Further, through the content analysis, an attempt has been made to certain information is also disclosed in Corporate Governance Report and Corporate Financial Statement of the examined annual reports.

4.1. Intellectual Capital Disclosure by Pharmaceutical Companies

As per methodology, the total intellectual capital disclosure across all the 18 IC indicators is analyzed separately companies representing for the five industries, viz Pharmaceutical, Cotton, Aluminum, Construction and Software companies in India. The descriptive statistics for sample companies, industry and companies wise Intellectual capital disclosure pattern are shown in **Table 3, Table 4 and Table 5,** respectively**.** According to intellectual capital reporting, it can be observed that the Pharmaceutical Industry is having a total volume of disclosure of 23 sentences. Maximum reporting is found for *Human capital elements* that comprises of approximately 43.47% of the total disclosure (10 sentences). Information on *Structural Capital elements* and *Relational Capital elements* is about 34.78% of the total disclosure (8 sentences) and 21.73% of the total disclosure respectively (5 sentences).

Table 3
Descriptive statistics for the sample

Number of sample companies	20
Number of industry groups	05
Number of intellectual capital attributes in model	18
Average number of attributes reported per company	5.6
Minimum number of attributes reported by any one company	0
Maximum number of attributes reported by any one company	22

Table 4
Industry wise Intellectual capital disclosure
(ICD) pattern

Name of industry	Total Volume of Disclosure	Form of disclosure in sentences (% of total disclosure)			Tone of disclosure in sentences (% of total disclosure)			
		Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
Pharmaceutical Industry	23	13 (56.52%)	4 (17.39%)	6 (26.07%)	19 (82.61%)	4 (17.39%)	0 (0%)
Software Industry	23	10 (43.48%)	2 (8.7%)	11 (47.83%)	21 (91.3%)	2 (8.7%)	0 (%)
Cotton Industry	20	11 (55%)	0 (0%)	9 (45%)	18 (90%)	2 (10%)	0 (%)
Aluminum Industry	21	14 (66.27%)	3 (14.29%)	6 (28.57%)	19 (90.48%)	2 (9.53%)	0 (%)
Construction Industry	24	15 (62.5%)	0 (0%)	9 (37.5%)	22 (91.67%)	2 (8.33%)	0 (%)

Table 5.1
Intellectual capital disclosure for sample companies in the
Pharmaceutical Industry

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure			Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
A. Structural Capital Elements							
1.1 Intellectual Property	2	1	0	1	1	1	0
1.2	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0
Total IP	*2*	*1*	*0*	*1*	*1*	*1*	*0*
2.1 Management philosophy	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	1	0	0	1	1	0	0
Total MP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
3.1 Corporate Culture	1	0	0	1	1	0	0
3.2	0	0	0	0	0	0	0

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
Total CC	*1*	*0*	*0*	*1*	*1*	*0*	*0*
4.1 Management Processes	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
Total MP	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5.1 Information Systems	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total IS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Communication Systems	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
Total CS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
7.1 Research and Development	1	1	0	0	1	0	0
7.2	1	1	0	0	1	0	0
7.3	1	1	0	0	1	0	0
7.4	1	1	0	0	1	0	0
Total RD	*4*	*4*	*0*	*0*	*4*	*0*	*0*
Total Structural Capital	*8*	*8*	*0*	*0*	*8*	*0*	*0*
B. Relational Capital Elements							
1.1 Brands	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetary Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
1.3	1	0	0	1	1	0	0
1.4	1	0	0	1	1	0	0
Total B	*2*	*0*	*0*	*2*	*2*	*0*	*0*
2.1 Customer Satisfaction and Loyalty	1	0	0	1	1	0	0
2.2	1	0	0	1	1	0	0
2.3	1	0	0	1	1	0	0
2.4	0	0	0	0	0	0	0
Total CSL	*3*	*0*	*0*	*3*	*3*	*0*	*0*
3.1 Company reputation	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
Total CP	*0*	*0*	*0*	*0*	*0*	*0*	*0*
4.1 Distribution Channels	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
Total DC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5.1 Business Collaborations	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total BC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Licensing Agreement	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
Total LA	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Relational Capital	*5*	*0*	*0*	*5*	*5*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
C. Human Capital Elements							
1.1 Employees	2	1	1	0	1	1	0
1.2	2	1	1	0	1	1	0
1.3	1	1	0	0	1	0	0
1.4	0	0	0	0	0	0	0
Total E	*5*	*3*	*2*	*0*	*3*	*2*	*0*
2.1 Education and Vocational Qualifications	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total E NVQ	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Training	1	1	0	0	1	0	0
3.2	2	1	1	0	2	0	0
3.3	1	1	0	0	1	0	0
3.4	1	1	0	0	1	0	0
Total T	*5*	*4*	*1*	*0*	*5*	*0*	*0*
4.1 Work related Knowledge and competence	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
Total WR K N C	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5.1 Innovativeness of Employees/ Teams of Employees	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total INN	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Human Capital	*10*	*7*	*3*	*0*	*8*	*2*	*0*
Total IC Disclosure	*23*	*13*	*4*	*6*	*19*	*4*	*0*

Table 5.2
Intellectual capital disclosure for sample companies in the Software Industry

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
A. Structural Capital Elements							
1.1 Intellectual Property	0	0	0	0	0	0	0
1.2	1	1	0	0	1	0	0
1.3	0	0	0	0	0	0	0
1.4	1	1	0	0	1	0	0
Total IP	*2*	*2*	*0*	*0*	*2*	*0*	*0*
2.1 Management philosophy	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total MP	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Corporate Culture	0	0	0	0	0	0	0
3.2	1	0	0	1	1	0	0
3.3	1	0	0	1	1	0	0
3.4	1	0	0	1	1	0	0
Total CC	*3*	*0*	*0*	*3*	*3*	*0*	*0*
4.1 Management Processes	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
Total MP	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5.1 Information Systems	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total IS	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetary Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
6.1 Communication Systems	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
Total CS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
7.1 Research and Development	1	1	0	0	1	0	0
7.2	1	1	0	0	1	0	0
7.3	2	1	1	0	1	1	0
7.4	2	1	1	0	1	1	0
Total RD	*6*	*4*	*2*	*0*	*4*	*2*	*0*
Total Structural Capital	*11*	*6*	*2*	*3*	*9*	*2*	*0*
B. Relational Capital Elements							
1.1 Brands	0	0	0	0	0	0	0
1.2	1	0	0	1	1	0	0
1.3	1	0	0	1	1	0	0
1.4	1	0	0	1	1	0	0
Total B	*3*	*0*	*0*	*3*	*3*	*0*	*0*
2.1 Customer Satisfaction and Loyalty	1			1	1	0	0
2.2	1	0	0	1	1	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total CC	*2*	*0*	*0*	*2*	*2*	*0*	*0*
3.1 Company reputation	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
Total CP	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetary Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
4.1 Distribution Channels	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
Total DC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5.1 Business Collaborations	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total BC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Licensing Agreement	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
Total LA	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Relational Capital	*5*	*0*	*0*	*5*	*5*	*0*	*0*
C. Human Capital Elements							
1.1 Employees	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0
Total E	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2.1 Education and Vocational Qualifications	1	0	0	1	1	0	0
2.2	1	0	0	1	1	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total E NVQ	*2*	*0*	*0*	*2*	*2*	*0*	*0*
3.1 Training	1	1	0	0	1	0	0
3.2	1	1	0	0	1	0	0

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
3.3	1	1	0	0	1	0	0
3.4	1	1	0	0	1	0	0
Total T	*4*	*4*	*0*	*0*	*4*	*0*	*0*
4.1 Work related Knowledge and competence	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	1	0	0	1	1	0	0
4.4	0	0	0	0	0	0	0
Total WR K N C	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Innovativeness of Employees/ Teams of Employees	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total INN	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Human Capital	*7*	*4*	*0*	*3*	*7*	*0*	*0*
Total IC Disclosure	*23*	*10*	*2*	*11*	*21*	*2*	*0*

Table 5.3
Intellectual capital disclosure for sample companies in the Cotton Industry

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
A. Structural Capital Elements							
1.1 Intellectual Property	1	1	0	0	1	0	0
1.2	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0
1.4	1	1	0	0	1	0	0
Total IP	*2*	*2*	*0*	*0*	*2*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
2.1 Management philosophy	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	1	0	0	1	1	0	0
Total MP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
3.1 Corporate Culture	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0
3.3	1	0	0	1	1	0	0
3.4	0	0	0	0	0	0	0
Total CC	*1*	*0*	*0*	*1*	*1*	*0*	*0*
4.1 Management Processes	0	0	0	0	0	0	0
4.2	1			1	1		
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
Total MP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Information Systems	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total IS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Communication Systems	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
Total CS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
7.1 Research and Development	1	1	0	0	1	0	0
7.2	1	1	0	0	1	0	0

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetary Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
7.3	1	1	0	0	1	0	0
7.4	1	1	0	0	1	0	0
Total RD	*4*	*4*	*0*	*0*	*4*	*0*	*0*
Total Structural capital	*9*	*6*	*0*	*3*	*9*	*0*	*0*
B. Relational Capital Elements							
1.1 Brands	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0
Total B	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2.1 Customer Satisfaction and Loyalty	1	0	0	1	1	0	0
2.2	1	0	0	1	1	0	0
2.3	1	0	0	1	1	0	0
2.4	1	0	0	1	1	0	0
Total CC	*4*	*0*	*0*	*4*	*4*	*0*	*0*
3.1 Company reputation	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	1	0	0	1	1	0	0
T CP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
4.1 Distribution Channels	0	0	0	0	0	0	0
4.2	1	0	0	1	1	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
T DC	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Business Collaborations	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
T BC	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetory Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
6.1 Licensing Agreement	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
T LA	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Relational Capital	*6*	*0*	*0*	*6*	*6*	*0*	*0*
C. Human Capital Elements							
1.1 Employees	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0
1.4	1	1	0	0	1	0	0
T E	*1*	*1*	*0*	*0*	*1*	*0*	*0*
2.1 Education and Vocational Qualifications	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
T E NVQ	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Training	1	1	0	0	1	0	0
3.2	1	1	0	0	1	0	0
3.3	1	1	0	0	1	0	0
3.4	1	1	0	0	1	0	0
TT	*4*	*4*	*0*	*0*	*4*	*0*	*0*
4.1 Work related Knowledge and competence	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
T WR K N C	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No. of Sentences	Monetary Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
5.1 Innovativeness of Employees/ Teams of Employees	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
T INN	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Human Capital	*5*	*5*	*0*	*0*	*5*	*0*	*0*
Total IC Disclosure	*20*	*11*	*0*	*9*	*18*	*2*	*0*

Table 5.4
Intellectual capital disclosure for sample companies in the Aluminium Industry

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetary Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
A. Structural Capital Elements							
1.1 Intellectual Property	1	1	0	0	1	0	0
1.2	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0
1.4	1	1	0	0	1	0	0
Total IP	*2*	*2*	*0*	*0*	*2*	*0*	*0*
2.1 Management philosophy	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total MP	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Corporate Culture	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
Total CC	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
4.1 Management Processes	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	1			1	1		
Total MP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Information Systems	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
Total IS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Communication Systems	1	0	0	1	1	0	0
6.2	1	0	0	1	1	0	0
6.3	1	1	0	0	1	0	0
6.4	0	0	0	0	0	0	0
Total CS	*3*	*1*	*0*	*2*	*3*	*0*	*0*
7.1 Research and Development	1	1	0	0	1	0	0
7.2	1	1	0	0	1	0	0
7.3	1	1	0	0	1	0	0
7.4	1	1	0	0	1	0	0
Total RD	*4*	*4*	*0*	*0*	*4*	*0*	*0*
Total Structural Capital	*10*	*7*	*0*	*3*	*10*	*0*	*0*
B. Relational Capital Elements							
1.1 Brands	0	0	0	0	0	0	0
1.2	1	0	0	1	1	0	0
1.3	1	0	0	1	1	0	0
1.4	0	0	0	0	0	0	0
Total B	*2*	*0*	*0*	*2*	*2*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetary Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
2.1 Customer Satisfaction and Loyalty	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total CC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Company reputation	1	0	0	1	1	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
T CP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
4.1 Distribution Channels	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
T DC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5.1 Business Collaborations	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
T BC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Licensing Agreement	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
T LA	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Relational Capital	*3*	*0*	*0*	*3*	*3*	*0*	*0*
C. Human Capital Elements							

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
1.1 Employees	1	1	0	0	1	0	0
1.2	1	1	0	0	1	0	0
1.3	1	1	0	0	1	0	0
1.4	0	0	0	0	0	0	0
T E	*3*	*3*	*0*	*0*	*3*	*0*	*0*
2.1 Education and Vocational Qualifications	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
T E NVQ	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Training	1	1	0	0	1	0	0
3.2	1	1	0	0	1	0	0
3.3	1	1	0	0	1	0	0
3.4	1	1	0	0	1	0	0
TT	*4*	*4*	*0*	*0*	*4*	*0*	*0*
4.1 Work related Knowledge and competence	1	0	0	1	1	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
T WR K N C	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Innovativeness of Employees/ Teams of Employees	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
T INN	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Human Capital	*8*	*7*	*2*	*1*	*8*	*0*	*0*
Total IC Disclosure	*21*	*14*	*3*	*6*	*19*	*2*	*0*

Table 5.5
Intellectual capital disclosure for sample companies in the Construction Industry

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetory Quantification	Non-monetory Quantification	Narrative	Positive	Neutral	Negative
A. Structural Capital Elements							
1.1 Intellectual Property	1	1	0	0	1	0	0
1.2	1	1	0	0	1	0	0
1.3	1	1	0	0	1	0	0
1.4	1	1	0	0	1	0	0
Total IP	*4*	*4*	*0*	*0*	*4*	*0*	*0*
2.1 Management philosophy	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
Total MP	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Corporate Culture	1	0	0	1	1	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
Total CC	*1*	*0*	*0*	*1*	*1*	*0*	*0*
4.1 Management Processes	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0
4.3	1	0	0	1	1	0	0
4.4							
Total MP	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Information Systems	0	0	0	0	0	0	0
5.2	1	0	0	1	1	0	0
5.3	0	0	0	0	0	0	0
5.4							
Total IS	*1*	*0*	*0*	*1*	*1*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetary Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
6.1 Communication Systems	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4							
Total CS	*0*	*0*	*0*	*0*	*0*	*0*	*0*
7.1 Research and Development	1	1	0	0	1	0	0
7.2	1	1	0	0	1	0	0
7.3	1	1	0	0	1	0	0
7.4	1	1	0	0	1	0	0
Total RD	*4*	*4*	*0*	*0*	*4*	*0*	*0*
Total SC	*11*	*8*	*0*	*3*	*11*	*0*	*0*
B. Relational Capital Elements							
1.1 Brands	1	0	0	1	1	0	0
1.2	1	0	0	1	1	0	0
1.3	1	0	0	1	1	0	0
1.4	0	0	0	0	0	0	0
Total B	*3*	*0*	*0*	*3*	*3*	*0*	*0*
2.1 Customer Satisfaction and Loyalty	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	1	0	0	1	1	0	0
2.4	0	0	0	0	0	0	0
Total CC	*1*	*0*	*0*	*1*	*1*	*0*	*0*
3.1 Company reputation	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0
3.3	0	0	0	0	0	0	0
3.4	0	0	0	0	0	0	0
T CP	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetary Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
4.1 Distribution Channels	0	0	0	0	0	0	0
4.2	1	0	0	1	1	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
T DC	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Business Collaborations	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
T BC	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6.1 Licensing Agreement	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0
6.3	0	0	0	0	0	0	0
6.4	0	0	0	0	0	0	0
T LA	*0*	*0*	*0*	*0*	*0*	*0*	*0*
T RC	*5*	*0*	*0*	*5*	*5*	*0*	*0*
C. Human Capital Elements							
1.1 Employees	0	0	0	0	0	0	0
1.2	1	1	0	0	1	0	0
1.3	1	1	0	0	1	0	0
1.4	1	1	0	0	1	0	0
T E	*3*	*3*	*0*	*0*	*3*	*0*	*0*
2.1 Education and Vocational Qualifications	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0
T E NVQ	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3.1 Training	1	1	0	0	1	0	0
3.2	1	1	0	0	1	0	0

Indicators/ Elements of Disclosure	Volume of Disclosure	Types of Disclosure		Tone of Disclosure			
	No.of Sentences	Monetory Quantification	Non-monetary Quantification	Narrative	Positive	Neutral	Negative
3.3	1	1	0	0	1	0	0
3.4	1	1	0	0	1	0	0
TT	*4*	*4*	*0*	*0*	*4*	*0*	*0*
4.1 Work related Knowledge and competence	1	0	0	1	1	0	0
4.2	0	0	0	0	0	0	0
4.3	0	0	0	0	0	0	0
4.4	0	0	0	0	0	0	0
T WR K N C	*1*	*0*	*0*	*1*	*1*	*0*	*0*
5.1 Innovativeness of Employees/ Teams of Employees	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0
5.3	0	0	0	0	0	0	0
5.4	0	0	0	0	0	0	0
T INN	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Human Capital	*8*	*7*	*0*	*1*	*8*	*0*	*0*
Total IC Disclosure	*24*	*15*	*0*	*9*	*22*	*2*	*0*

In Pharmaceutical companies, maximum disclosure found for the two attributes *i.e.* '*Employees* and *Training*' (each 21.73% of the total disclosure). Other attributes on which Pharmaceutical Company has sufficient information includes '*Research and Development,*' (17.39% of the total disclosure) '*Customer Satisfaction and Loyalty* (13.04 % of the total disclosure). Lowest information found for IC indicators, '*Intellectual Property* 'and *Brands* (2 Sentences each), Management philosophy and Corporate Culture (1 sentence each).

Moreover various indicators are not disclosed in any where viz. *Business collaborations, Licensing Agreement, Distribution Channel, Company Reputation, Management Process, Information System, Communication System, Work-related knowledge and competence and Innovativeness of Employees/Teams of Employees* .The analysis also show that out of a total of 23 sentences disclosed by the sample Pharmaceutical companies, 13 sentences are of monetary quantification in nature and the remaining 6 sentences and 4 sentences comprises of narrative and nonmonetary quantification information respectively.

Most of the disclosure on Structural capital elements is found in *Director's report* and *Management discussion & analysis* report while a few additional information is also found in the Consolidated Financial Statement report, Auditor's report and Corporate Governance report. Information associated to Relational capital elements are revealed in Director's report and Corporate Governance report. The result also shows that majority of the information on Human Capital elements are disclosed in Management Discussion & Analysis report while few elements also disclosed in Corporate Governance Report and Consolidated Financial Statement Report.

4.2. Intellectual Capital Disclosure by Software Companies

It is observed that for Software company there is a similar volume of disclosure compared to that of Pharmaceutical Industry, with a total of 23 sentences. For Software Companies, maximum disclosed information is found for the IC indicator *'Research and Development'* having 6 sentences (26.09% of the total disclosure). Software companies also disclose sufficient information on IC indicators like 'Training' (17.39% of the total disclosure), *'Corporate Culture'* and*; Brands'* (13.04% of the total disclosure each), *'Intellectual Property'* and *'Customer Satisfaction and Loyalty'* (8.70% of the total disclosure each). From the analysis it is found that disclosure on *Structural capital elements* (11 sentences) is slightly more than *Human capital elements* (7 sentences).

Most of the disclosures by the firms representing this industry is also narrative in nature (11 sentences), while the remaining consists of monetary (10 sentences) and nonmonetary information (2 sentences). The tone of the disclosure is mostly positive in nature (21 sentences), while the remaining 2 sentences are of neutral. The result does not have any negative news in analysis.

Almost all the information on intellectual capital is found in the Director's report, Management Discussion & Analysis report, Risk management report and Consolidated Financial Statement report. Maximum disclosure on Relational Capital elements is revealed in the Corporate Governance report.

4.3. Intellectual Capital Disclosure by Cotton Companies

As per intellectual capital disclosure**,** it can be observed that the firms repsenting Cotton Industry are having a total volume of disclosure of 20 sentences. Most of the reporting is found for *Structural capital elements* that consist of approximately 45% of the total disclosure (9 sentences). Information on *Relational Capital elements* and *Human elements* is about 30% of the total disclosure (6 sentences) and 25% of the total disclosure respectively (5 sentences).

Moreover, maximum disclosures are found for two attributes *i.e. 'Research and Development, Customer Satisfaction and Loyalty and Training'* (each 20% of the total disclosure). On the other hand other indicators for which the company has lowest

number of information are for IC attributes, *'Intellectual Property'* (2 Sentences), Management philosophy, *Management Process, Distribution Channel, Company Reputation*, Corporate Culture, *Business collaborations* and Employees (1 sentence each).

Moreover certain indicators are not disclosed any where by these firms viz. *Licensing Agreement, Brands, Information System, Communication System, Work-related knowledge and competence and Innovativeness of Employees/Teams of Employees* .The analysis also shows that out of a total of 20 sentences disclosed by the sample Cotton companies, 11 sentences and 9 sentences are of monetary quantification and narrative in nature respectively. Apart from these, there is no information which is of nonmonetary quantification in nature. The tone of the disclosure is mostly positive in nature (18 sentences), while the remaining 2 sentences are of neutral .The result does not have any negative news in analysis.

Maximum number of the disclosure on structural capital elements is found in *Director's report* and *Management discussion & analysis* report while further information is also found in the Consolidated Financial Statement report, Auditor's report and Corporate Governance report. Information associated to Relational capital elements are revealed in Director's report, Auditor's report and Corporate Governance report. The result also show that majority of the information on Human Capital elements are disclosed in Management discussion & analysis report while a few additional elements also disclosed in Corporate Governance report and Consolidated Financial Statement report.

4.4. Intellectual Capital Disclosure by Aluminum Companies

It is observed that the group of Aluminum companies has more volume of disclosure compared to that of companies representing Cotton Industry, with a total of 21 sentences. In this case, maximum disclosed information is for the IC indicator *Research and Development and Training'* having 4 sentences each (19.05% of the total disclosure). Aluminum companies also disclose sufficient information on IC indicators like *'Communication System 'and 'Employees'* (14.29% of the total disclosure each) ,*'Intellectual Property 'and 'Brands'* (9.52% of the total disclosure each) and ' *Management Process, Company Reputation 'and 'Work-related knowledge and competence'* (4.76% of the total disclosure each). For these companies it is observed that disclosure on *Human capital elements* (8 sentences) is slightly more than *Relational capital elements* (3 sentences) and maximum number of reporting is Structural capital elements having (10 sentences).

The results also show that out of a total of 21 sentences revealed by the sample Aluminum companies, 14 sentences are of monetary quantification in nature and the remaining 6 sentences and 3 sentences comprises of narrative quantification and nonmonetary quantification information respectively. The tone of the disclosure is mostly is positive in nature (19 sentences), while the remaining 2 sentences are of

neutral and no negative news is found.

More or less all the information on intellectual capital is found in the Director's report, Management Discussion & Analysis report, Risk management report and Consolidated Financial Statement report. Most of the disclosure on Relational Capital elements is expressed in the Corporate Governance report.

4.5. Intellectual Capital Disclosure by Construction Companies

Maximum number of disclosure is found for firms representing Construction Industry, with a total of 24 sentences. In this case, maximum disclosed information is for the IC indicator *'Research and Development', 'Intellectual Property' and 'Training'* 'having 4 sentences each (16.67% of the total disclosure). Construction companies also disclose enough information on IC indicators like *'Brands '*and *'Employees'* (12.5% of the total disclosure each), *' Management Process', 'Corporate Culture', 'Information System',' Customer Satisfaction and Loyalty' ,'Distribution Channels '*and *'Work-related knowledge and competence'* (4.17% of the total disclosure each). For these companies it is observed that disclosure on *Human capital elements* (8 sentences) is slightly more than *Relational capital elements* (5 sentences) and maximum number of reporting is Structural capital elements having (11 sentences).

The results also show that out of a total of 24 sentences revealed by the sample Construction companies, 15 sentences are of monetary quantification in nature and the remaining 9 comprises of narrative in nature. The result does not have any nonmonetary quantification information in analysis. The tone of the disclosure is mostly is positive in nature (22 sentences), while the remaining 2 sentences are of neutral and no negative news is found.

Maximum number of the disclosure on Structural capital elements is found in *Director's report* and *Management discussion & analysis* report while further information is also found in the Consolidated Financial Statement report, Auditor's report and Corporate Governance report. Information associated to Relational capital elements are revealed in Director's report, Auditor's report and Corporate Governance report. The result also show that majority of the information on Human Capital elements are disclosed in Management discussion & analysis report while a few additional elements also disclosed in Corporate Governance report and Consolidated Financial Statement report.

4.6. Comparative Assessment of ICD across Pharmaceutical, Cotton, Aluminum, Construction and Software industry

The blueprints of ICD of five industries are representing in Table 6 in a consolidated form. From the analysis pattern, it can be seen that the level of disclosure of intellectual information varies across industries as well as companies. Comparing

Table 6
Frequency of reporting specific attributes

S. No.	A. Structural Capital Indicators/ Elements	Frequency	B. Relational Capital Indicators/ Elements	Frequency	C. Human Capital Indicators/Elements	Frequency
1	Intellectual Property	12	Brands	10	Employees	12
2	Management philosophy	2	Customer Satisfaction and Loyalty	10	Education and Vocational Qualifications	2
3	Corporate Culture	6	Company reputation	2	Training	21
4	Management Processes	3	Distribution Channels	2	Work related Knowledge and competence	3
5	Information Systems	1	Business Collaborations	0	Innovativeness of Employees/teams of Employees	0
6	Communication Systems	3	Licensing Agreement	0		
7	Research and Development	22				

industry wise, it is found that highest disclosure is seen in firms representing construction Industry in their annual reports. Mostly, all the firms of industries in our study disclosed monetary quantification information, except Software industry. Highest percentage disclosure of monetary quantification information is about 66.67 percent by Aluminum companies followed by construction companies are comprised of 62.5 percent and the rest are of 56.52 percent, 55 percent and 43.48 percent by Pharmaceutical, Cotton and Software companies respectively. It can also be observed that all companies reveal mostly positive information relating to intellectual disclosure. From the analysis it is observed that Construction companies are disclosing maximum number of monetary quantification information as well as highest percentage of positive news that is about 91.67 percent and the rest 8.33 percent are of neutral news. It is observed that low percentage of disclosure compared to Software Industry, with a percentage of 90.48 percent is found in Aluminum Industry and 9.53 percent are of neutral news. Moreover, from the analysis it is seen that Cotton Industry has slightly low percentage of positive news compared to Aluminum Industry, that comprised of 90 percent and 10 percent are of neutral news. For sample companies belonging to Pharmaceutical Industry, more than 82 percent of the total disclosure is revealing positive news, while the remaining 17.39 percent shows neutral news. The surprising matter of the analysis is that there is no single sentence of negative tone of information in all industry. Out of the sample companies in the Pharmaceutical industry, it can be seen that

maximum disclosure is made by 'Sun Pharmaceutical Inds. Ltd'. 'Infosys Ltd' reveals maximum ICD among the sample companies in Software industry. Apart from these maximum numbers of disclosure made by Cotton, Aluminium and Construction industry is Maharaja Shree Umaid Mills Ltd., Ess Dee Aluminum Ltd. and Unitech Ltd. respectively.

Maximum number of disclosure made by these companies is positive in nature. The extent of information available amongst the sample companies for the Pharmaceutical, Cotton, Aluminum, Construction and Software Industry is lowest for '*Cipla Ltd*', 'Madura Coats Pvt. Ltd' 'Alicon Castalloy Ltd.', 'Puravankara Projects Ltd.' and 'Tata consultancy Services Ltd.' respectively. Also consistent with prior ICR studies, Table 5 shows a predominance of monetary disclosure, with a moderate proportion of disclosures containing narrative quantification and very few ICD containing non monetary quantification. The overall proportion of narrative disclosure range from an average of 26.07% in the pharmaceutical industry in the sample, to 47.83% for the software industry, 45% for cotton industry and 28.57% for aluminum industry and 37.5% for construction industry, while a much larger proportion of monetary quantified ICD was found in all firms. In this study, maximum number of narrative disclosure makes it difficult to draw statistically significant conclusions, further studies could be conducted to investigate its implication and significance for ICR practices. Further it is also found that lower knowledge intensive sector, like construction industry discloses more IC information than high knowledge intensive sector. Hence, overall findings are contrary to the expectation at the time of selecting these sectors for analysis, when it was assumed that sectors with a higher reliance on IC value drivers would disclose more information about these value drivers than companies with a proportionately lower reliance on IC(as found in Bozzolan et al., 2003; Bozzolan et al., 2006; Petty et al.,2006)

5. CONCLUSIONS

In summary it can be concluded that this study is a groundwork endeavor to measure and evaluate voluntary intellectual capital disclosures made by Indian companies in their annual report. A content analysis has been exercised to measure the extent and nature of disclosure in 20 sample companies across five industries with the help of definite criterion identified in the form of IC indicators.

The main results of this study are as follows. First, it can be seen that most of the intellectual capital disclosures items are reported in various segments of the annual report, like Corporate Governance Report, Director's report, Management discussion & analysis report, Auditor's report and consolidated financial statement section. The reported information shall be more advantageous if it can be put together in one section. But still there is a problem of where the various types of IC

related information should be revealed in the annual reports of Indian companies, or should it be disclosed within a consistent framework, may further be investigated by researcher. Second, the centre point of intellectual capital reporting focus on Research and Development, Training, Employees, Customer Satisfaction and Loyalty, Brands and Intellectual property. Moreover, The surprising matter of this study is that there is no single sentence of negative tone of information in all industry Third, in considering the above points in a more detailed trend, the study has concluded that in the era of competitive business world, there is no general consciousness about the importance of intellectual capital reporting among accounting profession .Still it can be seen that only few organization have adopted a practice of measuring and reporting intellectual capital indicators in annual report. Now it's become the biggest challenge by extreme is growing consent about the need to report, what to report, and how to report it.

The results indicate that Mostly, All the industries disclosed monetary quantification information, except Software industry and provide low volume of disclosure for most of the intellectual capital elements included in the study. However, the narrative nature of reporting needs to be improved as narrative statement do not provide the exact information about intellectual capital and thus it creates problem to draw statistically significant conclusion and thus generates problem in valuation because 80 percent or even more than 80 percent of companies' market value depends on intellectual capital (Fornell, 2000). From the accounting point of view, intellectual capital must be reported in financial statements along with other resources of a business entity (Roslender et al., 2006).

In particular, the role of this study is that it carries out the ICD analysis of Indian companies in different sector and highlight that ,from the point of ICD category and ICD element level, the most prominent IC elements reported in each sector appeared to reflect the structured capital related issues likely to be significant in providing companies in that sector with a competitive advantage .However, it also brings into the light that companies from the most knowledge intensive sector did not disclose the most information and thus, does not fully support the prior expectation and findings from other studies in the literature.

To conclude it can be said that to reflect the true picture of the firm's performance and organizational value and to maximize same all the aspects of a firm must be taken into account.

Thus, it can be summarized that intellectual capital should not only be measured correctly but the information yielded also be used effectively (Roos, 2003). The present study finds that overall IC disclosure is weak and insignificant. Companies need to disclose more meaningful and significant information relating to intellectual capital in their annual reports or in a particular suitable framework for intellectual capital disclosure in India. Moreover, from the findings it can also be conclude

that apart from annual report different types of corporate report (like analyst presentation, annual review, interim report, CSR report and preliminary report) could be the form of data source in ICR practices because use of annual report only does not provide significant information required by different stakeholders and such other types of corporate report are gaining more importance and this can be taken up as the key issue for the focus of future research in ICR.

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