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INTELLECTUAL CAPITAL DISCLOSURE: SCENARIO OF A DEVELOPING ECONOMY

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ABSTRACT: In the era of information and knowledge, effective use of Intellectual Capital (IC) is the most important factor that determines the success of a business leading to sustainable competitiveness. Value creation has been a concern for many years and companies have always been trying to find out the best ways for its improvement. Thus, IC disclosure (ICD) is becoming a major part of companies' value in today's knowledge-based economy. Currently, ICD is not compulsory and is done by the companies purely on "voluntary" basis. IC disclosure has become a critical necessity in this new framework. IC measurement, reporting and disclosures in the developing economy are still at a very nascent stage, especially in India.

This is an exploratory study of ICD and measurement by the 8 Indian companies over 5-year period, using content analysis and market value added (MVA) as research methodologies. IC is valued at market value (MV) minus book value (BV). The annual reports of the selected companies were collected from their respective web sites. As part of present study, various statistical techniques have been used to analyze the data. The findings show that on an average, the sample companies reported a positive value of IC; significant correlation has been noticed between tangible assets (TA) and net operating profits (NOP). However, no significant difference was found between percentage of IC to MV, and per cent of TA to MV. The study finds wide-disparity, low-level, and purely voluntary nature of the ICD made by the selected companies. Unfortunately, the omission of IC information may adversely influence the quality of decisions made by shareholders, or lead to material misstatements. We recommend to the international accounting bodies, to take the lead by establishing a harmonized ICD standard, and provide guidance to the big listed companies for proper measurement and disclosure of IC, both for internal and external users.

Keywords: Intellectual capital, disclosure, market and book value, developing economy.

INTRODUCTION

The world is changing very rapidly from an 'industrial' economy to a 'knowledge' economy, and the Indian economy has attracted the attention of the whole globe, with its fast growing knowledge sectors. The rise of the knowledge economy underpins the importance of knowledge management, intellectual capital, and innovation in economic development (Rodrigues et al., 2015). In the modern innovation-driven world, learning and the command of IC have become the 'key' success factors of international competitiveness. New technologies based on this IC are playing the vital role in creating the more sophisticated

product and the business of the future, which will be able to improve the quality of life and the global environment (Bhasin, 2015). Business organizations are realizing that knowledge is the most important factor in fully understanding the performance of their business for creating "economic value". Therefore, the future drivers of any modern economy will no longer be capital, land or equipment, but the "people" and their "knowledge" reservoir (Bhasin, 2008). Indeed, "a knowledge-intensive company leverages their know-how, innovation and reputation to achieve success in the market place" (Jose et al., 2010).

Business dynamics of the 21st century are increasingly determined and driven by Intellectual Capital (IC) elements. Recently, Survilaite et al., (2015), pointed out that "In the era of information and knowledge, effective use of IC is the most important factor that determines the success of a business. The traditional point of view has changed and companies have shifted their focus from investments into tangible assets to investments in intangible assets. IC is considered to be an intangible with human capital, structural capital, and customer capital as its components." According to Anuonye (2015), "IC is the total of all human efforts in the form of intangible assets which can be measured, and through which organizations can gain competitive advantage. The inability of firms to measure and quantify IC has posed fundamental problems overtime in the value measurement of firms." As far as the IC disclosure (henceforth, ICD) is concerned, unfortunately rarely some select organizations from across the world are 'consistently' providing ICD in their Annual Reports (in brief, AR). Market participants, practitioners and regulators alike argue that there is an important need for greater investigation and understanding of ICD, as the usefulness of financial information in explaining firm profitability continues to deteriorate. Bukh (2005), for example, asserts that "traditional disclosure mechanisms are not able to cope adequately with the disclosure requirements of 'new' economy firms." He observed "an increasing dissatisfaction with traditional financial disclosure and its ability to convey to investors the wealth-creation potential of firms." As pointed out by Berzkalne and Zelgalve (2014), "It is necessary to develop a new framework to identify, classify and calculate the value of IC. In addition, the new methodology should be able to better explain the difference between company's book value and market value than the existing methodologies. The AR has long outlived itself as the best source of corporate disclosure because "it contains backwards looking information and is only a one-way means of presenting information rather than engaging with information users." Considering the future prospects of financial reporting system for capital markets and other stakeholders, some organizations are now motivated to evolving a dialogue on finding new ways to measure and report about their IC.

The financial statements' limitation, both in measuring and disclosing "intangible" assets information is the fundamental cause of significant difference between 'book' value (BV) equity and 'market' value (MV) equity (Bhasin, 2015). "Systematic measurement and disclosure of intangible assets (IA or IC) precisely and accurately is very important, because they have a positive and significant effect on the firm's market value" (Gamayuni, 2015). Therefore,

accounting standards should be concerned about this, without further delays. The inclusion of IC information in the corporate financial statements would "result in a balance sheet that more realistically describes the value of the company, and displays all relevant assets from which the company expects to obtain benefits in the coming years." Moreover, IC is critical to sustaining competitive advantage and is a valuable source of wealth creation. Thus, in an ever increasing competitive world, ICD are an important and useful means to keep investors well-informed (Abeysekera, 2007). Although this is an appealing idea, unfortunately, it is not per definition of value to the disclosing company. In short, traditional financial metrics provide insight into "a company's short-term performance but may not be the best way to measure the long-term value creation" (Bhasin, 2014).

It should be noted that the terms intangible assets, knowledge assets/capital, or intellectual assets/capital are very often used as synonyms (Bhasin, 2007, 2008). The term intangible assets can often be found in the accounting literature, whereas the term knowledge assets is used by economists and IC is used in the management and legal literature, but all refer essentially to the same thing. Various estimates indicate that "intangible" assets currently constitute 60-75% of corporate value, on an average. No doubt, intangible assets (IA or IC) are "enablers and sources of value to business, as they transform resources into value-added performance." The traditional point of view has changed and companies have shifted their focus from investments into tangible assets to investments in intangibles (Survilaite et al., 2015). Therefore, the corporate world is now devoting a lot of time and effort to manage its "intellectual" assets in order to improve its shareholder's wealth.

Despite growing interest and demand for IC information, prior research till date suggests a persistent and significant variation, both in the 'quantity' and 'quality' of information reported by firms on this pivotal resource. As existing economic and business metrics track a declining proportion of the real-economy, the deficiency and inconsistency in the disclosure of IC-related information is creating growing information "asymmetry" between 'informed' and 'uninformed' investors. This provides a fertile ground for informed investors to extract higher abnormal returns (Chiucchi et al., 2008). Thus, IC is increasingly being recognized as having much greater significance in creating and maintaining "competitive" advantage and shareholder "value". This clearly calls for a refreshed understanding of business principles, information disclosure, and decision-making processes.

WHAT IS INTELLECTUAL CAPITAL?

Undoubtedly, IC can prove to be a source of competitive advantage for businesses, which may stimulate growth and lead to wealth generation in the long-term. However, the concept of IC measurement, management and disclosure is still relatively new. Accountants, business managers, and policy-makers have still to grapple with its concepts and detailed application (Bhasin, 2008). As

Dadashinasab et al., (2015) stated: "According to resource-based view, one of the important resources for driving organizations performance and creating value is IC." There is a wide range of definitions of IC in the literature, and as expected, definition of IC varies substantially. According to Stewart (2002): "It has become standard to say that a company's IC is the sum of its Human Capital (talent), Structural Capital (intellectual property, methodologies, software, documents, and other knowledge artifacts), and Customer Capital (client relationships)." One of the most comprehensive definitions of IC is offered by the Chartered Institute of Management Accountants (CIMA, 2001): "The possession of knowledge and experience, professional knowledge and skill, good relationships, and technological capacities, which when applied will give organizations competitive advantage."

There are a number of considerable classifications of IC. For instance, Sveiby (2004) first proposed a classification for IC into three broad areas of intangibles, viz., Human capital, Structural capital and Customer capital—a classification that was later modified and extended by replacing customer capital by relational capital. Some examples of IC are shown in Diagram-1. The diagram is only a broad guide to the components of IC as the elements combine and interact with each other and with traditional capital elements (physical things and monetary elements) in ways unique to individual companies to create value.

Diagram-1: Components of Intellectual Capital.

Human Capital	Structural Capital	Customer Capital
Knowledge Competence Skills Individual & Collective Experiences Training Communities of practice...	Business processes Manuals/ policies Information systems Research findings Trademarks Brands...	Customer relations Customer Loyalty Repeat business... **Relational Capital** Relations with vendors Investor trust and feedback...

WHY TO MEASURE AND DISCLOSE INTELLECTUAL CAPITAL?

The pressure from investors and emerging global markets, which are very demanding on the quality of information and analysis of business performance, have led some groups "to voluntarily disclose information explaining their IC investments" (Depoers, 2000). As Charumathi and Ramesh (2015) stated, "In the current scenario of financial reporting regime, investors are increasingly looking at the disclosure practices of companies. The companies also face capital market pressures and need to disclose more than the regulatory norms. There could be several motivators for the companies to disclose more information voluntarily." Therefore, the corporate world is now devoting a lot of time and effort to manage its "intellectual" assets in order to improve its shareholder's wealth (Bhasin,

2011a). "Hopefully, this information would complete the financial statements, provide evidence of the ability of firms to create value in the future, and give more credibility to the information summarized in the annual financial statements" (Garcia-Meca, 2005; Dammak, 2015).

Companies may, therefore, want to measure IC for a variety of reasons. One study by Bernard (2003) identified the following five main reasons. First, measuring IC can help an organization to formulate business strategy. By identifying and developing its IC, an organization may gain a competitive advantage. Second, measuring IC may lead to the development of key performance indicators that will help evaluate the execution of strategy. IC, even if measured properly, has little value unless it can be linked to the firm's strategy. Third, IC may be measured to assist in evaluating mergers and acquisitions (M&A), particularly to determine the prices paid by the acquiring firms. Fourth, using non-financial measures of IC can be linked to an organization's incentive and compensation plan. However, the first four reasons are all internal to the organization. A fifth reason is 'external': to communicate to all stakeholders' what intellectual property the firm owns, how is it valued, and how much is its market worth, etc.? Undoubtedly, improving "external" disclosure of IC can (1) close the gap between book value and market value, (2) provide improved information about the real value of the organization, (3) reduce information asymmetry, (4) increase the ability to raise capital by providing a valuation on intangibles, and (5) enhance an organization's reputation. Good measures of IC, of course, will complement financial measures, provide a feedback mechanism for actions, provides information to develop new strategies, assist in weighting different courses of action, and enhance the management of the business as a whole (Bhasin, 2012a).

WHAT IS THE ACCOUNTING CONNUNDRUM ABOUT INTELLECTUAL CAPITAL DISCLOSURE?

Business has always relied on its "intangible" resources (IA), along with "tangible" resources (TA), to create value and achieve the organization's goals. As very appropriately pointed out by Talukdar (2008) and Bhasin (2015), "The objective of a typical for-profit business firm is to use its assets for producing goods and/or render services, which it can sell for generating 'cash'. It is the 'readiness' of the IA that determines the 'efficiency' of this cycle. The cash so generated is 'used' in general in one of three different ways. It is either capitalized into more TA, or spent for the development of more IA, or paid out as dividends. This is also the reason why TA appears on the balance sheet, whereas IA does not." In order to understand how IC fits into the scheme of things, let us look at Figure-1. The real differentiator between one firm and the next therefore, is the "readiness of the firm's IA for converting its TA into cash in the most efficient manner." This readiness is known as "core competency" and it is the chief source of "competitive" advantage for companies. If the primary objective of all for-profit companies is to effectively manage their future cash flows, then they need to manage the ultimate drivers of these cash flows—the "intangible" assets. In

order to be able to manage "intellectual" assets we have to recognize where this value is coming from and how it is created in an organization.

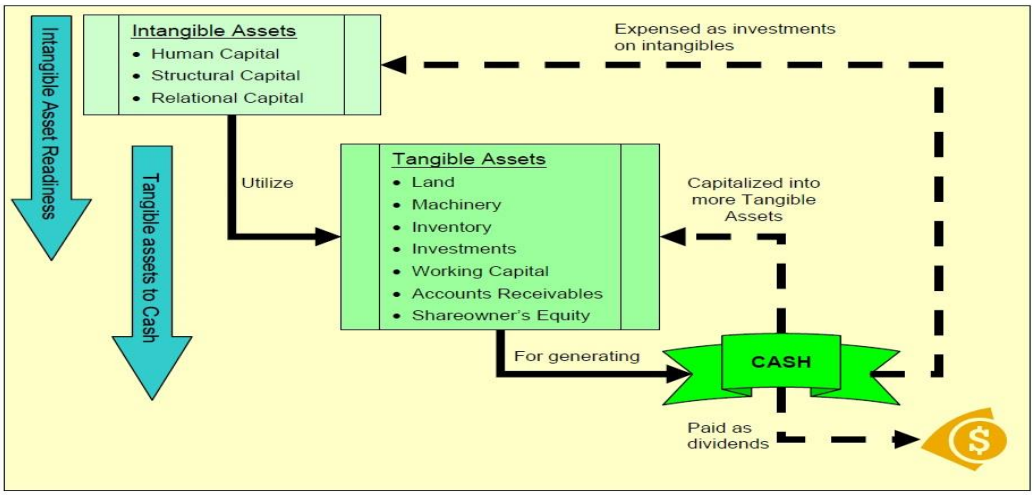

Figure 1: Asset to cash conversion cycle

Surprisingly, modern accounting systems are designed exclusively (with some exceptions) for measuring and reporting "tangible" assets. The Gartner Group, for example, estimates that "intellectual" assets are worth approximately three to four times an enterprise's book value. The dilemma remains that, even though IC can outweigh physical assets enormously, it is very difficult to find measures that will accurately reflect their value within an instrument, such as the "balance sheet." Moreover, physical and IC have different properties and should therefore, have different valuation methods.

Traditionally, physical assets (TA) are considered as leading determinants of the economic performance of any activity. Now, in 'new' economic system, IA is recognized as prominent resource. Thus, in the 'modern' economy, IC is the most important asset for the firm. As Deep and Narwal (2014) described, "FS have failed to reflect the true value created by companies, because only TA are taken into account for measuring the performance of the firm. The legitimate justification is required for the increasing gap between the Market Value (MV) and Book Value (BV) of the companies. The reason for this gap simply may perhaps be the absence of IA from the FS of the firm. When companies have a large proportion of their investment in IA and when traditional performance measurement techniques are used, then inappropriate decisions may be taken by investors and other stakeholders." However, modern accounting systems are designed exclusively, with some exceptions, for measuring and reporting TA (Bhasin, 2014). This creates the phenomena of the "invisible" balance sheet. Figure-2 shows the balance sheet of a typical firm. As Talukdar (2008) pointed out, "Everything that appears below the 'solid' horizontal-line represents the 'invisible' assets of the firm. This is balanced on the right hand side by a corresponding 'invisible' equity. We already know that the market value (MV) of

most public companies is considerably higher than their corresponding book value (BV), which represents only the TA of the firm." The invisible equity of a firm can be considerably large depending on how effectively the firm is harnessing its IC.

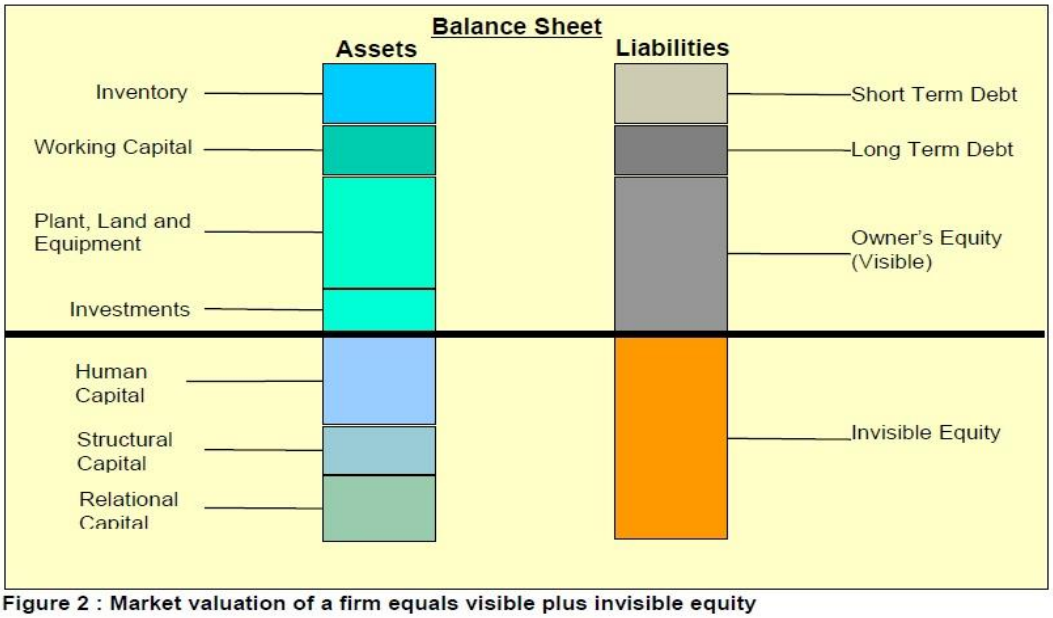

Figure 2 : Market valuation of a firm equals visible plus invisible equity

In the business world where most of the organizational value is based on intangible assets (IA), the ability to recognize and estimate the sources of this value has become vital for companies. Recently, Dammak (2015) stated, "One way to measure knowledge assumes that the stock market implicitly performs the valuation." In its simplest form, this method accepts the market to be invariably accurate in its valuations, and that any excess valuation of a company over its book value will be the correct valuation of the company's intangible assets (Andriessen, 2004). Thus, the market capitalization is made up of the value of the physical assets (book value) and an additional intangible value associated, which is recognized by the financial market but ignored by the balance sheet. Generally, the relationship between Intellectual Capital and Market Value, in equation form, can be stated as:

Market Value (MV) = Book Value (BV) + Intellectual Capital (IC)

When there is a large disparity between a firm's "market" value and "book" value, that difference is often attributed to "IC". Market Value (MV) is, of course, the company's total shares outstanding times the stock market price of each. However, Book Value (BV) is the excess of total assets over total liabilities. Thus, MV can be calculated as: Number of ordinary shares outstanding multiplied by the share price plus the number of outstanding preference shares multiplied by the

share price minus the book value of invested capital (Anuonye, 2015). This equation shows that MV has a tangible portion BV, in addition to an intangible component IC. Hence, supposing MV minus BV is greater than zero (MV- BV > 0); it shows that the company needs to make provision for both measuring and disclosing its IC. It can be assumed that the more knowledge-intensive the company is, the greater the IC value will be. The invisible equity of a firm can be considerably large depending on how effectively the firm is harnessing its IC. For companies in the service sector, it is disproportionately large in comparison to physical assets. Some of the prominent models/methods for measuring and estimating IC of a company are: Skandia Navigator, Organizational IC, IC-index, Technology Broker's IC Audit, Intangible Asset Monitor, MVA and EVA, Citation Weighted Patents, Tobin Q's Ratio, Human Resource Accounting, Balanced Scorecard etc. (Bhasin, 2015). Thus, a long and arduous road still needs to be negotiated before we have reliable measurements and disclosures of IC information.

The Financial Accounting Standards Board's (FASB), SFAS No. 142, "Goodwill and Other Intangible Assets," provides the accounting basis for measuring intangible assets. An intangible asset that is acquired from an external source is initially recognized at its fair value. If an intangible asset is developed internally, it is recognized as an expense when it is incurred. This will limit the recognition of most IC to what is purchased from outside the organization, such as patents, licenses, and trademarks, because they are the only ones recognized as assets. Generally accepted accounting principles do not recognize a value of human capital nor much of the structural capital, such as internally developed software, patents, and brands. In developing the Statement, the FASB relied upon the four recognition criteria found in FASB Concept Statement No. 5, "Recognition and Measurement in Financial Statements of Business Enterprises." These criteria are: (1) The item meets the definition of an asset, (2) the item is measureable with sufficient reliability, (3) the information is capable of making a difference in decisions, and (4) the information indeed represents what it claims to represent, is verifiable, and is neutral.

Since IC is a relatively new concept and there is no agreement on how to 'measure it, many IC items will fail on criterion two (reliability in measurement) and criterion four (verifiability). Until these two criteria can be met, it is doubtful whether many intellectual assets will be included in financial statements. Additionally, there are no standards and/or generally accepted accounting policies for the IC accounts; the reliability of IC accounts depends on quality data and accumulation methods (Bhasin, 2007). Thus, IC does not appear in the traditional financial report. With the rise of the "knowledge economy" over the past 20 years, however, IC is becoming more important and should be disclosed. The various forms of IC disclosure provide valuable information for investors as they help reduce uncertainty about future prospects and facilitate a more precise valuation of the company. However, financial reports fail to reflect such a wide-range of value-creating intangible assets, giving rise to increasing information asymmetry

between firms and users, and creating inefficiencies in the resource allocation process within capital markets.

LITERATURE REVIEW

The main ICD studies were typically cross-sectional and country-specific, although some longitudinal studies have been reported too. Some of the leading ICD studies were conducted in Australia, UK & Ireland, Sweden, Canada, Malaysia, Sri Lanka, New Zealand, Bangladesh and India. While most studies employed "content analysis" as the research methodology, other studies have used questionnaire surveys (Beattie 2007). Despite the fact that the importance of IC has increased in recent times, there are inadequate disclosures of IC in the financial statements of companies (Bruggen et. al. 2009)

Bontis (1998) conducted an empirical pilot study that explores the development of several conceptual measures and models regarding IC and its impact on business performance through principal components analysis (PCA) and partial least squares (PLS) methods. Brennan and Connell (2000) examined substantial difference between company book value and market value, which indicates the presence of intellectual assets, not recognized and measured in company balance sheets and also provides guidelines to companies for reporting on IC. Kamath (2008) used the value added approach to a firm by its IC using a concept of value added intellectual coefficient (VAIC). Bhanawat (2008) measured the IC of companies by applying difference between market value and book value of firm. Further, Miguel Angel Axtle Ortiz (2009) analyzed various components of IC through a humanistic model called "contextual IC components valuation" model. Similarly, Bhasin (2011, 2011a, 2012a) applied the content analysis methodologies for disclosure of IC in their annual reports to the select Indian and Australian IT sector corporations. He also conducted another study (2012, 2014), which sought to measure and disclose the IC reporting practices followed by the Indian pharmaceutical corporations. Moreover, Bhatia and Agarwal (2015) conducted the study based on companies that went through IPO on BSE/NSE in the period 2011-12 using content analysis and by constructing an IC-related disclosure index. Ghasempour and Yusof (2014) in their study of 65 companies listed on Tehran stock exchange. Similarly, Deep and Narwal (2014) analyzed the relationship of IC with financial performance measures of Indian textile sector for a period of 10 years using Value added intellectual coefficient method. Recently, Dammak (2015) performed an empirical investigation to clarify the relationship between voluntary disclosure on the IC and firm valuation through content and factor analysis.

Rodrigues et al., (2015), proposed a model to analyze the relationship between leadership, IC and their contribution to economic renewal. Similarly, Dadashinasab et al., (2015) in their study investigated the IC performance and its association with financial performance of banks in Iran for the period 2007-12. Manolopoulou et al., (2015) examined the IC disclosure done by the Greek

publicly traded firms implementing association and decision rules, using content analysis methodology. Bakar et al., (2015) examined the extent, nature and form of IC disclosure in the AR of 70 largest Malaysian companies. Gamayuni (2015) studied the relationship between intangible assets, financial policies and financial performance of companies in Indonesia. Lipunga (2015) measured the IC efficiency of the commercial banking sector of Malawi and Berzkalne et al., (2015) studies 65 Baltic listed companies from 2005 to 2011. In light of the above review of literature, an attempt has been made in present study to revisit the analysis of IC by market value added method.

In the Indian-context, there has been very limited number of ICD studies, as compared to the US and European counterparts. However, few studies are available on ICD in India using the content analysis. Some studies were performed by researchers like Kamath (2008, 2015), Joshi et al. (2009), Bhasin (2011, 2012, 2014, 2015), Singh and Kansal (2011), Sen and Sharma (2013), Rentala et al. (2014), Charumathi and Ramesh (2015), Soriya and Narwal (2015), etc. The foregoing discussion suggests that the literature on the determinants of ICD in the Indian-context is very limited and inconclusive. Thus, our study builds on the previous literature of ICD practice and overall ICD scenario in the Indian corporate sector, especially pharmaceutical firms. The scope of the study has been confined to 8 companies and market value added (MVA) approach was used on their annual reports for five years, namely, 2005 and 2009, respectively.

MATERIAL AND METHODS

This study is an exploratory one and aims at two issues: (a) first, mapping the current state of IC disclosure scenario, and (b) second, attempt to measure the value of IC by the selected 8 companies in the Indian pharmaceutical industry during the 5 financial years 2005 to 2009. Accordingly, the sample-size of this study consists of the following companies: Aurobindo Pharma Limited, Aventis Pharma Limited, Cadila Limited, Cipla Limited, Dr. Reddy's Laboratories Limited, Novartis Limited, Sun Pharma Limited, and Torrent Limited. The two limitations of this study are: sample size is small and time period of study is also short. But we feel it will provide us a glimpse of the scenario, and help us to analyze and establish the trend of IC disclosure and measurement for the selected pharmaceutical companies from India.

The annual reports for the sample companies are collected from their respective corporate Web sites. The use of annual reports has been validated by several earlier research studies on ground of accessibility, consistency, timeliness and finally, it is an audited and comprehensive document, which is perceived to be more reliable than other documents. "Modified Intangible Assets Monitor" is used to capture the disclosure of elements of IC framework, as done by researchers in the past. The technique used for calculation of disclosure index is content analysis (Joshi et al., 2010). We are also going to use the five-point scale.

In order to attain the second objective, market value added approach (MVA), as a research methodology, is adopted for measuring the value of IC for the selected pharmaceutical companies in India. Moreover, under the present study, various statistical techniques are used to analyze the data. More specifically, the objectives of this part of the study are: first, to measure IC in monetary terms for the sample companies, second, to examine the relationship of IC and tangible assets with net operating profits, and third, to examine effectiveness of IC over tangible assets.

RESULTS AND DISCUSSION

As mentioned earlier, this study aims at portraying the current state of the IC disclosure and measurement in the Indian scenario. Accordingly, "Modified Intangible Assets Monitor" is used to capture the disclosure of elements of IC framework, as done by researchers in the past. The technique used for calculation of disclosure index is content analysis (Bhasin, 2011, 2012, 2014; Joshi et al., 2010; Singh and Kansal, 2011). The five-point scale (0-4 score) has been applied in the following manner: No disclosures (0), Narrative disclosures (1), Quantitative disclosures (2), Monetary disclosures (3), Formula-based/comparative disclosures in statement form (4).

Table 1: Disclosure of IC by the Select Companies in 2008-09

S. No	Name of the Company	IC Disclosure Score	Ranking
1	Aurbindo Pharma Ltd.	19	3
2	Aventis Pharma Ltd.	22	2
3	Cadila Ltd.	07	7
4	Cipla Ltd.	04	8
5	Dr. Reddy's Laboratories Ltd.	28	1
6	Novartis Ltd.	08	6
7	Sun Pharma Ltd.	14	5
8	Torrent Ltd.	18	4
	Overall Average **Maximum Overall Score**	15 96	

(Source: Compiled by the author based on annual reports of companies)

Table 1 provides a broad glimpse of the ICD scores of the 8 selected companies in 2008-09. A careful look at the data reveals that "first three top ICD scorers are: Dr. Reddy's (28), Aventis Pharma (22), and Aurbindo (19) and Torrent (18), respectively; thus, they get first, second and third ranks. However, the ICD score of three companies (viz., Novartis, Cadila and Cipla) is very poor and even below score of 10. Although, 8 listed companies of pharmaceutical sector in India have been taken in the study, IC disclosures vary among companies significantly. The highest and lowest ICD score values are 28 and 04, respectively with a substantial variation. Finally, the overall mean ICD score is 15 out of the total expected score of 96 (24 elements of IAM@4 points), which is drastically low and poor. In most of the cases, ICD are low, narrative and vary significantly among companies. External capital is the most disclosed category. Brands and business

collaborations is most disclosed element of IC, followed by employee competence and internal organizational capital respectively. ICD leads to creation of IC in some companies. Overall, correlation between IC valuation and disclosure is negative, weak and insignificant. The ICD made by some of the sample companies does not adequately fulfill the information needs of stakeholders, and hence companies need to disclose more meaningful information in their annual reports or in separate IC Reports.

Not surprisingly, this finding is in alignment/tune with some of the previous studies. For example, Sen and Sharma (2013) and Bhanawat (2008) attempted to measure and evaluate voluntary Intellectual Capital (IC) disclosures made by Indian pharmaceutical companies in their annual report. The content analysis has been used to measure the extent and nature of disclosure in sample companies with the help of 18 IC indicators across three broad categories, viz., structural capital elements, relational capital elements and human capital elements. From the study, it can be inferred that most of the reported IC attributes are expressed in discursive rather than numerical or monetary terms. The IC disclosure made by the sample companies does not adequately fulfil the informational needs of stakeholders, and hence companies need to disclose more meaningful information in their annual reports or in separate IC reports." Similarly, Guthrie and Petty's (2004) analysis of IC disclosure practices suggests that disclosure has been expressed in discursive rather than numerical terms and that little attempt has been made to translate the rhetoric into measures that enable performance of various forms of IC to be evaluated. The low level of disclosure in both developed and developing countries is testament to the fact that "IC as a concept has not been widely adopted practically."

Let us examine the second objective of the study, namely, estimated value of measurement of IC in monetary terms. Therefore, market value added approach (MVA) as a research methodology is adopted for measuring IC of the eight Indian pharmaceutical companies during the study period. For the purpose of present research, IC is valued as the difference of market value (MV) and book value (BV). This method has already been used by several existing research studies in the past. The average of monthly highs and lows of market prices for the last 12 months is used to calculate the MV of the company. As described earlier, the estimated value of IC of all the 8 selected companies has been calculated by applying market value added (MVA) approach. Thereafter, the relationship of the IC and tangible assets with the net operating profits (NOP) has been discussed in terms of coefficient of correlation. Last, but not the least, the effectiveness of IC over tangible assets has been examined through t-tests.

Table-2 shows the measurement of estimated value of IC of eight selected companies during the five years from 2005 to 2009. The following observations can be made: Keeping in view the computed value of IC, there has been widely fluctuating trend in the amount of IC during the entire period of study among all the pharmaceutical companies. The highest absolute 'average' amount of IC has been reported by the Sun Pharma Limited (rank 1), followed by Cipla Limited

(rank 2), Aventis Pharma (rank 3), Torrent (rank 4), Novartis (rank 5), Cadila (rank 6), and Aurbindo Pharma (7).

Table-2: Estimated Value of Intellectual Capital for Selected Companies

(Rs. in Crores)

Name of company	2005	2006	2007	2008	2009	Average	C.V.	Rank
Aurbindo Pharma Ltd.	305	-125	1163	369	-1464	**50**	1943	**7**
Aventis Pharma Ltd.	2564	3230	2408	1811	1267	**2256**	33	**3**
Cadila Ltd.	868	460	-68	-420	-101	**148**	346	**6**
Cipla Ltd.	1823	16361	4327	12618	11500	**9326**	65	**2**
Dr. Reddy's Laboratories Ltd.	1021	1038	152	-1031	-1853	**-134**	-952	**8**
Novartis Ltd.	707	564	153	186	-53	**311**	101	**5**
Sun Pharma Ltd.	4751	5871	12203	15356	21809	**11998**	58	**1**
Torrent Ltd.	340	335	1159	861	138	**567**	75	**4**
Overall Average	**1547**	**3467**	**2687**	**3719**	**3905**	**3065**	**209**	
Coefficient of Variance (C.V.)	97.13	161.02	153.07	173.02	214.90	**159.83**		
High Value	**4751**	**16361**	**12203**	**15356**	**21809**	**11998**		
Low Value	**305**	**-125**	**-68**	**-420**	**-53**	**-134**		

(Source: Compiled from company annual reports by using MVA Method: IC= Market Value– Book Value, and by using average of market prices for the last 12 months.)

Surprisingly, Dr. Reddy's Laboratories Limited was the only company from the sample, which created the least amount of IC (rank 8) as compared to other companies. It reported not only least amount of average IC but negative value (Rs. -134 croes). The Indian pharmaceutical sector reported "an overall average amount of IC of Rs. 3065 crores during 2004-05 to 2008-09." There is considerable variation, both ups and downs, observed among the average amount of IC of selected companies during five years. Keeping in view the data shown in above Table, 2009 may be considered as very good year for the shareholders of Indian pharmaceutical sector because this year reported highest average amount of IC (Rs. 3,905 crores). By and large, an increasing trend in the average amount of IC, from 2005 to 2009, has been observed, except in 2007 with a marginal fall. The dispersion among the selected companies has been measured in terms of range, which comes to Rs. 12,132 crores. The biggest inconsistency has been noticed in the case of Aurbindo Pharma Limited, as it is evident by its highest coefficient of variation (1943). On the other extreme, least amount of fluctuation has been observed in Aventis Pharma Limited with lowest amount of coefficient of variation (C.V. 33). In other words, the performance of IC shown by Aventis Ltd. is more consistent during the entire period of study, with minor changes. Brennam and Connell (2000) noticed substantial difference between company book value and market value, which indicates the presence of intellectual assets, not recognized and measured in company balance sheets.

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Table-3 depicts the Karl Pearson's correlation analysis of IC and tangible assets (TA) with net operating profit, and then examines the relationship of IC and TA with net operating profit (NOP). It is amply clear from the results that "there is a 'positive' correlation between tangible assets of companies and net operating profit, while in majority of companies 'negative' correlation is found between IC and net operating profit." One strong observation can be made here. Out of 8 companies selected, only two companies viz., Sun Pharma Limited (0.98, 0.98) and Cipla Limited (0.33, 0.92), have net operating profit positively correlated with both IC and tangible assets. In sharp contrast to this, all other companies are negatively correlated with IC and net operating profit. However, the overall average coefficient of correlation of IC and NOP is (-0.26), while the average coefficient of correlation of Tangible assets and NOP is (0.85) during the study period. Furthermore, Probable Error (PE) based test of significance has also been applied. It clearly reveals that significant correlation exists between tangible assets and net operating profit, while no significant correlation exists between IC and NOP.

Table-3: Correlation Analysis for the Selected Companies

Name of Company	Correlation value of Intellectual Capital and Net Operating Profit	Correlation value of Tangible Assets and Net Operating Profit
Aurbindo Pharma Ltd.	-0.67	0.74
Aventis Pharma Ltd.	-0.26	0.72
Cadila Ltd.	-0.72	0.93
Cipla Ltd.	0.33	0.92 (close correlation)
Dr. Reddy's Laboratories Ltd.	-0.66	0.84
Novartis Ltd.	-0.96	0.92
Sun Pharma Ltd.	0.98	0.98 (perfect correlation)
Torrent Ltd.	-0.12	0.80
Overall Average	**-0.26**	**0.85**

(Source: Compiled by author from annual reports of companies)

The effectiveness of IC over tangible assets of selected companies is shown in above Table 4. It shows IC and tangible assets to market value expressed in terms of percentage. The inner brackets () in the above table represents tangible assets to market value in percentage. A careful perusal of the data reveals that the highest average percentage of IC to market value during the 5 years period of study is noticed in the following four companies: Sun Pharma Limited (78%), followed by Aventis Pharma Limited (74%), Novartis Pharma Limited (71%), and Cipla Limited (71%), respectively. Thus, Sun Pharma Limited, Aventis Pharma Limited get first and second rank, while two companies viz., Novartis Pharma Limited and Cipla Limited jointly share the third rank. However, the negative IC to market value is reported by both Dr. Reddy's Laboratories Limited (-4%) and Aurbindo Pharma Limited (-7%). Overall, correlation between IC valuation and disclosure is negative, weak and insignificant.

After a careful look at the Table 4, the following additional broad generalizations can be made. On an average basis, the overall pharmaceutical industry reported 41% of IC to market value, and 59% of tangible assets to market value. So, it very clearly indicates that tangible assets (TA) are more powerful as compared to IC. Moreover, on making a year-wise analysis, it is observed that there is a continuous declining trend in IC to market value ratio throughout the study period. For example, it declined from 52.00 in 2006, 47.37 in 2007, 36.00 in 2008 and finally, stands at 19.00 in 2009. However, a lone exception was in the year 2006 when the overall ratio slightly increased from 51.78 in 2005 to 52.00 in 2006. The highest IC to market value ratio is noticed in the year 2006 with 52%, while least ratio is noticed in the year 2009 with 19%. Further, the highest tangible asset to market value ratio is observed in the year 2009 with (81%) and the least in the year 2006 with (48%). Further, in order to examine the hypothesis that there is no significant difference between mean values of IC & T.A. to M.V. (in percentage); a t-test has also been administered. The calculated value of t-test is derived at (0.53) where table value at 5% level of significance at 14 d.f. is (2.15). So, our null hypothesis is accepted because calculated value is less than table value, which clearly indicates that there is no significant difference between % of IC and tangible assets to market value (MV). The small visible difference is only due to sampling fluctuations and not due to any major reason.

Table-4: Percentage of Intellectual Capital, Tangible Assets to Market Value

Name of Company	**2005**	**2006**	**2007**	**2008**	**2009**	**Average**	**Rank**
Aurbindo Pharma Ltd.	17(83%)	-8(108%)	35(65%)	11(89%)	-92(192%)	**-7(107%)**	**7**
Aventis Pharma Ltd.	84(16)	85(15)	77(23)	68(32)	58(32)	**74(25)**	**2**
Cadila Ltd.	47(53)	30(70)	-6(106)	-43(143)	-6(106)	**4(95)**	
Cipla Ltd.	54(46)	89(11)	63(37)	78(22)	72(28)	**71(29)**	**3**
Dr. Reddy's Laboratories Ltd.	31(69)	28(72)	5(95)	-37(137)	-47(147)	**-4(104)**	**4**
Novartis Ltd.	54(46)	90(10)	63(37)	78(22)	72(28)	**71(107)**	**3**
Sun Pharma Ltd.	79(21)	66(34)	79(21)	81(19)	83(17)	**78(22)**	**1**
Torrent Ltd.	49(51)	36(64)	63(37)	52(48)	12(88)	**42(57)**	**5**
Overall	**51.87(48)**	**52.00(48)**	**47.37(53)**	**36.00(64)**	**19.00(81)**	**41(59)**	**6**
High	84(16)	90(10)	79(21)	81(19)	83(17)		
Low	17(83)	-8(108)	-6(106)	-37(137)	-6(106)		

CONCLUSION

The firm value is generated not only from its physical and financial assets, but also its IC assets. IC shapes the patterns of business reality leading to sustainable competitiveness. In the current scenario of financial reporting regime, investors are increasingly looking at the disclosure practices of companies. The companies also face capital market pressures and need to disclose more than the regulatory

norm (Charumathi and Ramesh, 2015). There could be several motivations for the companies to disclose more information voluntarily. It is widely accepted that IC measurement and disclosure discussions have entered the corporate world, but review of the extant literature and previous studies reveals that IC, as a concept, has not been widely adopted practically by the corporate sector (Bhasin, 2015). In view of the increasing strategic importance of IC information, more and more organizations are shifting their focus to measurement, disclosure and management of IC, their most valuable assets. Unfortunately, IC is very difficult to measure and disclose both accurately and consistently, but its returns can be nearly infinite. Research till-date has yet to conclude how best to measure and disclose the IC (Bhasin, 2007, 2008). Current debates about IC are part of the search for a methodology to measure the knowledge base of a firm.

If you may recall, this study is an exploratory and aims at two issues: (a) first, mapping the current state of IC disclosure scenario, and (b) second, attempt to measure the value of IC by the selected 8 companies in the Indian pharmaceutical industry during the 5 financial years 2005 to 2009. To answer the first issue, we selected eight-listed companies from the pharmaceutical sector in India. MIAM is used to capture the disclosures. But as expected, IC disclosures are low and vary across these companies significantly. In most of the cases, ICD are low, narrative and vary significantly among companies. Furthermore, the above analysis reveals that the ICD among Indian pharmaceutical companies is very low. Not surprisingly, this finding is in alignment/tune with some of the previous studies. For example, Guthrie and Petty's (2004) analysis of IC disclosure practices suggests that disclosure has been expressed in discursive rather than numerical terms and that little attempt has been made to translate the rhetoric into measures that enable performance of various forms of IC to be evaluated. Similarly, Sen and Sharma (2013) in their study concluded as: "It can be inferred that most of the reported IC attributes are expressed in discursive rather than numerical or monetary terms." The IC disclosure made by the sample companies does not adequately fulfil the informational needs of stakeholders, and hence companies need to disclose more meaningful information in their annual reports or in separate IC reports. No doubt, IC discussions and experimentation process has entered the corporate world but evidence published reveals that "IC as a concept has not been widely adopted practically. The low level of disclosure in developed as well as developing countries (like India), is testament to this fact.

Second, attempt is made to measure the estimated values of IC using MVA approach. There have been widely fluctuating trend in the amount of IC during the study period, across all eight companies. Brennan and Connell (2000) also noticed substantial differences between company book value and market value, which indicates the presence of intellectual assets, which are not recognized and measured in company balance sheets and also provides guidelines to companies for reporting on IC. As concluded by Singh and Kansal (2011), "The computed values of IC reveal that huge value of IC remains unreported in the balance sheet." Because of lack of standardized accounting guidelines on this vital asset,

resources worth thousands of millions go unreported in the annual reports thwarting the basic motive of true and fair view of financial statements." Thus, IC measurement, reporting and disclosures in the emerging economy are still at a very nascent stage, especially in India. Though the awareness of the significance of IC disclosure is steadily improving over a period of time, the extent of disclosures is far behind the standards set by companies in developed economies (Kamath, 2015, 2015a). If the measurement and disclosure is made mandatory, then the stakeholders would get a clear picture about the true performance of the firms and would enable them towards better decision-making.

Recently, the FTI Consulting (2015) has announced the launch of its Disclosure Index, a report that tracks mandatory and voluntary disclosure practices amongst India's leading publicly-listed corporations. When scored on a composite scale of 1 to 10, the "Indian Disclosure Index" revealed that only 41 percent of constituent companies of the BSE 100 index were fully compliant on mandatory disclosure parameters. The report also revealed low levels of voluntary disclosure by Indian companies, with a median score of 3.5 (out of a maximum of six) with most providing inadequate information relating to business strategy and debt. Scores for strategy articulation and debt-related information are proxies for an opinion on management quality, a significant and subjective filter in the investment decisions of institutional investors. It is surprising that a large majority of BSE 100 index constituents did not articulate corporate strategy in sufficiently clear terms. This is also an indication of the currently-prevalent focus on financial metrics over non-financial ones. This is an area that needs to be revisited by Indian companies and their boards when finalizing their disclosure policy. Thus, on voluntary disclosure, Indian companies have a lot of work ahead of them to improve the manner in which management quality is perceived externally.

It is necessary to develop a new framework to identify, classify and calculate the value of IC. The International Accounting Standards Committee and its national counterparts face a challenge in setting standards for IC disclosure (Bhasin, 2015). The measurement examples thus far have been too firm-specific and no set of indicators could hope to be general enough to encompass the needs of a variety of international and industry settings. In line with the opinion of Anuonye (2015), we also recommend that "a standard on IC accounting be issued by International Financial Reporting Committee (IFRC) to enable firm's measure and record their IC values, as they relate to earnings per share in their income statement." Auditing all of the different frameworks at this point would be pointless. The adoption of IC should be given due weightage in rating the companies. The disclosure of IC influences market price, therefore it may lead to improvement of rating of the companies as well, through enhancement of market capitalization. Voluntary disclosure is the only solution in the short-term. In the long-term, it will be up to the demands of the capital markets. If shareholders and analysts agree that IC disclosure is beneficial in explaining business performance, than companies will have no choice but to appease their audience. In the meantime, academic

researchers must continue to push the envelope on empirically-based studies so as to support the growing number of early adopters.

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