ISSN (Online): 2230-7893
www.IJCEM.org

Impact of Intellectual Capital Disclosure on Market Cap

Mahalakshmi Mudliar
Associate Professor,
Prin. L N Welingkar Institute of Management Development and Research, Mumbai

Abstract

The study aims to empirically investigate, the impact of Intellectual capital (IC) on financial aspects of the organizational performance and on market capitalization. The study also aims to develop a descriptive framework of the components of the IC. Using the components of the intellectual capital as parameters, the contents of the annual reports of a sample of 50 companies from BSE100 companies are analyzed over a three-year period from 2008-2009. Regression models are used to examine the relationship between components of IC and the selected financial parameters. The study analyses whether there is any conclusive evidence to support a definitive association between IC and financial performance of the sample companies. The data is further analyzed to establish association of reporting norms and its impact on financial performance over a cross section of industries for disparity in reporting. The study is for the period before new IFRS /accounting standards is implemented in India. However certain companies in the sample have voluntarily started adopting the new IFRS norms. The study is restricted to examining the impact of increased IC related disclosures on the firm's performance. The study will provide a new dimension to evaluate the performance of the firms for the stakeholders. This study is relevant in the current times when the disclosure norms are on the verge of a major change. The overall disclosure norms in India have been relatively low. The study explores the areas of IC disclosure that can be useful and provide relevant information to the users of the annual reports.

Keywords: *Brand, Intellectual capital, IC disclosure, Market capitalization, Reporting*

1. Introduction

Intellectual capital (IC) is significant contributor in the value creation process of an enterprise. It plays a key role in strengthening an enterprises competitive position and making sustainable profit. In last couple decade, India has been transiting from a industrial manufacturing-based economy to knowledge-based economy. With such a transition taking place, the companies find that the future sales and growth are not dependent on the tangible assets that they possess but the intangible assets like brand, technology, innovation, knowledge, research & development, customer satisfaction etc.

This paper has two objectives. The first is to use the components of the descriptive IC framework to content analyze a sample of BSE100 companies listed on Mumbai Stock Exchange annual reports for evidence of IC disclosure. The paper analyses the evidences for the last three years from 2008-09 to 2010-11. The data collected provides evidence of changes in the disclosure over the years considered for the study. The data covers 17 sectors in the "manufacturing" and "services" sector and analysis whether the importance of IC has increased over years in case of "services" sector companies.

Another objective of the company is to investigate the impact of disclosure on the firms market capitalization over the three year study period from 2008-2011. This is period in which the SENSEX index has fluctuated from an average of 8995 in March 2009 to 18457 in March 2011 (source BSE- Key indicators).

The study also analyses fluctuations in the firm's market capitalization when compared with the IC disclosures. There is increasing realization that IC accounts for a large proportion of assets of the companies. The gap between the market capitalization and net asset value has become particularly noticeable in the last couple of decades. A study carried out by Brand finance revealed that at the accounting year-end December 1998 only 28% of FTSE (Financial Times Stock Exchange) index-350, market capitalization was explained by their net balance sheet assets. Intangible assets were largely responsible for the remaining 72% of the value. In most cases, brands are the most significant intangible assets. Partly, this value gaps is the result of stringent accountancy standards that make it difficult for the companies to fully recognize their intangible asset base.

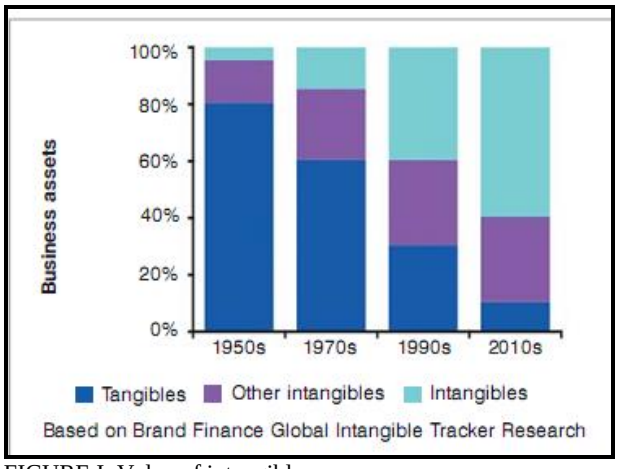

FIGURE I: Value of intangibles

Source: Brand Finance report

Lev (2002) investigated the market-to-book value ratio for United States Standard & Poor's 500 (US S&P 500) companies from 1977 to 2001 and found that over 80 percent of company market value was not included in the figures reported in the financial statements.

Preliminary survey reveals that this is true from Indian context as well. The ratio of difference between the net worth to market

capitalization was 53% in 2005 and increased to 70% in 2010. Primary analysis of the gap between the market capitalization value and net worth for the Indian companies for the last decade reveals that the gap is widening. Apart from the aberration in 2009 when the market took a beating due to cascading effect of the global recession the gap has consistently widened. The graph explaining the interrelationship between market capitalization and net worth/ book value is given below.

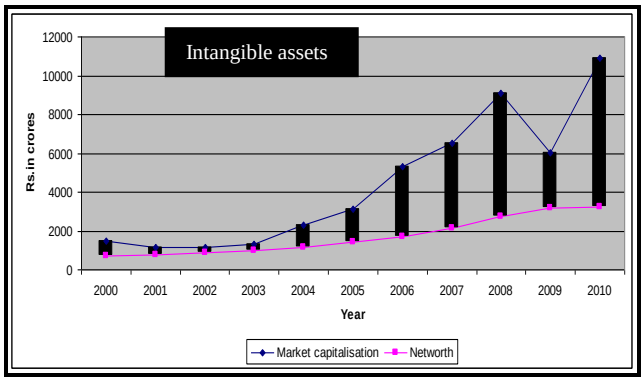

FIGURE II: Market cap to Net worth
Source: compiled by the author

Since the gap between financial value and market value increased dramatically, it has been suggested that in addition to considering the figures shown on financial statements, a company should also consult the information from other indicators, such as brands, human capital, customer relationship and innovation. The real value of company is in its intangible assets, such as brands, human resources, skills, knowledge and processes and innovation capabilities.

2. Literature review

Guthrie J. et al. have reviewed the use of content analysis as a research method in understanding intellectual capital reporting. The study has various suggestions for using content analysis with respect to the size and industry variables, unit of analysis and the method of data capture. They have finally concluded that content analysis is one of the widely used research methods for investigating the frequency and type of IC reporting.

Jui-Chi Wang (2008) has studied the relationship of investments in IC in relation to company's stock price. They have found human capital is the knowledge that individual employee acquire and use to produce goods, services or ideas. Their study suggests that while IC indicators show a positive correlation between employee productivity and market price of the company.

Firer and Williams (2003) investigated the relationship between a company's resource base (physical, human and structural capitals) and dimensions of corporate performance (profitability, productivity, and market valuation) in 75 South Africa companies. Using correlation and multiple regression statistical methods, they concluded that physical capital affects a company's performance although IC has become increasingly important in South Africa.

Chen et al. (2006) investigated the relationship between IC and a firm's market value and financial performance. Their regression model evaluated the relationship between market value/book value ratio and value creation. Moreover, they examined the relationship between IC and the firm's current and future financial performance. The statistical findings supported a significantly positive relationship among IC, market value and financial performance. They also noted that IC could be indicative of future financial performance; predictors of research and development provide further information on structural capital because they have a positive relationship with profitability and market value for listed companies in Taiwan.

As analyzed by Liang and Yao (2005), net income is the most significantly explanatory capability in market value of Taiwan information electronic company when examined on intangible asset, balanced scorecard and IC, respectively. There was evidence to show that economic added-value and residual income are statistically supported in evaluating and explaining business performance.

The components of IC factors of 58 Fortune 500 companies were analyzed by Abdolmohammadi (2005) in a study over a five-year period from 1993 to 1997. The study aimed at investigating the effects of disclosure of IC on market capitalization. The findings showed that there is more disclosure by "new" economy sectors companies on information technology and intellectual property while companies in "old" economy sectors companies have better disclosure on partnership and brand as their IC.

Tseng and James Goo (2005) examined the relationship between IC and corporate market value of a company based on three perspectives: IC, resource-based and finance. They categorized IC framework in term of human capital, organizational capital, innovation capital and relationship capital. The research was carried out on Taiwanese manufacturers and data was collected from a database and a survey. The result is a significant positive relationship between IC and market value of a company using Tobin's Q, market/book value and value-added intellectual coefficient.

Seetharaman,A. *et.al*. study has analyzed the challenges faced by accounting world in understanding the difference between the business entity value reported in the financial statements and the market valuation. They have attempted to identify how IC is measured and reported in the financial statements.

Bassi and van Buren (1999) have investigated 500 US corporations and found a positive relationship between IC investment and financial performance. They have included know-how, customer knowledge, employees' expertise and process as components of IC. They suggest that if a company continues to invest on IC, it can improve its competitive advantage. And if a company makes continuous efforts in maintaining its services and products, there is a deferred effect on financial performance which may not be evident in an immediate short-term period. The American Society for Training and Development (ASTD), Inc. has developed a model for IC management that groups measurement indicators according to IC and financial performance. IC measurement indicators are human capital,

customer capital, innovation capital and process capital. Return on equity, EPS, ROA, market value, market share, new sales, revenue per employee, total shareholder return and growth rank in industry are used to measure the financial performance (van Buren, 1999).

Orens, R.et al. have empirically tested the web-based IC reporting on firm's value and its cost of finance. They have examined the corporate web-sites for four continental European countries (Belgium, France, Germany and Netherlands) through content analysis. The study found that greater IC disclosure in continental Europe is associated with lower information asymmetry, lower implied cost of equity capital and lower rate of interest paid.

There is not much evidence of literature measuring IC disclosure in the annual reports of the companies in India though similar studies have however been carried out for other countries. The current study attempts to bridge this gap.

3. Meaning of Intellectual capital

There is no universal definition of IC. In 1999, at the 3rd International Conference on the Management of Intellectual Capital, Hamilton, Canada experts from all over the world thought it is difficult to define intellectual capital in explicit terms. The researchers on the subject have defined IC differently in various literatures depending on the circumstances and the context of the research. According to Stewart "…….IC is intellectual material- knowledge, information, intellectual property, experience- that can be put to create wealth" (1997). Technically IC can be defined as the firm's market value minus the replacement cost of its tangible assets.

The most used classification is by Leif Edvisson (1997) who in case of Skandia Insurance, a Swedish based insurance company has broken down the IC into three categories; namely human capital, organizational capital and customer capital. He has defined IC as a source of intangible assets that often does not appear on the balance sheet.

Bontis et.al (1999) has defined IC as the collection of intangible resources and their flows. Harrison and Sullivan (2000) have defined IC as knowledge that can be converted by the enterprise into profit. While Roos et al (1997) have stated that IC is the sum of knowledge of companies members and practical translation of this knowledge like trademarks, patents and brands into the economic benefit for the organization.

Moore (1996) has defined IC as customer capital, innovation capital and organizational capital. Seetharaman *et.al.* have defined IC indicators as brands, competitive advantage, customer relationship, human capital, products, trademarks, research and development. Stewart (1997) has defined IC as that intellectual material in the form of knowledge, information, intellectual property, experience that can be put to use to create wealth.

Considering that the disclosure of IC in annual report is not consistent, the revised accounting standard has provided some guidelines on what is an intangible asset. Indian Accounting Standards (IND-AS) have defined as an intangible asset is an identifiable non-monetary asset without physical substance. The companies use their resources, or incur liabilities, on the acquisition, development, maintenance or enhancement of intangible resources such as scientific or technical knowledge, design and implementation of new processes or systems, licences, intellectual property,

According this standard, the definition of an intangible asset requires an intangible asset to be identifiable to distinguish it from goodwill. Goodwill recognized in a business combination is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. The future economic benefits may result from synergy between the identifiable assets acquired or from assets that, individually, do not qualify for recognition in the financial statements.

4. Framework of IC components

In case of most of the companies, IC represents the company's real value. The quality of IC reflects the market's competitive competence for company and affects the investor's evaluation and opinion of the company.
Based on the literature reviewed and the earlier studies on IC components, the IC framework considered for this study is as follows:

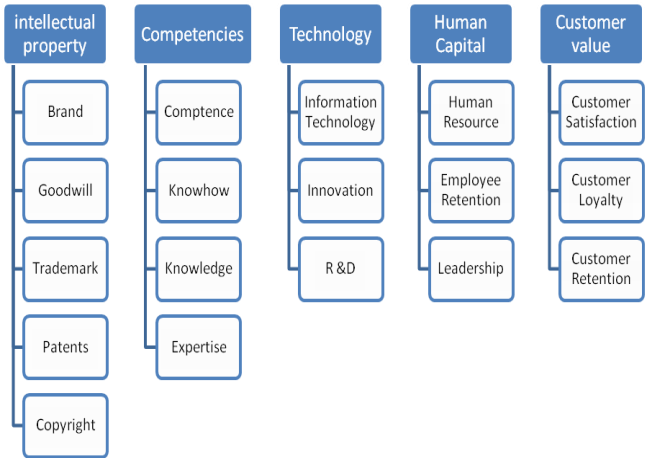

FIGURE III: Framework of IC components
Source: compiled by the author

The framework has been designed keeping in mind the Indian scenario and terminologies used in the Indian annual reports.

5. Disclosure of IC components in annual reports

The study investigates the IC components from the framework given in figure I. The objective is to investigate the extent of disclosure in a sample of BSE100 companies over the period from 2008-09 to 2009-11. Guthrie and Petty (2000) have studied the frequency of appearance of Some IC components in annual reports of the 20 largest Australian companies.

Brennan (2001) has reported evidence from annual reports of 21 Irish companies. Olsson (2001) reports on the 18 largest Swedish companies and Bozzolan companies.

Goh and Lin (2004) provide evidence of disclosure of IC in annual reports of 20 Malaysian companies. Madan (2011) has carried out a longitudinal study to analyze how three Indian firms have measured and reported IC in 1996-97.

Mohammad J. Abdolmohammadi (2005) has studied 58 of Fortune 500 companies over a five-year period from 1993 to 1997. They found that frequency of disclosure has increased over the study period and that IC has a significant effect on the market capitalization.

Jui-Chi Wang (2008) has examined the relationship between the IC in US electronic industry's with the company's market value for the period from 1996 to 2005. This study indicated that disclosure of /IC annual reports of the companies have a significant impact on market value.

The current study provides evidence on the nature and extent of IC disclosures from the period in 2008 to 2011 and analyses its impact on the market capitalization. The first hypothesis investigated is:
H_1: The disclosure of IC components has increased over the years 2008-2011

There are not many studies which have investigated the impact of disclosure of IC on a firm's market capitalization. While there is no direct evidence in the literature regarding the effects of disclosure of IC components on market capitalization, studies made in other context provide evidence of significant effect of voluntary disclosure on trading volumes and market capitalization. In this regard, a study by Lang and Lundholm (2000) is significant. They have found evidence that the firms with high levels of disclosure experience price increases prior to their public offering. Healy et al. (1999) finds that increase in the disclosure leads to increase in firms valuation, improves stock liquidity, and creates interest in the company's shares. These and other studies carried out by Skinner (1994), Welker (1995) and Bostosan (1997) show a positive correlation between IC disclosure and market capitalization.

Hence the second hypothesis considered for the study is:
H_2: IC disclosure (one critical component) does not affect the fluctuations in the market capitalization

6. Data collection, Analysis and Findings

Using the components of the intellectual capital as parameters, the contents of the annual reports of a sample of 50 companies from BSE100 companies are analyzed over a three-year period from 2008-2009 to 2010-11. The companies were chosen from BSE100 list so as to limit the analysis to large companies and reduce the bias of size. The studies done so far indicate that the size is correlated to the level of voluntary disclosure. A sample of 50 companies were chosen out of 100 companies in BSE100 list ensuring that the sample size is large enough to render a reasonable size statistical analysis. However it is small enough to enable content analysis which is a time-consuming process. The companies in the sample along with the sectors they fall in are given in Table I. This classification of sectors is based on the Mumbai Stock Exchange classification of industries. The average market capitalization of the companies is arrived at by averaging the market capitalization at the end of the three years i.e. 31st March 2009, 31st March 2010 and 31st March 2011. The market capitalization data was collected from capitaline plus database. The average market capitalization for the companies in the manufacturing sector sample (n=34) was ₹ 48,090 crs with the standard deviation of ₹57,893 crs. As against this the average market capitalization of the companies in the service sector sample (n=16) was ₹55,693 crs with a standard deviation of ₹52,075 crs. These averages are significantly different with a t-stat of -6.41 and p-value of 0.00.

Further annual reports of the sample companies have been studied through content analysis which is reasonable and accepted methodology for data collection. Krippendroff (1980) and Gray et.al (1995) have used this method for studying annual reports in general. The method applied is to search the text for specific terms without any subjective judgment about the meaning or importance of the subject matter. No distinction is made between IC-components that were recognized in the body of the financial statement or those that are disclosed somewhere in the notes to accounts, directors report and management discussion and analysis. Both mandatory and voluntary disclosures are considered for the analysis.

In order to test the first hypothesis that the disclosure of IC has increased over the years, an analysis is performed for each of the IC components investigating the changes that have occurred in the frequency over the years 2008-2011. The results are presented in table II. The aggregate frequency of disclosure of IC has gradually increased over the three-year period from 4.43 in 2008-09 to 4.92 in 2010-11. While there is no significant overall increase, a detailed results show variations in IC categories.

From the analysis, it is found that "brand" is one of the critical components in IC disclosure. The regression analysis of "brand" disclosure on market capitalization reveals that variation in market capitalization can be explained by IC component – brand. To further analyze the data, regression analysis is carried out on "brand" the IC component as an independent variable and fluctuation in the market capitalization as a dependent variable. The fluctuations in market capitalization is analyzed by measuring the increase / decrease in the market cap as in March 2011 to the value in September 2011 The results indicate that we reject the null hypothesis with p value of 0.024, which are lower than α i.e. 5% or 0.05 in case of all companies. The level of r square signifies that 31.80% of variation in market capitalization is caused by the dependent variable. It therefore evident that increase in the disclosure of "brand" as IC component causes less fluctuation in the market capitalization value.

Summary and conclusion

A descriptive framework of the IC components and its categories is presented in this study. Using the content analysis of annual reports of a sample of BSE100 listed companies from Mumbai stock exchange; the impact of IC disclosure on market capitalization of the firm is also investigated. Content analysis of 149 annual report of companies over the period from 2008-09 to 2010-11 on the nature and extent of disclosure of IC components show a significant correlation between IC disclosure and the value of market capitalization.

ISSN (Online): 2230-7893
www.IJCEM.org

Analysis of the frequency of disclosure of IC components and its categories show evidence of significant variation in disclosure among companies within sectors and in between sectors. While these differences do not show a clear pattern by industry, a comparison between manufacturing and services sector indicate a difference. Specifically, these sectors do not differ largely on "copyright", "expertise" and "trademark" of the IC categories but while the manufacturing sector discloses significantly more on "brand" and "technology" than the services sector, the opposite is true for "goodwill", "knowledge", "leadership" and "innovation" where the services sector discloses more than manufacturing sector.

The evidence of the current paper shows that there is a positive and significant correlation between IC disclosure and market capitalization. This implies that the companies which provide disclosure voluntarily stand to benefit.

This study has been limited to a sample of Indian companies which are listed in Mumbai stock exchange and who are required to meet the disclosure norms are specified in the Companies Act, SEBI and accounting standards laid down by ICAI. With the advent of IFRS and revamp of IAS, the disclosure norms is likely to be similar for companies in Europe (which was already adopted IFRS) and US (which is in process of adapting IFRS to US GAAP). Once the IFRS gets completely implemented, a comparative study of Indian, European and US companies to investigate the cost and benefits of IC disclosure may be beneficial.

One of the issues of this study is that the focus is not on the substance of the disclosure. The study is based on the frequency of the appearance of keywords namely the IC components in annual reports. A focus of the substance of the statements in which keywords appear will necessitate an different methodology for research. There is therefore scope for further research. Also, because a keyword search was used in this study, it is unclear how much of the data relates to quantitative evidence for which either recognition or value-based footnote disclosure has been provided and how much is purely qualitative. This would be the ground for future research. Presently reliable methods of measuring IC are not available and research is required to provide such reliable measures in the future.

Formal evaluation processes and systems for IC management have been created and developed by several companies, but not every company is aware of the importance of these processes and systems. Because of the difficulty of precise definition, identification and measurement, IC is not fully shown on the financial statements. However, in order to increase the likelihood of future success, management should reform IC management to maximize the company's value.

TABLE I: Companies in the sample

Company	Sector	Mfg. / Services		Avg. mkt. cap.(₹ in crs.)
Adani Power	Power	M		24934
Asian Paints	Chemical	M		17123
Axis Bank	Finance	S		39959
Bajaj Auto	Transport Equipment	M		26762
Bharat Forge	Transport Equipment	M		5296
B P C L	Oil & Gas	M		18133
Bharti Airtel	Telecom	S		124333
B H E L	capital goods	M		97099
Cairn India	Oil & Gas	M		53209
Canara Bank	Finance	S		17122
Cipla	Health care	M		23308
DLF	Housing related	M		42056
Dr Reddy's Labs	Health care	M		19173
Glaxosmit Pharma	Health care	M		14398
GMR Infra.	Power	M		18705
Grasim Inds	Textiles	M		20940
HDFC Bank	Finance	S		79542
Hero Motocorp	Transport Equipment	M		30616
Hind. Unilever	FMCG	M		56138
H D I L	Housing related	M		6605
ITC	FMCG	M		103545
ICICI Bank	Finance	S		90467
Idea Cellular	Telecom	S		19814
Indiabulls Fin.	Finance	S		3444
I O C L	Oil & Gas	M		66463
Infosys	Information Technology	S		137247
I D F C	Finance	S		16865
Jindal Steel	Metal	M		49748
JSW Steel	Metal	M		15966
Kotak Mah. Bank	Finance	S		23174
Larsen & Toubro	capital goods	M		79331
Maruti Suzuki	Transport Equipment	M		33272
Mundra Port	Transport services	S		23983
Nestle India	FMCG	M		25056
NMDC	Metal	M		97043
NTPC	Power	M		159467
Punjab Natl.Bank	Finance	S		27855
Reliance Inds.	Oil & Gas	M		311385
St Bk of India	Finance	S		125155
S A I L	Metal	M		71318
Sun Pharma.Inds.	Health care	M		35286
Suzlon Energy	capital goods	M		8494
Tata Chemicals	Diversified	M		6631
Tata Power Co.	Power	M		27030
Tata Steel	Metal	M		43566
TCS	Information Technology	S		145701
Titan Inds.	Consumer Durable	M		9517
UltraTech Cem.	Housing related	M		17442
Yes Bank	Finance	S		6966
Zee Entertainmen	Media	S		9456
Manufacturing sector	**Mean**		**34**	**48090**
	Std. dev.			**57893**
Services Sector	**Mean**		**16**	**55693**
	Std. dev.			**52075**
	T- stat			**-6.41**
	p-value			**0.00**

Source: compiled by the author

TABLE II: Frequency of IC disclosure by year

Components	***Mean***		
Long-term asset	**2009**	**2010**	**2011**
Brand	11.75	13.04	14.68
Goodwill	7.15	6.27	7.06
Trademark	0.71	0.86	0.62
Patents	1.27	2.92	2.32
Copyright	0.17	0.14	0.12
Competencies			
Competence	0.23	0.18	0.36
Knowhow	0.29	0.24	0.22
Knowledge	10.58	12.63	7.68
Expertise	3.73	4.61	3.46
Technology			
Technology	28.92	28.94	27.92
Innovation	6.31	5.29	6.94
Research & Development	1.73	1.69	1.68
Human capital			
Human resource	1.15	1.37	2.90
employee retention	0.02	0.02	0.00
leadership	7.40	7.90	11.00
Customer capital			
Satisfaction	0.44	2.57	2.48
Loyalty	0.04	0.78	0.50
Retention	0.04	1.33	1.30
Aggregate	**4.43**	**4.90**	**4.92**

n= 149

Source: compiled by the author

TABLE III: Regression – "Brand" on market cap fluctuation

Regression Statistics	
Multiple R	0.318016
R Square	0.101134
Adjusted R Square	0.082408
Standard Error	19.80931
Observations	50

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2119.259	2119.259	5.400641343	0.024409664
Residual	48	18835.62	392.4088		
Total	49	20954.88			

	Coefficients	*tandard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	18.50397	3.248963	5.695344	7.29579E-07	11.97148675	25.03644413
X Variable 1	36.05797	15.51596	2.323928	0.024409664	4.861044992	67.25488855

Source: compiled by the author

References

Abdolmohammadi, M. (2005), "Intellectual capital disclosure and market capitalization", *Journal of Intellectual Capital*, Vol. 6 No. 3, pp. 397-416.

Bassi, L.J. and van Buren, M.E. (1999), "Valuing investments in intellectual capital", *International Journal of Technology Management*, Vol. 18 No. 5, pp. 414-32.

Bontis, N. (1999), "Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field", *International Journal of Technology Management*, Vol. 18 Nos 5/6/7/8, pp. 433-62.

Botosan, C. (1997), "Disclosure level and the cost of equity capital", *Accounting Review*, Vol. 72, No. 3, pp. 323-50.

Brennan, N. (2001), "Reporting intellectual capital in annual reports: evidence from Ireland", *Journal of Intellectual Capital*, Vol. 14 No. 4, pp. 423-36.

Chen,C., Guo,W. and Mande, V. (2006), "Corporate value, managerial stockholdings and investments of Japanese firms", *Journal of International Financial Management and Accounting*, Vol. 17 No. 1, pp. 29-51.

Edvinsson, L. and Malone, M. (1997), Intellectual Capital: Realizing Your Company's True Value by Finding its Hidden Brainpower, Harper Collins, New York, NY.

Firer. S and Williams, S.M (2003), "Intellectual capital and traditional measures of corporate performance", *Journal of Intellectual Capital*, Vol. 4 No. 3, pp 348-360.

Goh, P.C. and Lim, K.P. (2004), "Disclosing intellectual capital in company annual reports: evidence from Malaysia", *Journal of Intellectual Capital*, Vol. 5, No.3, pp 50-100.

Gray, R.H., Kouchy, R. and Lavers, S. (1995), "Constructing a research database of social and environmental reporting by UK companies: a methodological note", *Accounting, Auditing & Accountability Journal*, Vol 8, No.2, pp 78-101

Healy, P., Hutton, A. and Palepu, K. (1999), "Stock performance and intermediation changes
surrounding sustained increases in disclosure", *Contemporary Accounting Research*, Vol. 16 No. 3, pp. 485-520.

Harrison, S., Sullivan, P. (2000), "Profiting from intellectual capital: learning from leading companies", *Journal of Intellectual Capital*, Vol 1, No.1, pp 33-46.

Institute of Chartered Accountants of India, Accounting Standard 38- Intangible Assets,

Krippendroff, K. (1980), "Content Analysis: An introduction to its Methodology", Sage, Beverly Hills, CA

Liang, C.J and Yao, M.L (2005), "The value-relevance of financial and non-financial information: evidence from Taiwan information electronics industry", *Review of Quantitative Finance and Accounting*, Vol 24, No. 2, pp 135-157.

Moore, N.G. (1996), "Measuring corporate IQ", *Chief Executive*, November, pp 36-39.

Ohlson, J.A. (1995), "Earnings, book values and dividends in equity valuation", *Contemporary Accounting Research*, Vol. 11, pp. 661-87.

Petty, R. and Guthrie, J. (2000), "Intellectual capital literature review: measurement, reporting and management", *Journal of Intellectual Capital*, Vol. 4 No. 1, pp. 61-81.\

Roos, J, Roos, G., Dragonetti, N.C and Edvinsson, L. (1997), Intellectual Capital: Navigating in the New Business Landscape, Macmillan, Houndsmills, Basingtoke.

Seetharaman, A., Soora, H.H.B.Z. and Saravanan, A.S. (2002), "Intellectual capital accounting and reporting in the knowledge economy", *Journal of Intellectual Capital*, Vol. 3 No. 2, pp. 128-48.

Skinner, D.J., (1994), "Why firms voluntarily disclose bad news?" *Journal of Accounting Research*, Vol 32, No.1, pp 38-60.

Stewart, T.A. (1997), Intellectual Capital: The New Wealth of Organizations, Currency Doubleday, New York, NY.

Tseng, C.Y and James Goo. Y.J (2005), "Intellectual capital and corporate value in an emerging economy; empirical study of Taiwanese manufacturers", *R&D Management*, Vol 35, No.2, pp 187-201.

Valuation of Intangibles, IPE, *Study sponsored by ICAI*, Accounting Research Foundation, Sept. 2009

Wang Jui-Chi (2008), "Investigating market value and intellectual capital for S&P 500", *Journal of Intellectual Capital*, Vol.9 No. 4, pp 546-563.

Welker, M. (1995), "Disclosure policy, information asymmetry and liquidity in equity markets", *Contemporary Accounting Research*, Vol. 11 No. 3, pp. 801-28.