INTELLECTUAL CAPITAL REPORTING – A LONGITUDINAL STUDY OF MICROSOFT ANNUAL REPORTS 1998-2017

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Abstract*. Many empirical studies concentrate on the intellectual capital reporting practices around the world. Studies confirm the rising importance of intellectual capital disclosure and its key categories by the publicly listed entities in promoting corporate governance and better flow of information for the stakeholders what subsequently improves general stock market transparency. Although there is a plethora of studies of intellectual capital disclosure in terms of: practices, techniques, methods and international comparisons there is a gap among prior studies in respect of longitudinal research. This gap derives partially from the fact that there are not that many publicly listed companies that report extensively over a longer period of time. As a consequence, main motivations of undertaking the research in the proposed paper are: the importance of the topic and the above-mentioned gap in the literature. The aim of the paper is to examine the extent and quality of intellectual capital reporting of one company (Microsoft) over a period of 20 years from 1998 to 2017. In order to enable comparability with previous studies, proposed research was based on the framework initially developed by Guthrie and Petty (2000). Achieved results suggest that IC disclosure during 20 years is rising in terms of extent and quality, what is observed within all of IC categories, however the trend is relatively weak, due to large fluctuations (mostly in the case of relational capital). The most significant growth (despite variations) was observed in terms of relational capital, which appeared also to be the most frequent IC item reported, mostly due to: brands identification and depiction, corporate reputation and proactive customer approach, including their perception by the firm in the context of shaping the future strategy. Structural capital was named as second most often disclosed IC category, mostly due to intellectual properties descriptions. Human capital information contained mostly data on total employment, remuneration and employee stock option plan. In addition, IC reporting was mostly found in factual (verified) form rather than narrative (unverified). The research methods adopted for this study are: content analysis and tools of descriptive statistics. As a source of data annual reports were utilized.*

Keywords*: Intellectual capital disclosure; intellectual capital reporting; publicly listed companies; stock exchange; annual report.*

Introduction

The notion of intellectual capital (IC) is widely recognized and analyzed. Although there have been numerous studies conducted on IC measurement and management, still there are certain doubts in the literature, especially in the field of IC reporting. Theory suggests that that there could be distinguished three incentives for companies to disclose their IC. First, to be better perceived by the labor market and hence more attractive to individuals with higher skills and experience. As a result, companies may gain in the long term competitive advantage because of better human assets employed

(Bukh, Nielsen, Gormsen & Mouritsen, 2005). Second, to help the companies to focus on certain business areas because of reporting it (Stewart, 1997). And third, enterprises that disclose their IC could provide more insight into the firm and thus resolve uncertainty what may lead to the share price increase (Edvinsson, 1997; Lev, 2001).

The aim of the study is to analyze the extent and quality of IC reporting on the sample of one of the largest IT company (Microsoft) within a 20-years period of time. As Habersam, Piber and Skoog (2013) state, developing more insights into IC reporting practices is relevant because, it can show how content and structure of IC disclosure changes over time and organizational routines are being reshaped. Moreover, as argue Guthrie, Ricceri and Dumay (2012) there is still a place for practice-based research on technical and social processes organizations use in practice to construct disclosures. Proposed study is unique in this sense, as most of the research of IC relates to no more than five years, so there is an urgent need to capture the IC reporting practices in business entities over a longer period of time. This approach is not always possible due to numerous reasons (the most important one is lack of publicly available and reliable data). However, the study by Campbell and Rahman (2010) on the sample of Marks & Spencer provides an insight into the IC disclosure of British retail company over 31 years. Proposed study in this paper is based on the assumptions and methodology utilized by Campbell and Rahman (2010). Chiucchi (2013) points out that the findings from case study help understand how enterprises introduce IC accounting processes that internally mobilize IC. In fact, proposed study is a case study research on IC disclosure.
Consequently, the research question being asked is:

RQ: What is the extent and quality of IC disclosure by Microsoft during 1998-2017?

The research methods adopted for this study are: content analysis and tools of descriptive statistics.

The structure of this paper is the following: section 1 is introduction, section 2 provides the literature review on IC and prior research. Section 3 sets out methods used in the study. Section 4 outlines the results and discussion which is followed by section 5 pointing to conclusions and limitations of the study, along with the future lines of research.

Previous studies on IC disclosure

Early IC disclosure research focused primarily on establishing definitions, IC classifications and reporting frameworks (Sveiby, 1997; Bontis, 2003; Goh & Lim 2004). Once established, studies started to concentrate on the extent and quality of IC disclosure (Bontis, 2003; Xiao, 2008; Yi & Davey, 2010; Singh & Kansal, 2011), factors influencing IC reporting (Bozzolan, Favotto & Ricceri, 2003; Pablos, 2003; Wang, Sharma, & Davey, 2016) and effects of IC disclosure (Guimon, 2005; Dumay & Tull, 2007; Gerpott, Thomas & Hoffman, 2008). However, as suggest Cuozzo, Dumay, Palmaccio and Lombardi (2017) research on IC disclosure was maturing up until 2012. Between then and 2017, only two new models have been proposed (Abeysekera, 2013; Bini, Dainelli & Giunta, 2016). One of them deals with integrated reporting (Abeysekera, 2013), which provides a new opportunity to understand the interplay between intellectual capital and physical resources what is often missing in IC studies. Melloni (2015) points that integrated reporting is beginning to receive much traction in IC disclosure research.

In turn, longitudinal studies on IC reporting among firms are relatively rare and do not provide unambiguous conclusions. Research by Bukh et al. (2005), Sujan and Abeysekera (2007), Abeysekera (2008), Kamath (2008), Sonnier, Carson and Phillips (2008), Oliveras, Gowthorpe, Kasperskaya and Perramon (2008), Striukova, Uneman and Guthrie (2008) and De Silva, Stratford and Clark (2014) state that there is a growing trend in IC disclosure among companies, however its magnitude differs according to the study. In turn, Firer and Williams (2005), Singh and Kansal (2011), Mat, Hooper & Olesen, (2012), Dumay (2016) and Sharma and Kaur (2016) found that in fact there is no growth of IC reporting in the longer period of time or there can be even observed a negative trend in the extent and quality of IC reporting over years. Above-mentioned studies have been conducted mostly in developed countries: Denmark (Bukh et al., 2005), USA (Sonnier et al., 2008), Spain (Oliveras et al., 2008), New Zealand (De Silva et al. (2014) and Australia (Sujan & Abeysekera, 2007). Some studies analyzed IC reporting practices in developing nations, such as: Sri Lanka (Abeysekera, 2008) and India (Kamath, 2008; Sharma & Kaur, 2016). Most IC content was disclosed in narrative form, whereas the predominantly reported IC component appeared to be relational capital. However, it should be noted that among these studies there has not been utilized a unified research framework, hence cross-study comparability causes significant obstacles. Moreover, another important shortcoming of them is a relatively short period of analysis (lack of longitudinal observations).

Methodology

Sample selection

Microsoft, a well-known global IT company has been chosen for the study. There are two reasons behind that. First, Microsoft is a company which is intuitively associated with high IC level, hence its reporting practices should be studied. However, to the best author's knowledge, there has not been conducted any analysis of this kind on Microsoft so far. Second, as the aim of the research was a longitudinal study of IC reporting, Microsoft is one of the few enterprises to provide necessary documents covering required period of time.

Utilized source of data

The research compares the annual reports issued by Microsoft between 1998 and 2017. Abeysekera and Guthrie (2005) stated that annual reports are adequate tools to measure and compare IC between enterprises, however, some authors claim that the relevance of annual reports as data source is diminishing and they suggest to uncover new and interesting sources, such as IPOs prospectuses or social media activity (Krippendorff, 2013; Garanina & Dumay, 2017; Pisano, Lepore & Lamboglia, 2017). This approach is understandable, as Dumay (2016) and Schaper, Nielsen and Roslender (2017) found companies often abandon dedicated IC reports and resign from disclosing IC in annual reports. However, as the proposed study is a longitudinal insight into IC reporting practices, annual reports were the only media capable to contain historical data. For this reason, other possible sources of data on IC, such as: CSR or Integrated reports had to be excluded due to not long enough existence. Similarly, IPO documents and others (news, press releases) are created only intermittently. In addition, corporate

websites are not suitable for the nature of longitudinal study. As a result, annual reports were chosen as the most appropriate documents for this study.

Method

Content analysis was adopted as a research method. Content analysis is defined as a technique for gathering data (Abeysekera, 2008). The aim is to codify qualitative and quantitative data into pre-defined categories in order to receive quantitative scales of different levels of complexity (Abeysekera, 2008; Dumay & Cai, 2015). Moreover, content analysis is a desk-bound activity with easy access to data and, because it involves mainly research time, it is cost effective (Ousama, Fatima & Hafiz Majdi, 2011). Moreover, thanks to technology more state-of-the-art research processes can be developed, so more volumes of text can be analyzed, which adds to the reliability and quantitative generalization of findings (Dumay, 2014). However, it should be mentioned that content analysis has some limitations. Dumay and Cai (2014) identified three fundamental problems: the subjectivity of disclosures, their unit of analysis and their weighting/quality. Another major problem is the interdependence on companies (enterprise willingness) to report certain items. Moreover, there also has to be the assumption made that information provided by the companies are reliable. According to Dumay and Guthrie (2017), because of information asymmetry associated with agency theory, managers will normally keep valuable IC information secret unless it benefits them economically. However, despite these arguments, according to Guthrie and Petty (2000), Schneider and Samkin (2008) and Yi and Davey (2010) content analysis is perceived to be empirically valid in social sciences, intellectual capital disclosure and in the reporting fields of accounting research.

A coding spreadsheet was created and information on IC was introduced. Double check of coding was employed to eliminate coding errors.

IC reporting framework

Due to the two reasons: comparability with previous studies and subjectivity of the content analysis, IC reporting framework initially developed by Guthrie and Petty (2000) was adopted in this study, which has been widely recognized and in many studies utilized (April, Bosma, & Deglon, 2003; Goh & Lim, 2004; Steenkamp & Northcott, 2007). Based on the framework, IC is captured in three major categories (structural, relational and human capital) and 17 sub-categories (six sub-categories within structural capital and relational capital and five within human capital). Detailed presentation, including indicators of each of the sub-category has been shown in table 1. Some indicators were adjusted to the specifics of the industry of the studied firm.

Table 1. Categories and definitions of intellectual capital reporting (Source: Campbell and Rahman, 2010)

Categories	Indicators
Structural capital	
Intellectual properties	Patent, Trademark, Copyright, Internet domain name, Design
Corporate culture	Vision, Mission, Code of ethic, Code of conduct, Code of practice, Principles of operation

Categories	Indicators
Management philosophy	Create value to shareholders, Sustain growth, Listen to customer, Protect environment and Caring society
Management and technological process	Control stock, Quality control, Performance appraisal
Information and networking system	Computer network, database, software, network, hardware, intranet, server etc.
Infrastructure	Portfolio of properties, stores modernization and refurbishment, floor extension, machine, plant
Relational capital	
Financial relationships	Relationship with shareholders, bankers and other fund suppliers
Brands	Brand, Sub-brand, Range of product and services name, Market shares, Product awards
Customers	Customers named, Customer loyalty, Customers trust, Customers feedback, Customers services, Customer satisfaction, No. of customers, Customers segment Customers convenience such as better software
Distribution channel	Supply chain, Business network, Development new stores across regions, Delivery system, Marketing and advertising, Carry out market research, Online selling, Web catalogue, Promotion activities/strategies
Business partnering	Franchising, Licensing, Collaboration, Outsourcing, Suppliers, External expert/consultant, Government, Local authorities, Media/press
Corporate reputation	Company name, Sponsorship, Community involvement, Environmental protection measures, Social responsibilities. Any activities that could raise company name
Human capital	
Employees	Employee profile, Employee equity, Equal opportunities, Employee safety, Employee relationship, Employee representation, Employee welfare, Employee recognition, Compensation plan, bonus, better pay, Duties and responsibilities, Employee good attitude, Employee morale
Training	Vocational development, Career development, Induction program, In house training, Recruitment, Employee assistance program, Continuing education for employee, Any state of being trained
Education	Bachelor, Master, PhD, Professional qualification
Work related knowledge	Seniority, Experience, Expertise

Categories	Indicators
Innovation	Development new product, Research and development, New technology, Creative marketing strategy, Add new product line

Unit of analysis

First step of the study was the extent of IC disclosure by category and sub-category. In order to preserve comparability with previous studies, mostly with the study by Campbell and Rahman (2010), this research was based on the analysis of themes including IC information. A theme, according to Holsti (1969), is a single assertion about some subject and the most useful unit of analysis. Themes are not bound by grammatical unit such as word, sentence or paragraph but rather they refer to clusters of words with different meaning or connotation that, taken together, refer to some theme or issue (Weber, 1990). Theme approach not only enables researchers to better capture the IC content, but also eliminates the risk of misclassifying given information.

To better reflect coding practices employed in this study following sentence has been used as an example:

"We invest in a range of emerging technology trends and breakthroughs that we believe offer significant opportunities to deliver value to our customers and growth for the company." (Microsoft annual report 2017, p. 20)

Because of the adopted Guthrie and Petty (2000) framework this sentence was coded as holding two separate IC sub-categories.

"We invest in a range of emerging technology trends and breakthroughs"

was coded as reporting about innovation which is part of human capital, while

"…that we believe offer significant opportunities to deliver value to our customers and growth for the company."

was perceived as a comment about customers' convenience which is a matter of relational capital.

Such coding practices required more effort, however are in line with the previous studies and enable deeper IC disclosure analysis.

IC reporting quality

Second step of the study was the assessment of IC reporting (quality of IC disclosure). Among different approaches utilized in many studies this research, similarly to Campbell and Rahman (2010) adopts two-dimensional IC disclosure quality evaluation, meaning that IC reporting can be classified as: narrative or factual. Narrative description refers to the managerial perception and tends to be expressed in terms of awareness, belief, cognition, estimation or sense-making (Mezias & Starbuck, 2003). Perception disclosures are unverified and possibly unverifiable (Campbell & Rahman, 2010). In turn, factual information is typically expressed as something that has actually happened or something that is expressed in a proven or verifiable manner. Beattie and Thomson

(2007) argued that information is considered as fact if it is verifiable. Consequently, following sentence was coded as perception (narrative).

"It is equally important to evolve our culture - becoming more customer-obsessed across all our products, focusing on leading indicators like usage, and ensuring Microsoft continues to be the best place for smart, curious people to do great work." (Microsoft annual report 2014, p. 3)

At the same time following sentence was coded as factual information.

"During fiscal years 2014, 2013, and 2012, research and development expense was $11.4 billion, $10.4 billion, and $9.8 billion, respectively. These amounts represented 13% of revenue in each of those years." (Microsoft annual report 2014, p. 13)

Results and discussion

Table 2 depicts the results of the study in terms of the extent of the long-term disclosure of IC in annual reports with the categories breakdown. A total of 2637 themes have been captured in 19 annual reports.

Table 2. Intellectual capital reporting themes (Source: own study)

Year	Structural capital	Relational capital	Human capital	Total
1998		58	12	96
1999	28	80	22	130
2000	19	81	18	118
2001*	N/A	N/A	N/A	N/A
2002	28	94	17	139
2003	37	86	15	138
2004	22	94	24	140
2005	27	87	27	141
2006	28	88	28	144
2007	28	97	28	153
2008	28	105	27	160
2009	22	99	28	149
2010	19	73	35	127
2011	25	88	31	144
2012	31	65	28	124
2013	26	69	22	117
2014	26	82	23	131
2015	36	93	22	151
2016	36	107	27	170
2017	43	128	27	198
Total	535	1641	461	2637
Share	20,30%	62,20%	17,50%	

Notes: *Due to technical problems annual report for 2001 was not available on the company website.

The most often reported IC category in all consecutive years was relational capital (1641 identified themes in total), followed by structural capital (535 themes) and human capital (461 themes). During 1998-2017 there was observed a rising trend in IC disclosure. These findings, in terms of growing extent of IC disclosure and relational capital as the predominant category of IC are in line with previous studies by Bukh et al. (2005), Sujan and Abeysekera (2007), Abeysekera (2008), Kamath (2008), Sonnier, Carson, and Phillips (2008), Oliveras et al. (2008), Striukova et al. (2008) and De Silva et al. (2014). However, Campbell and Rahman (2010) observed more rapid IC disclosure increase (106% growth in the case of Microsoft and 675% in the case of Marks & Spencer).

Microsoft relational capital was mostly disclosed in the form of: brands, customers' orientation, corporate reputation and distribution channels. Second most reported IC theme was structural capital, followed by human capital, which appeared to be the least disclosed IC category, which stays in contrary to almost all previous studies, with the only exception of Bozzolan et al. (2003) on the sample of Italian firms. However, latest study referred to single year only. Changes of IC categories during the studied period are presented on figure 1.

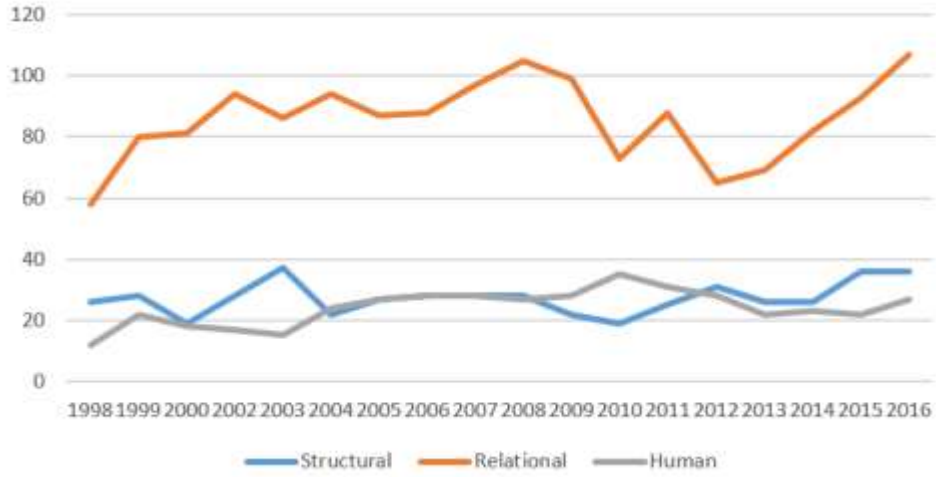

Figure 1. ICR categories trend (own study)

Largest growth was observed in the case of relational capital; however, the trend was not linear. Significant decreases were observed in 2010 and 2012. Similar phenomenon was found in the case of structural capital disclosure (in 2004 and 2010). Human capital reporting longitudinal changes could be described as moderate. Most often reported IC sub-categories with the division into decades was shown in table 3.

Table 3. Top five most frequently reported IC sub-categories (Source: own study)

Rank	Period 1 1998-2007	Period 2 2008-2017
1	Brands (RC)	Brands (RC)
2	Intellectual properties (SC)	Corporate reputation (RC)
3	Customers (RC)	Intellectual properties (SC)
4	Corporate reputation (RC)	Employees (HC)

5	Employees (HC)	Customers (RC)

In general, reported IC sub-categories were mostly part of relational capital. In period 1 (1998-2007) and period 2 (2008-2017) information about brands was the most frequent item disclosed, followed by intellectual properties (period 1) and corporate reputation (period 2). This is understandable, as Microsoft is a technological company with plethora of different products introduced into the market. Similar trend was observed by Campbell and Rahman (2010) for Marks & Spencer but only in their latest analyzed period (2000-2009). What is interesting, within a decade Microsoft stressed the importance of corporate reputation (increase from rank 4 to rank 2), what is related with the observed increasing awareness of the firms to be socially responsible. However, in the case of Microsoft increase of reporting of the themes related to reputation derived from the rising number of litigations, mostly due to patent infringements and antitrust law claims. This explains also high rank of disclosing themes related to intellectual properties, what was not observed in the case of Marks & Spencer. However, similarly to Marks & Spencer, among the top five reported IC sub-categories there was a relatively often disclosed information on employees (number, salaries, stock-option plan and general perception), as part of human capital.

In order to gain insights into the quality of reporting, study in this paper included the assessment of the disclosed information (figure 2).

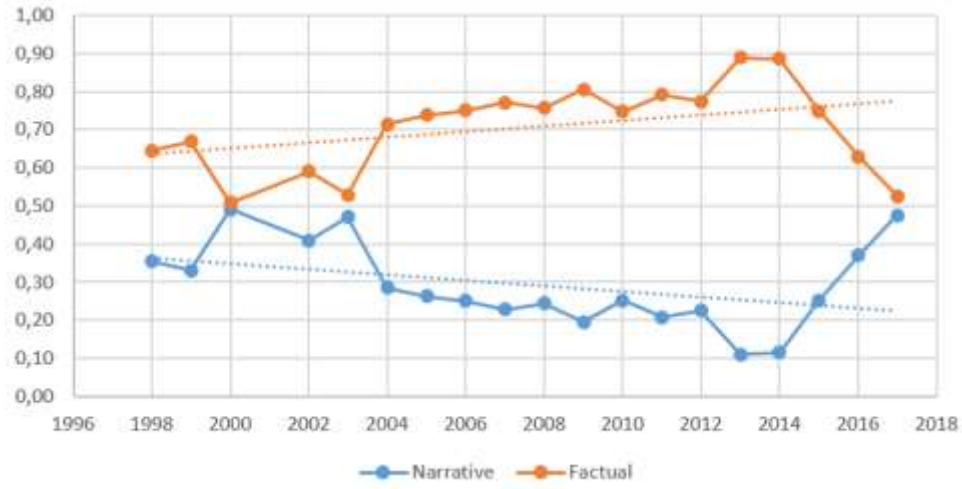

Figure 2. Narrative vs. factual information proportion (own study)

IC was predominantly reported in factual forms, with these making up to 90% (2013 and 2014). Lowest differences were found in the early studied years (1999-2003) with almost equal values found in 2000. This stays clearly in contrary with the results of Campbell and Rahman (2010), who stated almost ideally inverse disclosure (narrative IC disclosure outranked factual one in all studied years). In general, a slightly rising trend of factual information may be identified (strong one was observed during 2004-2014). However, after 2014 rapid decline in factual reporting was found in favor of narrative nature. It should be noted that narrative-driven nature is usually found in the front-end of annual report (letter to shareholders) which is written by the CEO of the

company. Thus, one of the possible explanation of that surprising (against the trend) phenomenon is the fact that in 2014 the CEO of Microsoft has changed, hence the way of addressing main goals and achievements of the company may have transformed just because of the personal shift. Research showed also different distribution of the form of IC sub-categories. Three structural capital sub-categories (corporate culture, management and technological process, information and networking system) and three human capital sub-categories (training, education and work related knowledge) were reported only in a narrative form throughout the entire studied period what means that these IC sub-categories are difficult to verify. Surprisingly, in terms of relational capital, none of its sub-categories was reported only in narrative form. In this sense, relational capital was much better disclosed in terms of reliability with the highest scores observed in terms of: brands, corporate reputation and customers. Substantial conclusion is that Microsoft IC reporting credibility has significant potential to be improved.

Important contribution of the study is also identification of two patterns in Microsoft longitudinal IC reporting. First, the core of information on IC being disclosed in annual reports throughout the studied period was relatively stable and similar. Following themes: corporate mission and vision, customer segmentation, distribution channels, brands recognition, litigations, stock option plans and R&D investments appeared in all documents, and their wording was almost the same. Second, in some annual reports there have been found IC themes appearing occasionally only in the given document. These were: executive officer incentive plan (2009), AAA rating (2009), joint ventures (2011), consumerization of IT (2012) and people orientation (2015). Disclosure of them may have derived either from: implemented actions (2009 – executive officer incentive plan in order to boost employee productivity, 2015 - joint ventures with Nokia and Yahoo,), favorable financial situation against the global financial crisis (2009- AAA rating) or trend recognition (2012 - consumerization of IT).

Conclusions

To the researcher's knowledge, this is the first study that analyzes the extent and quality of IC, IC categories and IC sub-categories reporting practices by Microsoft over long periods of time. Based on the adopted methodology, results suggest that IC disclosure is rising not only as total value, but also within each of IC categories, however the trend is relatively weak, due to large fluctuations (mostly relational capital). Study found that the most significant growth (despite variations) was observed in terms of relational capital, which appeared also to be the most frequent IC item reported, mostly due to: brands description, corporate reputation and proactive customer approach, including their identification importance in shaping the future strategy. Structural capital was identified as second most often disclosed IC category, mostly due to intellectual properties descriptions. Human capital information (least frequent reported) contained mostly data on total employment, remuneration and employee stock option plan. Besides, another contribution of the research is that IC disclosure was mostly found in factual (verified) way rather than in narrative (unverified).

Study provided valuable insight for regulators, practitioners and stock market analysts in terms of corporate reporting practices and through its practice-based evidence, for the future development of IC theory in general. Results have also implications for policy makers and standard setters for rethinking of inclusion of IC disclosure in annual reports as compulsory items. As a result, the quality of information would improve what

will enable various stakeholders to better value the firm. Subsequently, this will contribute to the relevance of the market efficiency hypothesis.

Clearly study has its limitations. A natural extension of this paper would be to explore IC disclosure on the larger sample over a longer period of time. Equally important would be to identify determinants of the extent and quality of disclosure of each IC sub-categories. Employment of other sources of data would provide additional value into the study as well.

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