University of Wollongong
Research Online

University of Wollongong in Dubai - Papers

University of Wollongong in Dubai

2012

Voluntary disclosure of intellectual assets and intellectual liabilities: a literature review

George Majdalany
University of Wollongong in Dubai, gm379@uow.edu.au

Armond Manassian
American University of Beirut

Publication Details

Majdalany, G. & Manassian, A. 2012, 'Voluntary disclosure of intellectual assets and intellectual liabilities: a literature review', in J. Surakka (eds), Proceeding of the 4th European Conference on Intellectual Capital (ECIC), Academic Publishing International Limited, England, pp. 509-517.

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au

Voluntary Disclosure of Intellectual Assets and Intellectual Liabilities: A Literature Review

George Majdalany[1] and Armond Manassian[2]
[1]Department of Business Administration, Faculty of Finance and Accounting, University of Wollongong in Dubai, Dubai, United Arab Emirates
[2]Department of Business Administration, Faculty of Finance and Accounting, American University of Beirut, Beirut, Lebanon
georgemajdalany@yahoo.com
am47@aub.edu.lb

Abstract: The economical shift into knowledge and information management can explain the increased importance of intellectual capital as a research and business topic. Research on intellectual capital has been mainly centred on intellectual assets. Our research is centred on the determinants of the disclosure of Intellectual Assets and Intellectual Liabilities in the United Arab Emirates. Therefore, the objective of this specific paper is to conduct a comprehensive review of the literature of intellectual assets and intellectual liabilities, in order to highlight the gaps in literature which we will deal with in our future research. We seek to review some of the most significant extant literature on intellectual capital disclosure and its development path. The first part of this paper emphasizes important theoretical and empirical contributions relating to the definitions and categorizations of intellectual assets and intellectual liabilities, intellectual capital reporting models, determinants of voluntary intellectual capital disclosure, and legal framework perspective of intellectual capital disclosure vis-à-vis IFRS and US GAAP. It aims to prove that no legal or regulatory framework exists for Intellectual Capital disclosure. The second part of this paper provides an executive summary of the main findings of the reviewed studies on voluntary Intellectual Capital Disclosure, including methodologies and proxies used, variables studies, and main findings. The final part identifies possible future research issues into the nature, impact, and value of intellectual capital reporting. The results and findings of our study indicate that there is a wealth of literature on intellectual capital disclosure, with a focus on intellectual assets. Very few researchers have considered the impact of intellectual liabilities. There are several determinants of intellectual capital disclosure, including: industry, size, age, performance, ownership structure, auditors, culture/nationality, economic conditions, and time. In addition, there is a lack of a regulatory framework for intellectual capital reporting. Regarding the methodology employed, we conduct a comprehensive literature review by investigating leading peer-reviewed, refereed journals in the area of intellectual capital, including, but not limited to: Journal of Intellectual Capital, Journal of Knowledge Management, Journal of Accounting Research, European Accounting Review, and others. We study around 400 journal articles covering the period from 1945 until 2011. However, this study has some limitations, which include the restrictions that some valid studies on intellectual capital disclosure have been conducted, but cannot be accessed due to not being published in peer-reviewed journals. In terms of practical implications, the findings of this study serve as a guide and reference for researchers on intellectual capital disclosure, as it summarizes the findings of the main studies over a period 15 years. This is one of the few studies that provide a recent, comprehensive examination of the intellectual capital disclosure literature, while incorporating both: intellectual assets and intellectual liabilities. Existing literature has overlooked a very major component of intellectual capital disclosure, which is intellectual liability. This calls for an original research that can fill these gaps and extend the existing literature.

Keywords: Literature Review, Intellectual capital, Intellectual liabilities, Disclosure, Annual reports

1. Introduction

There is growing realization in most industries that intellectual capital (IC) is increasingly becoming the underlying factor in value creation and recognition of a business (Canibano et al., 2000). The fact is, business professionals, legal practitioners, the academia, and public sector entities are gradually identifying with this development (Brännström and Giuliani, 2009b). According to Walkotten (2003), he concludes that, "IC has not only suddenly become a major referent in attaching value to a firm in contemporary accounting but also the foremost competitive advantage in mergers and acquisitions."

There is an undeniable increasing demand for more extensive corporate disclosures regarding intellectual capital matters amongst handlers of financial accounting information. In most industries today, intellectual capital information disclosure is featured in the top ten information needs of handlers of financial accounting information (Francis and Schipper, 1999). A more germane concern, however, is the importance of exploring those factors that dictate the manner of disclosure on this subject – and attempting to quantify intellectual capital related information. Thus far, it seems there are limited research studies on the factors that determine voluntary intellectual capital disclosure, as well as how firms' financial position is influenced by those factors (Powell, 2003; Clacher, 2010).

If we accept as true that intellectual assets have become more important than tangible and financial assets, then we should also accept that intellectual liabilities have become more important than tangible and financial liabilities. However, intellectual capital literature hardly addresses the issue of measuring intellectual liabilities (Canibano et al., 2000). Although some studies demonstrate the possibility of the existence of intellectual liabilities in the constitution of intellectual capital (Harvey and Lusch, 1999; Caddy, 2000; Garcia-Parra et al., 2009), the importance still seems to be underestimated.

2. Accounting standards in relation to intellectual capital disclosure

The accounting standards that will be considered in this paper are International Financial Reporting Standard (IFRS) and Generally Accepted Accounting Principles (GAAP) as they are the most widely accepted accounting standards worldwide.

In the field of accounting history, research initiative seems to have been undervalued (Jerman and Manzin, 2008). The profession has concentrated rather on the costs or benefits of “propertizing” intellectual goods (Clacher, 2010). Consequently, wide variances between organizational practice and abstract, theoretical knowledge within the accounting research setting have continued to cause an overwhelming rift within the discipline (Jerman and Manzin, 2008). As a result, historically, there was no universally accepted accounting principle treating the issue of intellectual capital, intangibles and/or their likes.

To address this concern, IFRS 3 targets the international convergence of Intangible Assets Accounting. Similarly, GAAP is the referenced standard framework of guiding principles for financial accounting applied in a given jurisdiction. For purposes of this paper, when referring to GAAP, it is meant to be interpreted as the United States (US) GAAP.

3. Intellectual capital disclosure: legal framework perspective vis-à-vis IFRS and GAAP

Baruch et al. (2005) asserted that there is a decrease in the economic impact of certain key industrial era indicators. In today’s knowledge economy, with global trade shifting to a buyer-focused rather than a seller focused economy, orthodox reporting techniques are unable to provide an accurate picture of a firm’s performance. The buyers’ market is characterized with more informed and more demanding consumers. As such, logic dictates that as the pace of a product’s technological development increases, its life cycle decreases e.g., software market (Baruch et al., 2005).

IFRS and GAAP have been unable to provide harmonized standards for handling differentiation and innovation (that have suddenly become extremely important to firms with regards to value creation), and capabilities and assets (including; creativity, research and development (R&D)), data, brand, copyrights and patents (Seetharaman et al., 2002; Sanchez, et al., 2000; Busacca and Maccarrone, 2007). Each of the capabilities and assets constitute a firm’s intellectual capital and intangible assets; additionally, each component is indispensable for procuring a competitive edge in the knowledge economy (Brundage, 1945; Lev et al., 2005; Brännström and Giuliani, 2009a).

4. Failure of current standards in capturing "abstract" wealth

IAS 38 (revised 2004) provides additional guidance regarding the main criteria for recognizing intangible assets, i.e. on identifiability, controllability, and future economic benefits. The International Accounting Standards Board (IASB) defines an asset as a resource controlled by a firm arising from past transactions from which future economic benefit is expected to accrue to the enterprise. According to (IAS) 38 (1998) the following expenditure will not result in an asset on the balance sheet:

- Advertising and training expenditures, research and development expenditures, and costs incurred in starting up a business;
- Human capital, structural capital and publishing titles, brand names, mast-heads and a host of benefits pertaining to a firm’s customer base such as internally generated customer lists, customer loyalty and customer relationships.

The revised IAS 38 defines an intangible asset as a “non-monetary asset without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.” This includes the following:

- Copyrights, covenants not to compete, franchises, future interests, licenses, operating rights;

- Patents, record masters, secret processes, trademarks and trade names.

The IASB has not really departed from its industrialized paradigm since it continues to set unwarranted criteria for capitalization (Seetharaman et al., 2002). The first stipulation is that an item must meet the definition of intangible assets, where no comprehensive definition exists. Secondly, intellectual capital must be separately identifiable and distinguishable from other assets. In practice this is impossible to adhere to since intellectual capital items tend to be interwoven with each other. A third capitalization requirement is that the company must show its ability to control IC. A final potential obstacle for capitalization is the requirement that a firm demonstrate the existence of a probable chance of return from IC. Nobody knows future returns with certainty. Furthermore, capitalization criteria for physical assets rely on accounting conventions and not on facts.

Chances are the current accounting systems may 'pre-load' the costs of investing in IC and intangibles, choosing to 'defer' the recognition of its benefits. Academics and practitioners voiced concerns about this practice in the late 1980s, raising the argument that if accounting rules would not adjust to the growing need to making relevant information available regarding investments in IC, accounting will be unable to find its relevance (Stolowy and Jeny-Cazavan, 2001; Brännström and Giuliani, 2009a). According to Brännström and Giuliani (2009a), one perceived effect of a potential loss of accounting information's applicability was a greater difference between book value and market value concerning equity in the 1980´s and 1990s. Reports claim that investments in R&D within the United States economy increased by 100 percent between 1953 and 1997, while investment in tangible assets remainied steady during this period (Lev et al., 2005). Despite the noted increase in IC investments as potential foundations for value and profit, under the U.S. GAAP most IC investments must be expensed with immediate effect. Consequentially, this practice decreases book value and current earnings, which corroborates the scholarly and professional claim that 'innovative capital' remains a vital causal variable of the 'market-to-book value effect' (Brännström and Giuliani, 2009a). Accounting practice in the United States not only fails to capture intellectual capital but also fails to treat assets as assets. In 1974, FAS 2 was issued which states that expenses incurred in intangible assets such as research and development, patents and trademarks should be expensed when incurred. This accounting body maintains its old stipulation as stated in FAS 2. However, as per FAS 86, software and development costs are allowed to be capitalized after the product reaches technological feasibility, meaning it can be determined that the product can potentially generate future economic benefit to the organization. A point of weakness still exists in the current pronouncements in that intangible assets that are acquired from third parties are permitted to be capitalized while this is not the case of internally developed intangibles which must still be expensed (Seetharaman et al., 2002).

5. Impact of lack of a worldwide regulatory framework on intellectual capital reporting

There has been no exhaustive universally accepted accounting principle treating the issue of Intellectual Capital and related intangible items. Industry practitioners in concert with academia developed a variety of methods, models and tools for identifying, quantifying, and recognizing intangibles, resulting in confusion within the industry (Jerman and Manzin, 2008; Rimerman, 1990).
In 2004, the IASB issued IFRS 3 Business Combinations. According to the new standard, it is required that all business combinations that started after March 2004 must be accounted for using the purchase method. Furthermore, amortization of goodwill is no longer allowed as industry best practices. However, goodwill must be tested for annual impairment. The IFRS 3 is targeted at international convergence of IC Accounting. Many researchers like Seetharaman et al. (2002) and Clacher (2010), however, have continued to highlight the inadequacies of the current international accounting standards, warning that exclusion of IC from firms' financials does harm a country's overall economy.

6. Voluntary intellectual capital disclosure as a result of global trend

Harmonization issues within firms, industries, and differing years for data publication comprise the major shortcoming of these reports (Atkinson and McGuaghey, 2006). Furthermore, inconsistencies with other forms of voluntary disclosure of IC create additional problems (Lev et al., 2005). As a result, expediency of the information is reduced considerably (Clacher, 2010). In view of this, a major focus of this paper is to answer the continuing call to homogenize voluntary disclosure of Intellectual Capital and related information on intangibles.

7. The need to create uniform intellectual capital reporting standards

A study by Riegler and Hollerschmid (2006) has revealed that it is possible to utilize financial reporting in a methodical way with a distinctive outline to aggregate the identifiable strengths of financial reporting (i.e., the actuality of homogeneous ways of clarification and a well-informed readership) including indicator-based Intellectual Capital Reports. This paper favors the view, however, that the creation of uniform Intellectual Capital reporting standards that will be embraced worldwide is highly possible.

8. Determinants of voluntary intellectual capital disclosure

Many factors play a role in determining a company's level of Intellectual Capital disclosure. These factors include (but are not limited to): industry size; industry/sector type; business performance/profitability; structure of ownership; auditors; company age; culture/nationality; economic condition; political factors; and time. For example, Kamukama et al. (2011) concluded that competitive advantage is a noteworthy mediator for the relationship between Intellectual Capital and financial profitability/performance, improving the connection between the two. However, Bhasin (2011) points out that this relation is not the case for companies listed on the Indian Stock Exchange. Furthermore, contrary to the findings from prior studies and predictions for voluntary Intellectual Capital disclosure (i.e., Bukh et al., 2005; Brown and Hillegeist, 2007; Mangena et al., 2010;Bruggen et al. ,2009) studies reveal that there is no significant connection between the extent of information asymmetry and Intellectual Capital disclosure. Bruggen et al.'s (2009) study also categorically specifies that industries relying on Intellectual Capital voluntarily disclose information about Intellectual Capital more readily. This information is equally important for other stakeholders. As a result, full scrutiny by investors and other stakeholders must include an all-embracing analysis of the content of voluntary Intellectual Capital disclosures in the sectors or industries where disclosure of Intellectual Capital is deemed relevant. More explicitly, because disclosing Intellectual Capital in some industries is a common practice, the extent of disclosure alone should not be the only consideration when examining a business for investment decisions. It is essential to consider the precise content of a company's Intellectual Capital disclosure before making any investment decision related to that firm (Jensen and Meckling, 1976; Jensen, 2001; Garcia-Meca, 2005).

Furthermore, while some results (Hossain et al., 1995; Botosan, 1997; Ahmed and Courtis, 1999; Deopers, 2000; Garcia-Meca and Martinez 2005; Alsaeed, 2006; Bruggen et al., 2009) have supported the findings that size is another crucial determinant for Intellectual Capital disclosure, it may be prudent not to consider company size exclusively when making business decisions as an investor. Considering company size (especially with regard to the small sizes applied by the various studies considered so far) alone may be largely unreliable since some studies have found no considerable correlation between Intellectual Capital disclosure and firm size (Bukh, 2003; Bukh et al., 2005; Hassan, 2009; Bhasin, 2011).

Even though the majority of arguments support the fact that information asymmetry is relevant in voluntary Intellectual Capital disclosure (Andriessen, 2001; Mangena et al., 2010), inconclusive and mixed results are still evident regarding the level of Intellectual Capital disclosure (Brown andHillegeist 2007; Bruggen et al., 2009). With such mixed results, therefore, it follows that more "larger-sample", cross-continental studies are necessary to be able to make conclusive statements regarding each of the factors presently being considered (by researchers and practitioners) as relevant determinants of Intellectual Capital disclosure. Clearly, additional country-specific studies are also necessary to address discretionary voluntary disclosure as well as the limitations of prior studies. For instance to date, very limited research has been conducted in the United Arab Emirates on Intellectual Capital related issues (Aljifri and Hussainey 2007). Gulf News (2010) reports that Dubai Shaikh Mansour Bin Zayed Al Nahyan, the country's Deputy Prime Minister and Minister of Presidential Affairs, reaffirmed the UAE's resolve on economic growth. "The UAE is committed to the development of human capital as a foundation to drive the country's long-term economic viability," according to Shaikh Mansour. He emphasized further that Abu Dhabi is committed to reinforcing its Intellectual Capital and advancing into a knowledge-based economy by way of new and sustainable investment in higher education and research and development (R & D), especially in the field of renewable energy (Gulf News, 2010; Zawya, 2010).

In view of increasing research and expanding literature on the relevance of Intellectual Capital disclosure and its determinants, the following can be deduced:

- Awareness concerning Intellectual Capital indicators has increased in the last decades and is still increasing (Hackston and Milne, 1996; Roos and Roos, 1997; Chapman, 2000; April et al., 2003; Abdolmohammadi, 2005; Vandemaele et al., 2005; Barako et al., 2006).
- Investors and analysts use Intellectual Capital related information for decision making, and companies consider disclosure more relevant for this purpose (Wallman, 1995; Garcia-Meca, 2005; Vergauwen and Van Alem, 2005).
- Despite all research attempts, companies still do voluntary disclosure based on their discretion and efforts. There is need for legal and institutional regulations for the disclosure of intellectual capital because companies still find Intellectual Capital measurement and disclosure very difficult (Bontis, 1998; Guthrie, 2001; Claessen, 2005; Wang, 2008; Arvidsson, 2011; Joshi et al., 2011).
- More studies have found positive correlation of Intellectual Capital disclosure level with firm size (Chow and Wong-Boren, 1987; Hossain et al., 1995; Raffournier, 1995; Botosan, 1997; Ahmed and Courtis, 1999; Deopers, 2000; Beaulieu et al., 2002; Bozzolan et al., 2003; Garcia-Meca and Martinez 2005; Li et al., 2006; Alsaeed, 2006; Barako et al., 2006; Cerbioni and Parbonetti, 2007; Bruggen et al., 2009; Branco et al., 2011), industry type (Brennan, 2001; Williams, 2001; Singh and Van der Zhan, 2007; Bruggen et al., 2009; Muhammad and Ismail, 2009; Ahmed and Hussainey, 2010) and firm performance (Hall, 1993; Sullivan, 1999; Bharadwaj, 2000; Lundholm and Myers, 2002; Bollen et al., 2005; Garcia-Meca and Martinez, 2005; Martın-de-Castro et al., 2006; Longo et al., 2009; Cheng et al., 2010; Mangena et al., 2010; Chu et al., 2011; González-Loureiro and Moreira Teixeira, 2011; Maditinos et al., 2011; Kamukama et al., 2010; Kamukama et al., 2011; Phusavat et al., 2011).

While more extensive research is still required regarding the relevance of firm size, performance and type to Intellectual Capital disclosure, many more studies are needed on the other variables: auditors, culture/nationality, economic condition, time, and corporate responsibility and so on. Consequently, this research is aimed at examining these variables with respect to the business setting in the United Arab Emirates.

9. Intellectual liabilities

Most researchers have ignored intellectual liabilities, perhaps thinking that voluntary disclosure of Intellectual Capital Assets is the same as voluntary disclosure of Intellectual Liabilities. A noteworthy inaccuracy in virtually all the Intellectual Capital related studies seems to be researchers' complete omission of the constructs of intellectual liabilities. The major gap in understanding of Intellectual Capital is the complete misunderstanding of net intellectual worth, which in reality equals intellectual assets minus intellectual liabilities.

The reasons why researchers' attention has not been on the existence of intellectual liabilities in their studies on Intellectual Capital include:

- Absence of regulatory framework for Intellectual Capital disclosure (Abeysekera, 2003)
- Poor understanding, inadequate identification, inefficient management and inconsistent disclosure of the key components of Intellectual Capital (Petty and Guthrie, 2000; Brennan, 2001)

10. What are intellectual liabilities?

Generally, a liability means anything that characterizes a firm's future obligation. Stam (2009) argues that since intellectual assets are understood as the underpinning factor for a company's competitive advantage or strength, it is logical to construe intellectual liabilities as the firm's underpinning factor for competitive disadvantage or weakness. While wealth creation is positively associated with intellectual assets, wealth destruction is positively associated with intellectual liabilities. If the theory of Intellectual Capital must be incorporated properly into the conventional financial accounting principles, a firm must consider its intellectual assets as the non-physical future economic benefits. Using this construct, the firm must consider its intellectual liabilities as those non-physical items that constitute future or potential economic detriments to the firm. An important view regarding the existence of intellectual asset and intellectual liability is proposed by Stam (2009), based on the fact that firms can be valued at more than their net assets and they can also be valued at less than their net assets (Bontis et al., 1999; Abeysekera, 2003).

Even considering the fact that the existence of intellectual liabilities has been noted by many authors (Cuganesan, 2005; Abeysekera, 2006; Stam, 2009), most of the current measurement models of

Intellectual Capital have continued to focus only on the firm's assets, without accounting for the firm's liabilities. A major advantage of intellectual liabilities measurement is that it assists with improving firm performance by actually converting to their advantage those circumstances that have visibly gone out of the firm's control (Abeysekera, 2006; Stam, 2009).

11. Different Treatments of Intellectual Liabilities

For the past fifteen years, many frameworks to identify and measure intellectual capital have been proposed (Andriessen, 2004; Pulic, 2004; Nazari and Herreman, 2007). But, virtually every framework as proposed is ostensibly narrow, merely identifying and measuring intellectual assets. This has created a vacuum regarding identification and measurement of intellectual liabilities, making it difficult to balance intellectual capital measurements. To balance Intellectual Capital reporting, Stam (2009) proposes that it is necessary to redefine the concept of Intellectual Capital itself. Assuming that the equation, IC = IA – IL, as proposed by Harvey and Lusch (1999) and Caddy (2000) is true, Stam (2009) argues the logic of assuming that the same equation will be correct for a variety of Intellectual Capital categories. . Stam (2009) maintains that it will be inaccurate to take the summation of all human assets as a firm's human capital; he recommends human capital should be derived by deducting the summation of all human liabilities from the summation of all human assets. The same concept is applied in determining structural capital and relational capital. These definitions are actually an extension of the framework suggested by Bontis and Fitz-enz (2002). Therefore, Stam's (2009) definition for each Intellectual Capital component is summarized as follows:

HC = HA – HL
SC = SA – SL
RC = RA – RL

Therefore, total Intellectual Capital is defined as:
IC = (HA – HL) + (SA – SL) + (RA – RL).

Where HC is human capital, and HA and HL are Human Assets and Human Liabilities, respectively; SC , SA and SL are Structural Capital, Structural Assets and Structural Liabilities, respectively; and RC, RA and RL are Relational Capital, Relational Assets and Relational Liabilities respectively.

Integrating the above rationale into a meaningful framework for intellectual liabilities measurement, Stam (2009) considers an intellectual liabilities classification that distinguishes between internal and external liabilities. On the other hand, Stam (2009) also considers differentiating between the four components of Intellectual Capital. This classification was originally developed by Harvey and Lusch (1999), and the Intellectual Capital components considered in the classification include process, human, informational and configuration issues.

Garcia-Para et al. (2009) tries to summarize the studies that have already been conducted on intellectual liabilities but their list is very scanty. Out of the 12 studies contained in the list prepared by Garcia-Para et al. (2009), there are only one empirical study and a case study. Most of the studies only mention intellectual liabilities from the perspective of value loss or depreciation without exploring measurement perspectives.

To date, very little research has been done on intellectual liabilities (Stam, 2009). Although a conceptual methodology has been suggested to recognize both intellectual assets and liabilities in the financial reports (Abeysekera, 2003), this effort is still meager (Stam, 2009). This is because the aforementioned methodology uses only the market value as a reference point acknowledging that intellectual asset and liability elements cannot be quantified correctly to identify them individually.

12. Conclusion

In conclusion, the results and findings of our study indicate that there is a wealth of literature on intellectual capital disclosure, with a focus on intellectual assets. There is a lack of a regulatory framework for intellectual capital reporting. There are several determinants of intellectual capital disclosure, including: industry, size, age, performance, ownership structure, auditors, culture/nationality, economic conditions, and time. Very few researchers have considered the impact of intellectual liabilities. What has been done so far is mostly abstract, rather than experiential. However, the need to balance Intellectual Capital books, reporting both intellectual assets and intellectual liabilities has been emphasized. In other words, the urgent need for companies to incorporate intellectual liabilities when identifying and measuring their Intellectual Capital has been underscored by experts. As a consequence, there is pressing need for researchers to embark on further conceptualization of intellectual liabilities into Intellectual Capital models, testing these Intellectual Capital models empirically.

Our study has some limitations, which include the restrictions that some valid studies on intellectual capital disclosure have been conducted, but cannot be accessed due to not being published in peer-reviewed journals. In terms of practical implications, the findings of this study serve as a guide and reference for researchers on intellectual capital disclosure, as it summarizes the findings of the main studies over a period 15 years. This is one of the few studies that provide a recent, comprehensive examination of the intellectual capital disclosure literature, while incorporating both: intellectual assets and intellectual liabilities. Existing literature has overlooked a very major component of intellectual capital disclosure, which is intellectual liability. This calls for an original research that can fill these gaps and extend the existing literature. Our future research should yield a common accepted set of terms to be used to measure intellectual assets and intellectual liabilities disclosure.

References

Abdolmohammadi, Mohammad J. (2005). “Intellectual Capital Disclosure and Market Capitalization”, Journal of Intellectual Capital, Vol 6, No. 3, pp 397-416.

Abeysekera, Indra K. (2003). “Accounting for Intellectual Assets and Intellectual Liabilities”, Journal of Human Resource Costing and Accounting, Vol 7, No. 3, pp 7-14.

Abeysekera, Indra K. (2006). “The project of Intellectual Capital: Researching the Research”, Journal of Intellectual Capital, Vol 7, No. 1, pp 1469-1930.

Ahmed, Kamran., and Courtis, John K. (1999) “Associations between Corporate Characteristics and Disclosure Levels in Annual Reports: A Meta-Analysis”, British Accounting Review, Vol 31, pp 35-61.

Aljifri, Khaled., and Hussainey, Khaled., (2007). “The Determinants of Forward-Looking Information in Annual Reports of UAE Companies”, Managerial Auditing Journal, Vol 22, No. 9, pp 881-894.

Alsaeed, Khalid., (2006) "The Association Between Firm-Specific Characteristics and Disclosure: The Case of Saudi Arabia", Managerial Auditing Journal, Vol 21, No. 5, pp 476-496.

Andriessen, Daniel. (2004). “IC Valuation and Measurement: Classifying the State of the Art”, Journal of Intellectual Capital, Vol 5, No. 2, pp 230-242.

April, Kurt A., Bosma, Paul., and Deglon, Dave A., (2003). “IC Measurement and Reporting: Establishing a Practice in SA Mining”, Journal of Intellectual Capital, Vol 4, No. 2, pp 165-80.

Arvidsson, Susanne. (2011). “Disclosure of Non-financial Information in the Annual Report: A Management-Team Perspective”, Journal of Intellectual Capital, Vol 12, No. 2, pp 277-300.

Atkinson, Keith., and McGuaghey, Ronald. (2006). "Accounting for Data: A Shortcoming for Intangible Assets", Academy for Accounting and Fiancial Studies Journal, Vol 10, No. 2, pp 85-95.

Beaulieu, Philip R., Williams, Mitchell S., and Wright, Michael E. (2002). “Intellectual Capital Disclosures in Swedish Annual Reports”, World Congress on Intellectual Capital Readings.

Bontis, Nick, and Jac Fitz-enz. (2002) “Intellectual Capital ROI - a Causal Map of Human Capital Antecedents and Consequents”, Journal of Intellectual Capital, Vol 3, No. 3, pp 223-247.

Bontis, Nick. (1998). “Intellectual Capital: An Exploratory Study that Develops Measures and Models”, Management Decision, Vol 36, No. 2, pp 63-76.

Botosan, Christine A. (1997). “Disclosure Level and the Cost of Equity Capital”, The Accounting Review, Vol 72, No. 3, pp 323-349.

Bozzolan, Saverio., Favotto, Francesco., and Ricceri, Federica. (2003). “Italian Annual Intellectual Ccapital Disclosure: An Empirical Analysis”, Journal of Intellectual Capital, Vol 4, No. 4, pp 543-558.

Branco, Manuel Castelo., Delgado, Catarina., Sousa, Cristina., and Sa, Manuel. (2011). “Intellectual Capital Disclosure Media in Portugal”, Corporate Communications: An International Journal, Vol 16, No. 1, pp 38-52.

Brännström, Daniel., and Giuliani, Marco. (2009a). "Accounting for intellectual capital: a comparative analysis", VINE: The Journal of Information and Knowledge Management Systems, Vol 39, No. 1, pp 68-79.

Brännström, Daniel., and Giuliani, Marco. (2009b). "Intellectual Capital and IFRS3: A New Disclosure Opportunity", Electronic Journal of Knowledge Management, Vol 7, No. 1, pp 21-30.

Brennan, Niamh., and Connell, Brenda. (2000). “Intellectual Capital: Current Issues and Policy Implications”, Journal of Intellectual Capital (MCB University Press), Vol 1, No. 3, pp 206-240.

Brundage, Percival. (1945). "Accounting for Intangible Assets" Journal of Accountancy (Pre-1986) (ProQuest Central), Vol 79, No. 2, pp 150-151.

Bukh, Per Nikolaj., Nielsen, Christian., Gormsen, Peter., and Mouritsen, Jan. (2005). “Disclosure of Information on Intellectual Capital in Danish IPO Prospectuses”, Accounting, Auditing and Accountability Journal, Vol 18, No. 2, pp 713-732.

Bukh, Per Nikojak. (2003). “The Relevance of Intellectual Capital Disclosure: A Paradox?”, Accounting, Auditing and Accountability Journal, Vol 16, No. 1, pp 49-56.

Busacca, Giuseppe A., and Maccarrone, Paolo. (2007). "IFRSs and Accounting for Intangible Assets: The Telecom Italia Case", JIC, Vol 8, No. 2, pp 306-328.

Caddy, Ian. (2000). “Intellectual Capital: Recognizing both Assets and Liabilities”, Journal of Intellectual Capital (MCB University Press), Vol 1, No. 2, pp 129-146.

Canibano, Leandro., Garcia-Ayuso, Manuel., and Sanchez, Paloma., (2000). “Accounting for Intagibles: A Literature Review”, Journal of Accounting Literature (ProQuest Central), pp 102-130.

Cerbioni, Fabrizio., and Parbonetti, Antonio. (2007). “Exploring the Effects of Corporate Governance on Intellectual Capital Disclosure: An Analysis of European Biotechnology”, European Accounting Review, Vol 16, No. 4, pp 791-826.
Chapman, Judith Ann., and Ferfolja, Tania. (2001). “Fatal Flaws: The Acquisition of Imperfect Mental Models and their Use in Hazardous Situations”, Journal of Intellectual Capital, Vol 2, No. 4, pp 398-409.
Chen, Ming-Chin., Cheng, Shu-Ju., and Hwang, Yuhchang. (2005). “An Empirical Investigation of the Relationship Between Intellectual Capital and Firms’ Market Value and Financial Performance”, Journal of Intellectual Capital, Vol 6, No. 2, pp 159-176.
Chow, W Chee., and Wong-Boren, Adrian. (1987). “Voluntary Financial Disclosure by Mexican Corporations”, The Accounting Review LXII, No. 3, pp 533-541.
Clacher, Iain. (2010). "THEMED PAPER: National Accounting for Intangible Assets in the Knowledge Economy", Journal of Financial Regulation and Compliance, Vol 18, No. 2, pp 106-119.
Cuganesan, Suresh. (2005). "Intellectual Capital-in-Action and Value Creation: A Case Study of Knowledge Transformations in an Innovation Project", Journal of Intellectual Capital, Vol 6, No. 3, pp 357-373.
Deopers, Florence. (2000) “A Cost-Benefit Study of Voluntary Disclosure: Some Empirical Evidence from French Listed Companies”, The European Accounting Review, Vol 9, No. 2, pp 245-263.
Francis, Jennifer., and Schipper, Katherine. (1999) "Have Financial Statements Lost Their Relevance?", Journal of Accounting Research, Vol 37, No. 2, pp 319-352.
Garcia-Meca, Emma. (2005). “Bridging the Gap Between Disclosure and Use of Intellectual Capital Information”, Journal of Intellectual Capital, Vol 6, No. 3, pp 427-440.
Garcia-Parra, Mercedes, Pep Simo, Jose M Sallan, and Juan Mundet. (2009). “Intangible Liabilities: Beyond Models of Intellectual Assets”, Management Decision, Vol 47, No. 5, pp 819-830.
Gulf News. (2010). “First Research Institute for Renewable Energy Opened in UAE”.
Guthrie, James., Petty, Richard., Ferrier, Fran., and Wells, Rob. (1999). “There Is No Accounting for Intellectual Capital in Australia: A Review of Annual Reporting Practices and the Internal Measurement of Intangibles”, OECD Symposium on Measuring and Reporting of Intellectual Capital, Amsterdam, pp 1-134.
Guthrie, James. (2001). “The Management, Measurement and the Reporting of Intellectual Capital”, Journal of Intellectual Capital, Vol 2, No. 1, pp 27-41.
Hackston, David., and Milne, Markus J. (1996). “Some Determinants of Social and Environmental Disclosures in New Zealand Companies”, Accounting, Auditing and Accountability Journal (MCB University Press), Vol 9, No. 1, pp 71-108.
Harvey, Michael G, and Robert F Lusch. (1999). “Balancing the Intellectual Capital Books: Intangible Liabilities”, European Management Journal, Vol 17, No. 1, pp 85–92.
Hassan, Mostafa Kamal. (2009). “UAE Corporations-Specific Characteristics and Level of Risk Disclosure”, Managerial Auditing Journal, Vol 24, No. 7, pp 668-687.
Hossain, M., Perera, M.H.B., and Rahman, A.R. (1995). “Voluntary Disclosure in the Annual Reports of New Zealand Companies”, Joumal of Intemational Financial Management and Accounting (Blackwell Publishers Ltd.), Vol 6, No. 1, pp 69-86.
Jensen, Michael C., and Meckling, William H. (1976). “Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure”, Journal of Financial Economics (North-Holland Publishing Company), Vol 3, pp 305-360.
Jensen, Michael C. (2001). “Value Maximisation, Stakeholder Theory, and the Corporate Objective Function”, European Financial Management, Vol 7, No. 3, pp 297-317.
Jerman, Mateja., and Manzin, Massimo. (2008) "Accounting Treatment of Goodwill in IFRS and US GAAP", pp 218-225.
Joshi, Mahesh., Ubha, Dharminder Singh., and Jasvinder, Sidhu. (2011). “Intellectual Capital Disclosures in India : A Case Study of Information Technology Sector”, SAGE, Vol 12, No. 1, pp 37-49.
Lang, Mark., and Lundholm, Russel. (1993). “Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures”, Journal of Accounting Research, Vol 31, No. 2.
Lev, Baruch., Canibano, Leandro., and Marr, Bernard. (2005) "An Accounting Perspective on Intellectual Capital 3", In Multidisciplinary Insights into Management, Measurement, and Reporting. Ed Marr, Bernard., pp 42-55, Burlington, MA: Elsevier Butterworth-Heinemann.
Li, Jing., Pike, Richard., and Haniffa, Ross. (2006). “Intellectual Capital Disclosures in Corporate Annual Reports: A European Comparison”, Working Paper Series 6, No. 24, pp 1-32.
Petty, Richard., and Guthrie, James. (2000). “Intellectual Capital Literature Review: Measurement, Reporting and Management”, Journal of Intellectual Capital (MCB University Press), Vol 1, No. 2, pp 155-176.
Powell, Steven. (2003). "Accounting for Intangible Assets: Current Requirements, Key Players and Future Directions", European Accounting Review, Vol 12, No. 4, pp 797–811.
Pulic. Ante. (2004). "Intellectual capital—does it Create or destroy Value?", Measuring Business, Excellence, Vol 8, No. 1, pp 62-68.
Raffournier, Bernard. (1995). “The Determinants of Voluntary Financial Disclosure by Swiss Listed Companies”, The European Accounting Review, Vol 4, No. 2, pp 261-280.
Riegler, Christian., and Hollerschmid, Christian. (2006) "Voluntary Disclosure on Project Intangibles from R&D in Business Reporting: A Principles-Based Approach for R&D Intensive Companies", Journal of Intellectual Capital, Vol 7, No. 4, pp 511-528.

Rimerman, Thomas W. (1990) "The Changing Significance of Financial Statements" Financial Statement Users are Turning to Other Information Sources to Meet their Needs. How Should the Profession Respond?, pp 79-83.

Sanchez, Paloma., Chaminade, Cristina., and Olea, Marta. (2000) "Management of Intangibles: An Attempt to Build a Theory", JIC, Vol 1, No. 4, pp 312-327.

Seetharaman, A., BZ Sooria, Hadi Helmi., and Saravanan, A.S. (2002) "Intellectual capital accounting and reporting in knowledge economy", JIC, Vol 3, No. 2, pp 128-148.

Stam, Christiaan D. (2009). “Intellectual Liabilities - Lessons from The Decline and Fall of the Roman Empire”, The journal of Information and Knowledge Management Systems, Vol 39, No. 1, pp 92-104.

Stolowy, Herve., and Jeny-Cazavan, Anne. (2001) "International Accounting Disharmony: The Case of Intagibles", Accounting, Auditing & Accountability Journal, Vol 14, No. 4, pp 477-496.

Vergauwen, Philip G.M.C., and Van Alem, Frits J.C. (2005). “Annual Report IC Disclosures in The Netherlands, France and Germany”, Journal of Intellectual Capital, Vol 6, No. 1, pp 89-104.

Walkotten, Wayne A. (2003) "Accounting for Intangible Assets: Changes in Accounting Rules Affect Agency Acquisitions", Rough Notes (ProQuest Contral), pp 128-132.

Wang, Mu Shun. (2011). “Intellectual Capital and Firm Performance”, Annual Conference on Innovations in Business and Management, London: The Center for Innovations in Business and Management Practice, pp 1-26.

Williams, S Mitchell. (2001). “Is Intellectual Capital Performance and Disclosure Practices Related?”, Journal of Intellectual Capital, Vol 2, No. 3, pp 192-203.

Zawya. (2011). “Inauguration of Masdar Institute Campus At Masdar City Underscores Abu Dhabi's Commitment To Build A Knowledge-Based Economy”, Press Release, Abu Dhabi, pp 1-5.