

# INTELLECTUAL CAPITAL : TOWARD THE DEVELOPMENT OF CONCEPTUAL FRAMEWORK FOR ITS STANDARDIZED REPORTING

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## **Abstact**

*In recent year there is an increasing awareness of the significance of IC toward increasing the competitive advantage of companies. The subjective nature of IC leads to the diversity in definitions and different way of classifications as developed by researchers in the previous literatures. We are generally in agreement with Choong (2008) who classified IC systematically into four classes, which are human capital, structural capital, customer capital, and intellectual property capital.*

**Keywords :** Intellectual Capital, Toward the Development of Conceptual Framework, Its Standardized Reporting

## **Introduction**

Currently, the practitioners and researchers unanimously agreed that intellectual capital is significantly important to be quantified, measured and disclosed by an enterprise for the sake of sustaining its competitiveness. Specifically, for that reason, the measurement and reporting of intellectual capital has been attracting the enterprises to value and manage their “human” assets. Companies acknowledge more that employees are of their most valuable assets. However, in the absence of well developed framework to measure and disclose those new assets, none of them were somewhere in their report. This fact is supported by previous findings that “new” intangibles such as staff competencies, customer relationships, models and computer and administrative systems receive no recognition in the traditional financial and management reporting model (Guthrie, 2001).

Many studies have been carried out in search for the appropriate framework that best measure, disclose, and report the intellectual capital in company’s record. This paper specifically reviewed four (4) studies (Choong,

2008; Marr *et al.*, 2003; Shaikh, 2004; Sonnier *et al.*, 2007) to assess the development of academic study regarding the intellectual capital in term of its definition, categorization, measurement, valuation, and reporting issues related to it.

### **Significance of The Study**

These four selected articles highlight different issues relating to intellectual capital. The first article is an exploratory paper written by Marr *et al.* (2003) which reviewed several studies in IC field to investigate the theoretical underpinnings of why do firms measure their IC. Second article written by Shaikh (2004) attracts our attention as he highlighted several internal and external measures of intellectual capital. The third one, written by Sonnier *et al.* (2007) provides an empirical evidence regarding the influence of IC disclosure level to the firm's performance by extracting 150 high technology companies as the samples. The fourth article written by Choong (2008) demonstrate that the field is maturing to one in which it is possible to develop a conceptual framework that can be used to formalize a reporting model for intellectual capital. Collectively, the sequence of the above listed articles represents the order of the structure of our discussion in this paper.

Accordingly, the reminder of this paper devoted to a discussion of generally accepted definition of intellectual capital and its classification. The next section consists of two interesting issues which highlighted the rationales of why the company measures its intellectual capital and the models used to measure and value it. This section is followed by the discussion of its disclosure and reporting. The final section provides the summary highlighting our own comments relating to the issues as well as the area for the future research.

## Definition and Classification of Intellectual Capital

### A. Definition of Intellectual Capital

The definition of Intellectual Capital (IC) has long been discussed in the accounting literatures due to its fundamental nature, (for a review see Choong, 2008). As a result, there are wide array of definitions being produced to represent the IC. Despite an apparent diversity of definitions, the recurring themes can be identified<sup>1</sup>. The widely accepted definition highlighted in previous research defined that the intellectual capital is a non-monetary asset without physical appearance, but it posses value that can be used to generate future benefits to an enterprise which hold it.

### B. Categorization of Intellectual Capital

Generally, the definition of IC concept is not the only concern in the current research literatures, but the examination of rational justification for its IC classification is also considered as a particular interest in IC fields. The latest study conducted by Choong (2008) is the pioneer study initiating the effort to improve and refine the IC classification by performing a formal method of IC reclassification. The reclassification came out with four (4) main classes of IC which is human capital, structural capital, customer capital and intellectual capital property (Appendix 1: table V of the study, pp 629). The author excluded supplier and investor in the proposed IC model as he

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<sup>1</sup> For example : “non-monetary asset without physical substance” (IASB,2004b, p.2); “IC deploy its knowledge resources toward creating values in pursuit of its future vision”(Rastogi,2003,p.230); “Intangible assets are noncurrent, .....that lacks a physical or financial term” (FASB NN,2001, p.6); “an intangible asset is a claim of future benefit that does not have a physical of financial ( a stock or a bond) embodiment” (Lev, 2001, p.5); “IC is valuable, yet invisible” (Heisig *et al.*,2001, p.60); “IC is intellectual material .....that can be put to use to create wealth” (Steward,1998, p.XI); “Intangible assets are those that have no physical existence but are still of value to the company” (Edvinsson and Malone, 1997, p.22); “ intangible assets .....of the primary contributors to the earning power of the enterprise” (Smith,1994); “ intangible assets are invisible assets that include a wide range .....” (Itami,1991).

regarded those as part of current account (short term) and part of shareholders' equity respectively. Both of which are components of tangible asset and not eligible to be included as part of IC component.

## **Intellectual Capital: Measurement and Valuation**

### **A. The Aims of Measuring Intellectual Capital**

The increasing interest in accounting for intangibles leads the companies to measure their intellectual capital. According to Marr *et. al.* (2003), the purposes of why companies measure their intellectual capital can be concluded as follow:

1. *Assisting the organizations to formulate their strategy;*

Measuring IC can be used to plan and formulate the business. Companies should realize that formulating a strategy is not enough to just identify the competitive forces, opportunities, and threats of the companies; in addition organizations should recognize their corporate competence and resources in order to evaluate opportunities. For that reason, companies need to deliberately identify and develop their intellectual capital in order to achieve a competitive benefit and to improve their performance.

2. *Helping the strategy assessment and execution;*

The other purpose of measuring intellectual capital is to develop key performance indicators to help the companies to evaluate the execution of strategy. In fact, many researches reveal that some empirical evidence prove how IC drives performance of the companies.

3. *Assisting in expansion decisions;*

Without correct assessment, measurement and valuation of intellectual capital, the companies may overvalue or undervalue it, as a result causing value destruction for the acquiring company's

shareholders and other stakeholders. These failures have perhaps contributed to long run value destruction in corporate acquisitions. Logically, acquiring company's shareholders might fail to notice potential acquisition targets because they do not understand the value of intellectual capital as the potential assets company might owns.

4. *A basis for compensation*

Johnson and Kaplan, (1987) and Kaplan and Norton (1992), as quoted by Marr *et. al.* (2003) stated that most organizations have realized that relying purely on financial measurement can encourage short-term thinking especially if those financial measures are linked to compensation systems. The main reasons suggested for the use of intellectual capital performance measures in compensation systems are that these measures are considered as better indicators of future business performance than accounting measures, and they are helpful in providing information for the evaluation and motivation of managerial performance.

5. *Communicating measures to external stakeholders.*

Companies are required to communicate measures to external stakeholders. The problem is no generally accepted accounting principles that have been agreed upon this matter. The growing need of intellectual capital reporting stimulates and pushes the companies to account for and disclose the value of their intellectual capital. If it is not well reported, the shareholders and investors might be disadvantaged, as they do not have access information on intangibles since there are various empirical studies showing the impact of intangible assets on financial performance and stock price. When the stock market values companies at three, four, or ten times the book value of their assets, it is telling the simple but profound truth that the hard

assets of a company contribute far less to the value of its ultimate product (or services) than the intangible assets (Stewart, 1997, p. 55).

### **Internal and External Measurement**

Measurement approaches are primarily about how the company internally measure and report performance in order to reach management insight that can help it to run the business. Bontis (2001) stated that internal measurement is undertaken for management, which needs to know as much as possible about the company, so that it can monitor its progress and take corrective action when needed. Referring to Shaikh (2004), the most common internal measures of intellectual capital focus on budgeting, training, and human resources. Those are mentioned as follow:

1. *Human resource accounting (HRA)*

The aim of human resource accounting is not only to describe the financial aspect of capitalizing expenditure on recruitment, training, and development, but also to quantify the economic value of people to companies. HRA is expected to improve the management of human resources from an organizational perspective.

2. *The intangible assets monitor*

Intangible assets monitor (IAM) was designed to track and value company's intangible assets, particularly for the difference between market price and book value. The IAM is based on the assumption that people are an organization's profit generators (Shaikh, 2004). Sveiby, as stated by Bontis (2001), proposed a conceptual framework on three families of intangible assets: external structure (brands, customer, and supplier relations); internal structure (the organization, management, legal structure, manual system, attitudes, R&D, and software); and individual competence (education and experience). He believed that the

problem with using measures of these assets is not because of the difficulty to measure, but the outcomes are difficult to interpret.

### 3. *The Skandia navigator*

Skandia Navigator is the pioneering form to manage value and communicate intellectual resources. It incorporates measures in categories similar to those of the balanced scorecard (Shaikh, 2004). It reflects four key dimensions of its business: financial focus, customer focus, process focus, and renewal and development focus (Mouritsen and Larsen, 2001).

### 4. *The balanced scorecard*

The balanced scorecard, developed by Kaplan and Norton, is a framework that links the perspectives of an organization's four basic stakeholder groups - financial (investors), learning and growth (employees), internal business processes, and customers - with the organization's mission and vision, performance measures. Strategic plan, and resources (Needles and Crosson, 2002, p. 342). It can be used as a management tool to manage, measure, and communicate both financial and non-financial performance.

Valuation approaches concern with placing on economic value on firms and their intangibles. In general, the approaches take an external view and are designed to help the investors or analysts assess the value of the companies. Reviewing Shaikh's article (2004), there are four external measures to value the intellectual capital.

#### 1. *Market-To-Book Values*

The value of intellectual capital is commonly measured by calculating the difference between market value and book value of the company. However, the weakness of this approach is that the intellectual capital is not separately calculated.

2. *Tobin's Q*

The "Q" is the ratio developed by economist James Tobin. It compares the market value of an asset with its replacement cost (Stewart, 1997, p. 225). It was not developed as a tool to measure intellectual capital, but it is considered as a good one. Further, it could be argued that Tobin's q is more accurate than market-to-book method because it uses replacement rather than historical cost. It is possible to figure Tobin's Q for individual assets.

3. *Calculated Intangible Value (CIV)*

According to Stewart (1997), knowing CIV could help the company to judge whether a low price-to-book ratio reflects a fading business, or one that is rich with hidden value that is not yet reflected in the stock. Furthermore, Shaikh (2004) stated that CIV has several limitations. It depends on the averages of intangible assets to determine value and it means that it lacks the precision provided by balance sheet numbers.

4. *Real Options-Based Approach*

Real options-based approach is a recent approach using the methodology and theory of financial options to value intangible asset (Shaikh, 2004). A financial option is the right, but not the obligation, to purchase or sell certain assets at a fixed price at a fixed price for a predetermined period of time. Real option is the option that is based on non-financial assets. This option can be implemented to determine the value to proceed, defer, expand, or dispose the investment.



## INTELLECTUAL CAPITAL: DISCLOSURES AND REPORTING

### Disclosures of Intellectual Capital

Sonnier *et al.* (2007) used one hundred fifty (150) high-technology companies as a sample to determine if management's disclosure level of intangible assets was influenced by firm performance. The research supported a statistically significant inverse relationship between the level of intellectual capital disclosure and Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) for both the fiscal years 2000 ( $r = -.1849$ ,  $p < .05$ ) and 2004 ( $r = -.1515$ ,  $p < .05$ ), and Net Income for the 2000 ( $r = -.2307$ ,  $p < .01$ ) but not 2004 ( $r = -.0941$ , ns) (Appendix 2: Table 3 of the article).

Many start-up firms in the high-technology sector experience low to negative earnings, due in part to the treatment of intellectual capital as an expense by the traditional accounting model. This study suggested management may choose to increase the level of their intellectual capital disclosure in an effort to explain the low performance metrics or to compensate for the failure of the traditional accounting model to capitalize costs associated with the development of intellectual capital resources. As the firm grows, management may want to reduce the level of disclosure to conceal sensitive strategic information in order to maintain a competitive advantage.

Conversely, Williams (2001) predicted that a positive relationship exists between a firm's level of performance and its level of intellectual capital disclosure. Based on the results of his study, he reasoned that once a firm reaches a certain level of performance that it may reduce its level of disclosure to conceal from competitors

strategically significant information in an effort to maintain its competitive advantage. In addition, the performance measure used by Williams (2001) was the Value Added Intellectual Coefficient developed by previous study in Pulic, 1998. This measure has received limited attention from researchers and is not used in the traditional accounting model. The authors sought to use measures familiar to management and investors for firms traded publicly in the United States. Therefore, they choose Net Income and EBITDA as the performance metrics.

### **Voluntary Disclosures**

Voluntary disclosure of intellectual capital imposes challenges for firms operating in knowledge-intensive industries or environments. If an organization does not disclose intangible assets, there are several negative consequences. For example, stock price volatility may result from the difficulty of investors to accurately estimate future payoffs and the risk associated with the investment in intangible-intensive companies (Garcia-Ayuso, 2003)<sup>2</sup>. Another consequence may be an increase in the cost of capital and higher interest rates. Finally, the disparity of information between outside investors and insiders due to the failure of financial statements to account for intangible assets may increase the risk of excessive insider trading gains resulting in a loss of investor confidence. In an effort to mitigate these effects, firms may find it desirable to disclose information regarding their intangible assets or intellectual capital.

On the other hand, a number of researchers raised the issues that can discourage the voluntary disclosure of information. They claimed that the companies will instinctively resist the disclosure of information regarding to

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<sup>2</sup> Sonnier (2007)

their intellectual capital for confidentiality purpose and protection of the strategic importance of such data. This fact was supported by William (2001) who concluded that once a firm reaches a high level of performance it may reduce its level of voluntary disclosure to protect its competitive advantage.

### **Reporting of Intellectual Capital**

The importance and usefulness of developing such framework has put a new pressures to the researchers, academician or even practitioners in multidisciplinary knowledge to contribute a precise definition of IC concept. While other researchers vigorously focus to test and validate the existing theories in the IC field, Choong (2008) preferred to conduct a review of literatures in an attempt to develop a conceptual framework. The development of such framework are essential and most welcomed in the IC field as up to this date, most publications still lack of theoretical foundation and practical usefulness to formalise a reporting model for intellectual capital (IC).

The author examines the characteristics of items that can be considered as IC in order to provide a formal classification system of IC that can be instilled in a reporting system which can be used generally in any organization that improved the use of IC. The proposed model to report on intellectual capital (IC) in the study is primarily based on prior literature. The formalization of IC in this study consists of two systems; 1) a classification system; and 2) a value chain reporting system that is needed to be used in the initiation, development, implementation, and commercialization of a firm's product and services (Appendix 3).

The completed IC reporting system (Choong (2008), (See Appendix 3: Figure 2, pp 632) consists of four (4) classifications ; namely human capital, structural capital, customer capital and intellectual property capital. The sub class under each of main classifications are bonded together in the

productive process of the firm through value chain system. The value chain enables the firm to systematically monitor the performance and investment opportunities of the firm's entire value creation system to maximize the profit value added and shareholders' value.

## **INTELLECTUAL CAPITAL: ISSUES AND COMMENTS**

### **Impact on Company Performance.**

The above empirical study<sup>3</sup> evidenced that there is an inverse relationship between the disclosure level of intellectual capital and firm's performance. It seems that the management may use a disclosure strategy as a management tool to convince external parties of the underlying value of the firm. In the event of lower performance, the management may choose to increase the level of their intellectual capital disclosure in an effort to compensate the failure of the traditional accounting model to capitalize costs associated with the development of intellectual capital resources. On the other hand, management may decide to constrain its transparency in order to protect certain important information. As in the case of growing firm, the management might want to reduce the level of disclosure to conceal sensitive strategic information in order to maintain a competitive advantage.

The issue of voluntary disclosures is also problematic since the company relies on their own judgment regarding the items to be disclosed in the report. In our opinion, the regulatory body should develop a specific guidance for company to disclose only the important and relevant information regarding to the company's intellectual assets. If everything is in the company's decision, it might cause some other issues and difficulties in

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<sup>3</sup> Sonnier (2007)

terms of external users of accounting reports basically regarding to its transparency.

### **Conceptual Framework of Reporting**

It is almost unanimous among the researchers and practitioners that intellectual capital need an adequate well developed conceptual framework. Such a framework is needed to prescribe the perspective, the aim, the users and the consequences of an accounting system by the introduction intellectual capital. Once these specifications are known, one may work out the framework in more explicit rules and regulations.

### **CONCLUSION**

In recent year there is an increasing awareness of the significance of IC toward increasing the competitive advantage of companies. The subjective nature of IC leads to the diversity in definitions and different way of classifications as developed by researchers in the previous literatures. We are generally in agreement with Choong (2008) who classified IC systematically into four classes, which are human capital, structural capital, customer capital, and intellectual property capital.

Reporting intellectual capital is considered relevant to today's business environment; however, its disclosure becomes a problem and complex issue for management. The traditional accounting standards and practices are insufficient to account for intellectual capital. To date, there is no generally accepted accounting standard regarding to the IC measurement. Consequently, management decide to use a narrative disclosure in their formal report.

The future research should consider examining the appropriate composition of numeral and narrative disclosures of IC. Besides that, the upcoming studies are supposed to test the determinant factors to identify the

companies which are most affected by IC. To our opinion, the performance of research based company and academic institutions are directly correlated to their IC level.

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### Appendix 1

(Table 3. Correlation of Earnings Metrics and Level of Intellectual Capital Disclosure)

Variable	Fiscal Year 2000	Fiscal Year 2004
Net Income	Pearson's $r = -.2307$ $p = .003$ (1 tail) 95% confidence interval: $-.330$ to $-.126$ $n = 143$	Pearson's $r = -.0941$ $p = .132$ (1 tail) 95% confidence interval: $-.200$ to $.0139$ $n = 143$
EBITDA	Pearson's $r = -.1849$ $p = .014$ (1 tail) 95% confidence interval $-.287$ to $-.079$ $n = 143$	Pearson's $r = -.1515$ $p = .035$ (1 tail) 95% confidence interval $-.255$ to $-.044$ $n = 143$

## Appendix 2

