Intellectual Capital Reporting: Comparison of various frameworks

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MGSMWP 2004-24
October 2004
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ISSN  1445-3029   Printed copy
      1445-3037   Online copy

MGSM WP 2004-24

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Abstract
Increasingly, researchers in the field of Intellectual capital (IC) need to be able to justify the use of the normative frameworks that are used to understand, management and report IC. There are various frameworks available to researchers seeking to understand Intellectual Capital Reporting (ICR). The aim of this paper is to review the use of several IC frameworks in understanding ICR and to offer some observations on how we might be able to provide a combined ICR.

Meer-Kooistra and Zijlstra (2001, p. 474) have highlighted an important suggestion for future research: – “the researchers should concentrate on the similarities between the various ideas so that this can bring about a generally accepted definition of IC and of its components, and can lead to a broad reporting framework”.

We examine several popular IC frameworks in Section 3, namely those of Brooking (1996), Edvinsson and Malone (1997), Roos et al. (1997), and Sveiby (1997b).

In conclusion, this paper finds that IC frameworks remain focused on the economic consideration; however, enhances the financial information provided under the traditional financial reporting framework with other non-financial and narrative information on value creating activities. As a result, IC frameworks still inherit some of the traditional financial reporting framework’s limitations, that is IC frameworks still focus on presenting economic performance. However, the greater attention towards sustainable development has underlined and given rise to the re-emergence of the criticism that has long been put forward: - that the traditional financial reporting framework only gives an incomplete account of business activities indicate that economic activity is producing an increasing number of environmental and social problems; and these consequences are not reported under the traditional financial reporting framework.

Keywords
Intellectual Capital; Annual Reports;
1. Introduction

The recent string of accounting scandals (i.e., Ansett, Enron, HIH, One.Tel, Worldcom) has drawn greater attention worldwide to limitations of the traditional financial reporting framework in providing information even for financial information users (See, Barsky et al., 2003; Boyle, 2003, p. 8; Buffini, 2003, pp. 1, 3; Byrnes and Der Hovanesian, 2002, p. 34; Byrnes and Henry, 2001, p. 51; Byrnes et al., 2002; Collins, 2003, p. 28; Fairlamb, Matlack & Ihlwan, 2001; McNamee, 2001, p. 34; Reed et al., 2002; Sykes, 2003a, p. 14; 2003b, p. 18; Weber, 2003, pp. 68-69). It has been widely criticised that many new strategic intangible resources that are increasingly important in the rise of knowledge-based economy are not accounted for in traditional balance sheet and financial statements (see, Cordon, 1998; Edvinsson and Malone, 1997, p.1; Guthrie, 2001, pp. 29-30; DISR, 2001, p. 11; Leadbeater, 1999, p. 17; Norreklit, 2000). Furthermore, the greater attention towards sustainable development has underlined and given rise to the re-emergence of the criticism that has long been put forward: - that the traditional financial reporting framework only gives an incomplete account of business activities (e.g., Estes 1976; Gray et al., 1993; Gray et al., 1996; Mathews, 1997). Gray et al. (1996, p. 2) indicate that economic activity is producing an increasing number of environmental and social problems; and these consequences are not reported under the traditional financial reporting framework.

The traditional financial accounting and reporting framework has also been criticised as being sacrificing relevance for reliability and objectivity (Johnson & Kaplan 1987). Prior research has shown that accounting information has lost its relevance significantly in the last few decades (Canibano, Covarsi & Sanchez 1999). There was a significant increase in the market-to-book ratio of US firms from a level of 0.81 in 1973 to a level of 1.69 in 1992 (Lev & Zarowin 1998). The widening gap between market value and book value reflects that the traditional financial reporting framework presents an incomplete account of firms’ value. Brennan and Connell (2000, p. 206) indicated that many of the differences can be explained by IC that are not recognised under the traditional financial reporting framework. Hope and Hope (1998) state that 50-90 percent of the value created
by a firm is estimated to come from the management of intellectual capital, rather than from the management of traditional physical assets.

2. Alternative to traditional financial reporting

As an alternative to traditional financial reporting is the literature associated with other performance reporting frameworks, including intellectual capital (IC) and Balanced Scorecard (BSC). Prior studies suggest that there are still plenty of research opportunities in searching for a better classification of IC Grojer (2001). Roslender and Fincham (2001) discuss and conclude that the traditional financial reporting framework is not likely to be capable of accommodating IC. Intellectual capital reporting is an alternative to traditional financial reporting. Although there are a plethora of methods for measuring and reporting IC, it seems that a generally accepted reporting framework for IC is nowhere near. Some prior studies criticise IC frameworks as being imperfect (e.g. Grojer, 2001) and suggested that there are still plenty of research opportunities in searching for a better classification of IC.

Roslender and Fincham (2001) review various frameworks and criticise that the emphasis is placed on the management of IC. They argues the case for adopting a critical perspective on accounting for IC and encourage the development of self-management approach that all organisational members are able to offer their “self-accounts” of their workplace experiences, particularly those relating to the crucial process of IC formation and reproduction. Also the content should be of interest to various stakeholders, since it will communicate how the companies is performing from the perspective of those who contribute to that performance.

Also some prior studies call for more focus on the needs of financial report users and suggested tentative desirable information in order to improve business reporting. FASB (2001) indicates that the kind of information investors or financial report users require is the information which enable them to see the firm through management lens. Some of the desirable information that business reporting should include is more forward-looking
information, critical success factors, the information that management uses to manage business (FASB, 2001), and information on “execution of corporate strategy”, “management credibility”, and “quality of corporate strategy” (Mavrinac and Seisfeld, 1998). In sum, these studies indicate the need to examine what information management use in decision-making, understanding value added processes, and accountability of managers.

It can be observed that these suggestions mostly emphasis information that management used in their decision-making in delivering superior financial performance. However, Roslender and Fincham (2001) have already highlighted information content should be of interests to stakeholders. The use of term “stakeholder” suggests the need to consider information needs of those who affect or can be affect by companies other than shareholders.

Avenues for further develop IC frameworks can also be gained from a comparison of prior studies. While some prior studies (i.e., Bukh et al., 2001; Caddy et al., 2001; Carroll and Tansey, 2000; and Mouritsen et al., 2001a) focused on examining and reporting strategies the companies adopted to manage the three IC categories, other prior studies (i.e., Meer-Kooistra and Zijlstra, 2001) explored IC categories based on, but not limited to, the common IC categories among various IC frameworks. This suggests that future research for further development of IC frameworks can be pursued either in terms of more empirics of how the popular IC frameworks can be used as frameworks for managing and reporting of IC or how IC frameworks can be improved to be more comprehensive. However, it should be noted that it is not an aim to develop a comprehensive list of potential indicators but rather a more comprehensive list of possible broad categories of reporting frameworks. Also findings of some prior studies indicate that attempting to develop a comprehensive list of potential indicators under each IC category may not be so useful because different companies use different strategies and end up reporting different indicators. In the IC literature, it is recognised that the IC cannot be fully exhaustive (Edvinsson & Malone 1997). Sveiby (1997b, p. 150) also
stated that the measurement system that presents a full and comprehensive list of a company’s intangible assets does not exist.

The need to a broad, generally accepted reporting framework has been called for. The studies that examined the output reports of companies or organisations, for instance, Mouritsen et al. (2001b) explained how Skandia, a company that is a spearhead in reporting IC, report their IC, other studies found that the level of IC reporting was low. Guthrie and Petty (2000, p. 248) indicate that the low level of IC reporting among their sample Australian companies may be attributable to: (1) the lack of an established, and generally accepted, framework for reporting; (2) that companies do not have, or are not aware of, mechanisms for assessing the change in their IC stocks; and (3) some companies may view the development of IC as being an internal management issue and therefore outside the scope of the annual report (also see, Guthrie et al., 1999). This suggests that in order to see companies disclosing more on their IC, it is important to establish generally accepted reporting framework and present a strong case for reporting IC to the public.

Meer-Kooistra and Zijlstra (2001, p. 474) have suggested that future research should concentrate on the similarities between the various ideas to bring about a generally accepted definition of IC and of its components, which can lead to a broad reporting framework and that company and industry specific may necessitate company to have its own specific content of IC report and specific IC (sub)components. Therefore, in the next section, various IC frameworks will be described and reviewed in order to evaluate and identify some of the limitations that still remain in those frameworks.

3. Review of various IC frameworks

Various IC frameworks have been developed. This section selects and reviews the following frameworks, those of Brooking (1996), Edvinsson and Malone (1997), Roos et al. (1997), and Sveiby (1997b). The various selected IC frameworks are reviewed below.
**Brooking’s (1996) IC classification**

Brooking (1996) considers an enterprise to comprise tangible assets and intellectual capital. Intellectual capital is defined as the combined intangible assets which enable the company to function. The intellectual capital is made of market assets, intellectual property assets, human-centred assets, and infrastructure assets.

![Figure 1. The components of intellectual capital](image)

**Source:** Brooking (1996, p. 13)

Market assets are those derived from a company’s beneficial relationship with its market and customers (Brooking, 1996, p. 19). They include various brands, customers and their loyalty which lead to repeat business and sometimes to the existence of backlog, good distribution channels, favourable contracts, and various agreements such as licensing, franchises and so on (Brooking, 1996). Human-centred assets comprise the collective expertise, creative and problem solving capability, leadership, entrepreneurial and managerial skills embodied by the employees of the organisation. Various aspects of human-centred assets include education, vocational qualification, work related knowledge, occupational assessments, psychometrics, work related competencies (Brooking, 1996).

Intellectual property assets include patent, copyright, design rights, trade secrets, know-how, trade marks, service marks (Brooking, 1996). Infrastructure assets are technologies, methodologies and processes which enable the organisation to function, which include management philosophy, corporate culture, information technology systems, databases of
information on the market or customers, methodologies for assessing risks, methods of managing a sales forces, financial structure, networking systems, communication systems such as email, teleconferencing, and the ability to use the internet to sell goods, and financial relations (Brooking, 1996).

*Edvinsson and Malone’s (1997) the Skandia Value Scheme*

As shown in Figure 2 below, in the Skandia Value Scheme IC is the difference between market value and financial capital.

Figure 2  Skandia Value Scheme

![Skandia Value Scheme Diagram]

*Source:* Edvinsson and Malone (1997, p. 52)

The Skandia Value Scheme (SVS) divides IC into human capital and structural capital. Human capital refers to the combined knowledge, skill, innovativeness, ability of employees, company’s value, culture, and philosophy (Edvinnson and Malone, 1997, p. 11). Structural capital is defined as “everything left at the office when the employees go home” such as the hardware, software, databases, organisation structure, patents,
trademarks, and everything else of organisational capability that supports those employees’ productivity (Edvinsson and Malone, 1997, p. 11).

Structural capital comprises customer capital and organisational capital. Customer capital includes customer satisfaction, longevity, price sensitivity, financial well-being of long-term customers (Edvinsson and Malone, 1997, p. 37). Organisational capital is the codified competence of the organisation and the systems for leveraging that capability (Edvinsson and Malone, 1997, p. 35), which is further divided into innovation capital and process capital. Innovation capital refers to the renewal capability and the results of innovation such as protected commercial rights, intellectual property, and other intangible assets and talents used to create and launch new products and services (Edvinsson and Malone, 1997, p. 36). Process capital is work processes, techniques (such as ISO 9000), and employee programs that enhance the efficiency of manufacturing or the delivery of services (Edvinsson and Malone, 1997, p. 36).

Roos’ et al. (1997) IC distinction tree
Roos’ et al. (1997) IC categories are built on the Skandia Value Scheme (Roos et al., 1997, p. 30). Total value of the company and its component are depicted in the IC distinction tree shown in Figure 3 below. They indicate that total value of the company comprises financial capital and intellectual capital. They consider the value of financial capital to equal the replacement value of the company’s physical and monetary assets so that the assessment of financial capital becomes less dependent on accounting rules. Intellectual capital includes all the invisible processes and assets of the company. They divide intellectual capital into human capital and structural capital to reflect the distinction between “thinking” and “non-thinking” intellectual capital. The components of human capital and structural capital are depicted in the IC distinction tree below.
Human capital is further divided into competence, attitude, and intellectual agility. Competence can be knowledge and practical skills. Attitude captures the willingness of employees to use their skills and abilities to benefit the company (Roos et al., 1997, p. 37) and can be influenced by motivation, behaviour, and conduct. Intellectual agility refers to the ability to use the knowledge and skills in different contexts and increase it through learning (Roos et al., 1997, p. 39).

Structural capital comprises three main components: relationships, renewal and development, and organisation. Relationships include not only relationship with customers, but also suppliers, alliance partners, shareholders, and other stakeholders. Roos et al. (1997, p. 45) highlighted the importance of building relationships with various stakeholders, which can be the most difficult form of relations to build up because their interests are often conflicted. They indicated that stakeholder actions can have great
consequences on the company’s operations. Renewal and development includes intangible side of anything that can improve financial capital and IC or all the items that have been built or created and that will have an impact on future value, but have not manifested that impact yet (Roos et al., 1997, p. 51). For example, new product development, re-engineering and restructuring efforts, development of new training programmes, and research and development that have not get to realisation of value. Organisation comprises three different aspects: infrastructure, processes, and culture. Infrastructure includes all the intellectual property assets of the company (patents, trademarks, brands, special designs and processes whose ownership is granted to the company by laws, mailing lists, customer databases, and process manuals) (Roos et al., 1997, p. 48). Processes refer any activity inside the company that contributes to the creation of organisation capital (Roos et al., 1997, p. 49). Culture refers to a series of rites, symbols, and norms that define the organisation as much as headquarters, logos, and products.

**Sveiby’s (1997) Intangible Asset Monitor**

Sveiby (1997b) illustrates that high proportions of intangible assets to market value can be generally observed in various industries and argues that there must be something among the company’s assets that will yield higher than that will yield higher than bank interest in the future. These assets are intangible, which are not accounted for (Sveiby, 1997b, p. 8). Hence, market value of the company’s equity is considered to be composed of book value of the equity and these intangible assets, which is shown in the Intangible Asset Monitor in Figure 4 below. Sveiby (1997b) considers people as the only true agents in the businesses, whose actions create all assets and structures - both tangible and intangible ones.

The invisible, intangible assets consist of internal structure, external structure, and employee competence. Internal structure includes patents, concepts, models, computer and administrative systems, and corporate culture (Sveiby, 1997b). External structure includes relationships with customers and suppliers and encompasses brand names, trademarks and the company’s reputation and image (Sveiby, 1997b). Employee
competence refers to the capacity to act in a wide variety of situations to create both tangible and intangible assets (Sveiby, 1997b).

Figure 4. Intangible Asset Monitor

As indicated above, there are various IC frameworks that have been developed and there is no generally accepted framework, the next section compares these various IC frameworks and draws out common features and components of them. This is to allow for a discussions of characteristics and limitations of IC frameworks in general.

4. Comparisons of various IC frameworks

The comparisons of various IC frameworks in this section highlight the limitations of various IC classifications. Table 1 (below) summarises and compares various IC frameworks described above. Commonalities among various IC frameworks are also drawn out and presented in the last column.
Table 1. Comparisons of four IC frameworks - classifications and contents

<table>
<thead>
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<tbody>
<tr>
<td><strong>Market assets</strong></td>
<td>Structural capital - Customer capital</td>
<td>Structural capital - Relationships</td>
<td>External structure</td>
<td>External/ customer capital</td>
</tr>
<tr>
<td>Brands, customers and their loyalty and good distribution channels, favourable contracts, and various agreements such as licensing and franchises agreements.</td>
<td>Customer satisfaction, longevity, price sensitivity, financial well-being of long-term customers</td>
<td>Relationships with customers, suppliers, alliance partners, shareholders, and other stakeholders</td>
<td>Relationships with customers and suppliers and encompasses brand names, trademarks and the company’s reputation and image</td>
<td>Various IC frameworks concentrate on relationships between the company and its customers. However, Roos <em>et al.</em> (1997) extend relationships to cover relationship with various stakeholders.</td>
</tr>
<tr>
<td><strong>Infrastructure assets</strong></td>
<td>Structural capital - organisational capital - Process capital</td>
<td>Structural capital - Organisation</td>
<td>Internal structure</td>
<td>Internal/ infrastructure capital</td>
</tr>
<tr>
<td>Technologies, methodologies and processes which enable the organisation to function, which include management philosophy, corporate culture,</td>
<td>Work processes, techniques (such as ISO 9000), and employee programs that augment and enhance the efficiency of manufacturing or the delivery of</td>
<td>All intellectual property assets, any activity inside the company that contributes to the creation of organisation capital and organisational culture</td>
<td>Patents, concepts, models, computer and administrative systems, and corporate culture</td>
<td>Various IC frameworks similarly classify internal work processes as one source of company value. Mainly this category captures work processes, information</td>
</tr>
<tr>
<td>Intellectual property</td>
<td>Structural capital – organisational capital - Innovation capital</td>
<td>Structural capital -Renewal and development</td>
<td>Most authors incorporate intellectual property assets into the internal/infrastructure capital. Roos <em>et al.</em> (1997) differentiate between those that are being developed and those that were developed.</td>
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<td>-----------------------</td>
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<tr>
<td>Patent, copyright, design rights, trade secrets, know-how, trade marks, service marks</td>
<td>The renewal capability and the results of innovation such as protected commercial rights, intellectual property, and other</td>
<td>All the items that have been built or created and that will have an impact on future value, but have not manifested that impact yet such as</td>
<td></td>
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<tr>
<td>information technology systems, databases of information on the market or customers, methodologies for assessing risk, methods of managing a sales forces, financial structure, networking systems, communication systems such as email, teleconferencing, and the ability to use the internet to sell goods, and financial relations</td>
<td>services</td>
<td>technologies system, corporate culture, management philosophy.</td>
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**Human-centred assets**

<table>
<thead>
<tr>
<th>Education, vocational qualification, work related knowledge, occupational assessments, psychometrics, work related competencies</th>
<th>Human capital</th>
<th>Human capital</th>
<th>Employee Competence</th>
<th>Human capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>The combined knowledge, skill, innovativeness, ability of employees, company’s value, culture, and philosophy</td>
<td>Competence, attitude, and intellectual agility</td>
<td>Various authors commonly classify employee’s knowledge and skills of employees into this category.</td>
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Some observations should be made with respect to common characteristics and limitations of the IC frameworks, which will be considered in the future development of IC frameworks. The observations made from the comparisons are as follows:

First, from Table 1, it can be observed that most IC frameworks classify into external/customer capital, internal/infrastructure capital, and human capital although branches or sub-categories of the three common IC categories may be slightly different among different frameworks.

Second, the presentations of IC categories in each framework in the previous Sections highlight on important assumption among frameworks – intellectual capital is the difference between market value and value of tangible assets, financial capital, or shareholder’s value. Defining IC as the difference between market value and book value has widely attracted criticisms in the IC literature. One is that value of IC can be impacted by daily fluctuation of market value and choice of accounting policy (Bukh,
Larsen & Mouritsen 2001, p. 90). In addition, market value may not be available if the company is not listed on the stock market (BCD 2001). Prior research has criticised the definition of IC as the difference between market value and book value as rendering IC to be affected by the imperfection of capital market (Meer-Kooistra & Zijlstra 2001, p. 465) and accounting rules (Bukh, Larsen & Mouritsen 2001, p. 90).

Third, most IC frameworks identify various IC categories or where is the sources of company economic value. They focus on various aspects of IC management (Meer-Kooistra & Zijlstra 2001, p. 460). It is observed that IC frameworks supplement the traditional financial reporting framework to provide a more complete view of business value and sources of competitive advantage, but they still do not address how other impacts that may result from business activities can be reported.

Lastly, IC frameworks have been criticised as being not fully exhaustive and exclusive and need to be further developed (Grojer 2001, p. 708). Similarly, Roslender and Fincham (2001, p. 392) indicate that the different measures of IC identified in the literature appear rather unimaginative in their content, and encourage a different approach to further develop IC frameworks, the self-account approach from all organisational members, while noting that the content should be of interest to various stakeholders and communicate how the enterprise is performing from the perspective of those who contribute to that performance. These criticisms suggest that attempts to further develop IC frameworks need not to be restricted to conventional ways of developing IC frameworks.

Similar to most of all frameworks in existence, IC frameworks, while have some strengths in providing additional information of strategic intangible resources, possesses limitations. IC frameworks remain focused on the economic consideration; however, enhances the financial information provided under the traditional financial reporting framework with other non-financial and narrative information on value creating activities. As a result, IC frameworks still inherit with some of the traditional financial reporting framework’s limitations, IC frameworks still focus on presenting economic
performance, and have some limitations as discussed above, which provide opportunities for further developments. It is argued that a reporting framework should not be restricted to illuminating how a company can create company economic value.

6. Conclusions

It has been widely criticised that many new strategic intangible resources that are increasingly important in the rise of knowledge-based economy are not accounted for in traditional balance sheet and financial statements. Furthermore, the movement towards sustainable development has underlined and given rise to the re-emergence of the criticism that has long been put forward: - that the traditional financial reporting framework only gives an incomplete account of business activities indicate that economic activity is producing an increasing number of environmental and social problems; and these consequences are not reported under the traditional financial reporting framework.

In the IC literature, it is recognised that the IC cannot be fully exhaustive (Edvinsson and Malone, 1997). Sveiby (1997, p. 150) also stated that the measurement system that presents a full and comprehensive list of a company’s intangible assets does not exist. As Grojer (2001, p. 710) noted, a classification of intangibles is under constant change.

In summary, from the review of the IC literature, it is observed that the focus of the IC research is on how to manage internal strategic resources that create value to firms and how to measure and report these resources to shareholders. The IC frameworks that have been developed in the IC literature also reflect this focus. That is, IC frameworks remain focused on the economic consideration; however, enhances the financial information provided under the traditional financial reporting framework with other non-financial and narrative information on value creating activities. As a result, IC frameworks still inherit with some of the traditional financial reporting framework’s limitations – IC frameworks still focus on presenting economic performance – and have some limitations as discussed above, which provide opportunities for further developments.
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