INTELLECTUAL CAPITAL: MEASUREMENT, RECOGNITION AND REPORTING

by

SINDISWA MOOLMAN

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SUPERVISOR: PROF. C J CRONJE`

JOINT SUPERVISOR: PROF. H C WINGARD

PRETORIA

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4. My family for their support and tolerance

DECLARATION

I, Sindiswa Moolman declare that INTELLECTUAL CAPITAL: MEASUREMENT, RECOGNITION AND REPORTING is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

ABSTRACT

The main purpose of this study is to examine the need to modify the theory of accounting to ensure a standardised and comparable approach when accounting and reporting on intellectual capital.

A literature review is used to describe intellectual capital categories and how to measure, recognise and report these assets in the financial statements on an entity. Financial reporting operates around strict requirements that are statement of financial position biased posing significant challenges in recognising and disclosing intellectual capital. The study also uses content analysis of corporate annual reports of the top 40 companies listed on the JSE Ltd in 2009 to determine the extent of intellectual capital reporting by these companies.

Measuring and recognising intellectual capital in financial reporting is not limited by the requirements in respect of statutory disclosures, discretionary and contextual disclosures are recommended. Results of the content analysis show that companies use these discretionary and contextual disclosures to communicate information on intellectual capital.

Key words

Corporate annual reports, contextual disclosures, discretionary disclosures, financial reporting, IASB, intellectual capital, measurement, recognition.

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CHAPTER 1

INTRODUCTION

1.1 Background information

In the late 1990s and early 2000s the business environment experienced a dramatic increase in the number of companies holding intangible assets. The major part of the value of these companies was to be found in their intangible assets with relatively little value being associated with their tangible assets (Sullivan & Sullivan, 2000: 328). Ordóñez de Pablo (2004: 636) classifies these intangible assets into three categories, namely, human capital, structural capital and relational or customer capital. Other researchers group these assets into human capital and structural capital only with some researchers adding intellectual capital as a separate category. Intellectual capital comprises mainly knowledge, brands, competitive advantage, patents, customer relationships, human capital, research and development, and trademarks (Roslender, 2000:35). This research will explore the three classifications of intangible assets and intellectual capital as described by Ordóñez de Pablos and other researchers.

According to Seetharaman, Sooria and Saravanan (2002: 128)The economy has moved from an industrial to a knowledge economy with the result that basic economic resources no longer comprise natural resources, capital and labour but knowledge. Consequently, the shift has been from people working with their hands to people working with their brains. In a knowledge economy the drivers of the competitive advantage and value creation are knowledge resources such as human capital, processes, external brands and networks. The modern economy is characterised by limited capital and increased labour cost as a result of the proliferation of labour laws and increase in labour disputes. Accordingly, the traditional factors of production have lost significance in the value creation process and the success of organisations

depends more on the ability of these organisations to exploit and manage their intangible resources than on their tangible assets (Seetharaman *et al*, 2002: 128). Despite the move from an industrial to a knowledge economy, financial reporting has not changed sufficiently to keep pace with the change in the business value creation processes and the most significant changes that have yet to take place in the finance context involve management and the reporting on the intellectual capital of an organisation.

1.1.1 Knowledge economy and financial reporting

As intangibles such as knowledge and innovation have become an increasingly important part of corporate value this has exacerbated the problem of how to report on and disclose the value of these assets in any statement of the financial position of organisations, and also how to explain any profits arising from these assets (Holland, 2006: 281). Companies that use knowledge and innovation assets for value creation generally show a high return on assets. The reason for this phenomenon is the fact that some of these assets do not qualify for disclosure in a statement of financial position whilst they still contribute to the operating profits reflected on the statement of comprehensive income. When compared with the industry average, a company with a higher return on assets ratio is assumed to have excess intellectual capital over its industry (Rodov & Leliaert, 2002: 328). Accordingly, the change in the factors of production or value creation assets from less physical assets to more intangible assets necessitates a change in accounting theory, for example in the accounting framework and information disclosure in the annual financial statements.

At present the emphasis in annual financial reporting is still more on the book values of the assets of an entity and less on the market value of the entire organisation. The market value of a company is based on the overall value of the company, and not on the values of the individual assets the company owns. In most cases, the book value of the assets of a company differs from the market value as a result of the fact that the market value includes assets not included in the book values and other market related factors. However, the difference between the two values should not be construed as

being equal to the value of any intellectual capital, although it does explain the existence and importance of intellectual capital with an organisation (Rodov & Leliaert, 2002: 324). In view of the fact that the difference between the two values remains unrecorded, the present financial accounting framework fails to address this state of affairs. This difference is recognised and recorded only as goodwill when a company is acquired by another in a business combination.

The International Accounting Standards Board (IASB, 2010) (A106-107) describes goodwill as the excess of

(a) the aggregate of:

- the consideration transferred measured in accordance with IFRS 3 (Business Combinations) which generally requires acquisition-date fair value,
- the amount of any non-controlling interest in the acquiree measured in accordance with IFR3, and
- in a business combination achieved in stages the acquisition date fair value of the acquirer's previously held equity interest in the acquiree

(b) and the net of the acquisition date amounts of the identifiable assets acquired and the liabilities assumed measured in accordance with IFRS 3.

The standard (IASB, 2010: A114) also defines the goodwill acquired in a business combination as "an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised".

In addition, the IASB (2010: A845) states that the difference between the market value of an entity and the carrying amounts of its identifiable net assets may capture a range of factors that affect the value of the entity. A company that has generated goodwill in the form of an internally generated intangible asset is not allowed to recognise this fact in its financial statements as this asset would not meet the recognition criteria of an asset. Hence, it has become necessary to find a way of reporting this value to both the

users of information and the capital providers. This issue will be further explained in chapter 3 of this study.

In trying to resolve disparity between the book value and the market value of the business it is important to identify those mechanisms by which value is created and transformed. It is, therefore, extremely important to identify what creates value, how this value is created and how to report this information to capital providers and other users of this information. In the modern economy the value creation process is presented as an effect of the connections between physical assets and intellectual capital, and the way in which both these resources are composed and bundled. As a result of the fact that companies now tend to hold more intellectual capital compared to physical assets, the process of value creation contributes more to the market value of the business. Mouritsen and Larson (2001: 403) describe this approach to business valuation as an intellectual capital approach. The value in terms of financial accounting is determined by a transaction between two parties or the fact that an item is identifiable. Accordingly, the value creation process and the existence of intellectual capital in a company are not recorded in its financial reports. This non-disclosure of these assets has prompted both accounting debate and studies by researchers on the subject. Some of these debates are discussed in chapter 3 of this study.

1.1.2 A growing need to report the existence of intellectual capital

The increasing importance of intellectual capital and the growing number of companies that rely on these assets in order to create value have created a need to inform the market, the investors and the other stakeholders of the existence of intellectual capital (OECD, 2006:5). Both the accounting and reporting of intellectual capital are, thus, important if the stakeholders of a company are to be allowed the opportunity to make informed investment and other decisions. Seetharaman *et al* (2002:132) note that it would definitely not be in a company's interests to ignore the existence of intellectual capital and not to make a concerted effort to measure and manage this asset. Capital providers might make investment decisions based on the information recorded in the annual financial statements of a company and this may result in incorrect decisions

that may harm the company if the information recorded in the annual financial statements does not accurately reflect the financial position of the company, especially in the case of companies holding more intellectual capital than physical assets. The valuation and measurement of intellectual capital will be covered in chapter 4 of this study.

This study will focus on the intellectual capital (intangible assets) other than that recognised in the annual financial statements in accordance with the IASB's International Financial Reporting Standards (IFRS). The IASB (2010:A839) recognises only those intangible assets that meet the definition of an intangible asset with intangible assets that do not meet this definition not being recognised in the books of a company. The following important questions will be posed: What exactly are these assets made up of, and how should they be accounted for in financial reporting?

Research conducted by Marr and Moustaghfir (2005) suggests that the study of, and the debate on, intellectual capital has been going on since the 1960s. Debate on investment in human capital gained prominence in the 1990s (Marr & Moustaghfir, 2005: 1120). Such debates on intellectual capital seek to obtain answers to the following questions:

- Should intellectual capital other than that recognised in accordance with IAS 38 be recognised in the financial statements of a company?
- What should be the recognition criteria be for this intellectual capital?
- At what date should intellectual capital be recognised in the financial statements?
- How may future economic benefits that will flow from this intellectual capital be determined?
- How should the "control over future economic benefits" test be applied on such assets?
- How should companies report on these assets in order either to bridge or to reduce the gap between market value and book value?
- How should intellectual capital together with other assets in the financial statements be reported on? (Roslender & Fincham, 2004: 179).

Strict conditions and the recognition requirements imposed by both the current financial accounting framework and International Accounting Standards (e.g. IASB, 2010) have meant that most of these questions have remained unanswered. It is understandable that the recognition criteria of assets are aimed at meeting certain objectives in order to safeguard public interest and to ensure that due care, objectivity, consistency, verifiability and comparability are maintained. In addition, the financial accounting framework objectives are aimed at reducing both subjectivity and the manipulation of financial information by management, as well as promoting the fair presentation of all financial transactions (IASB, 2010: B1719). However, there is a growing need to report on those assets that do not meet the accounting standards recognition criteria so as to inform the investors or capital providers and other stakeholders of their existence and their value in the business concerned.

It is clear that companies that hold intellectual capital derive economic benefits from these assets while these economic benefits are, in turn, absorbed in their statements of comprehensive income. This is evidenced by the fact that the value of a company using the earnings yield valuation method is, in most cases, higher than the book value of the company. Furthermore, part of the return on investment reported in the performance analysis of such a company will be derived from assets that are not recorded in the company's statement of its financial position. However, a measure of intellectual capital is not necessarily the difference between the book value and the market value of the company (Steward, 2001: 4). Accordingly, it has become necessary to conduct a critical analysis of the value of intellectual capital as well as of the challenges in respect of the accounting for these assets. It has also become important to identify some established accounting principles so as to incorporate intellectual capital in financial reporting.

A company invests in intellectual capital and other strategic resources in order to gain a competitive advantage over its competitors. Ordóñez de Pablos (2004: 629) has identified the following steps which are often taken by the management of a company in order to secure a competitive advantage:

- Identify strategically relevant resources.
- Select those resources that are important for future markets needs.
- Measure these intangible resources.
- Implement programmes that will allow for the development, extension, protection, storage and renewal of these assets.

It is, therefore, of the utmost importance that a company should identify, own and exploit such strategic resources as intellectual capital in order to be able to develop a strategy that will confer a competitive advantage on the company.

Despite the growing importance of reporting on intellectual capital the present financial accounting framework has remained focused on tangible and certain intangible assets, but excluding the most important intangible assets. Furthermore, the increasing emphasis which is being placed on growth and competitiveness presents challenges in respect of both the financial reporting requirements and corporate governance (OECD, 2006: 5–7). The only intangible assets recognised in financial statements are those which are allowed in terms of the IASB. The IASB (2010: A838) requires that, for an intangible asset to be recognised in the annual financial statements of a company, the asset must be both identifiable and measurable. The reasoning behind the non-recognition of some of the intellectual capital such as human capital, competitive advantage and internally generated goodwill is that these assets do not meet the recognition and measurement criteria in respect of their classification as intangible assets (IASB, 2010: A839–A840). The IASB applies very strict requirements if an item is to be recognised as an asset in the financial statements. These requirements are necessary in order to ensure that it is possible to compare the financial information of different companies and to prevent management's manipulation of this information.

The recognition and measurement criteria of an asset recognised in the annual financial statements of a company are determined by either a specific transaction or a series of identifiable and verifiable transactions (OECD, 2006:7). Examples of such transactions include a purchase, exchange, production process, or a contractual agreement. Holmen (2005: 4) maintains that the occurrence of either a specific

transaction or a series of transactions allows the recognition of an asset to be verifiable. As part of an asset's being verifiable the asset must also be reliably measurable. However, most intellectual capital items are difficult to measure reliably, and are not always easily verifiable. These limitations on the nature of intellectual capital pose a challenge to financial reporting. The Framework for the Preparation of Financial Statements (IASB, 2010: B1719) states that, for information to be reliable, the information must faithfully represent the transactions and/or other events it either purports to represent or could reasonably be expected to represent. This condition makes it difficult to recognise assets such as internally generated brands, customer lists, publishing titles, and other items similar in substance as such assets are not easily measurable and verifiable. However, the expenditure incurred in generating these assets is expensed immediately as it is not possible to distinguish such expenditure from the cost of developing the business as a whole.

The Framework (IASB, 2010: B1719) further states that the reason for non-recognition of these assets is the fact that that there exists a degree of risk that the information about these assets will be a less than faithful representation of what the information purports to represent. This is as a result of inherent difficulties in either identifying the transactions and/or other events to be measured, or in devising and applying measurement and presentation techniques capable of conveying a message that is in line with those transactions and/or events. However, the Framework does allow the use of reasonable estimates to determine the amount to be disclosed. In this case measurement and presentation may be done through the use of reasonable estimates without undermining the reliability of the information. Nevertheless, when a reasonable estimate is not possible then the item concerned will not be recognised in the statement of financial position (IASB, 2010: B1729). As a result, a significant portion of a company's assets may not be reported in the financial statements of that company.

The non-recognition of such assets as intellectual capital in the financial statements may result in a huge difference between the value of the company as perceived by the investors and the book value of the company as reported in the financial statements. Unfortunately, this disparity may create the impression that financial reporting does not

provide an accurate picture of a company's operating assets. In addition, investors are not able to rely solely on the financial statements in order to make investment decisions. It is the market value that drives an investor's decision in respect of whether or not to invest in a specific company.

The growing tendency to link executive remuneration to share price means that the accounting profession is under pressure to report on the true value of a business in the financial statements (Roslender & Fincham, 2004: 178). Despite the fact that the value of the intellectual capital of a company is not necessarily equal to the difference between the market value and the book value of the company, the value of these non-tangible assets is included in the market value of the business and, therefore, their value contributes to the gap between the market value of the business and its book value (Steward, 2001: 4). With the rise of the knowledge-based economy, intellectual capital has the potential to explain the differences that exist between these two values (Sujan & Abeysekera, 2007: 71). Several researchers have developed models that may be used to measure the value of intellectual capital. One of the models developed was based on the Balanced Score Card model (Liang & Yao, 2005: 137). This model divides the market value into financial capital and intellectual capital in order to enable the identification and measurement of the components of intellectual capital. The Balanced Score Card model will be discussed in detail in chapter 4.

Chapter 1 will discuss the problem statement, the hypothesis of the study, the reason for the study, the objectives of the study, the research design and methodology, and the structure of the study. It will also contain a list of the terminology and abbreviations used in the study.

1.2 Research problem statement

Should the theory of accounting be modified for a standardised and comparable approach when accounting and reporting on intellectual capital in corporate annual reports?

1.3 Hypothesis of the study

The hypothesis of this study is that the theory of accounting should be modified to ensure a standardised and comparable approach when accounting for and reporting on intellectual capital in corporate annual reports.

1.4 Reason for the study

The accounting in respect of intellectual capital is an extremely important topic given the growth in the number of companies holding an increasing number of these assets. Rodov and Leliaert (2002: 324) maintain that a company's book value is a reflection of its historical asset costs while its market value is a reflection of both its future earnings and growth potential.

Brennan (2001: 431) conducted a content analysis of the corporate annual reports of eleven knowledge based companies listed on the Irish stock exchange in order to compare the market and book values of these companies. The results of this study suggested that, in nine of these companies, the intangible assets represented a significant part of their value. It is, thus, essential that the value of these assets be reported in order to inform the public and the market of the true value of such companies.

The statement of the financial position of a company shows the historical values (book values) of its assets based on their purchased cost, revaluation and fair values excluding the value of the intellectual capital generated by the company over the period of its existence.

1.5 Objectives of the study

The research objectives of the study include the following:

- to explain the challenges facing the accounting profession with regard to the accounting treatment of intellectual capital

- to analyse and evaluate previous studies on the accounting for intellectual capital
- to investigate and report on the extent of the reporting on intellectual capital by South African companies
- to obtain a standardised and comparable approach to the accounting for and reporting on intellectual capital in the corporate annual reports

The research objectives will include an investigation into the corporate annual reports of forty companies listed on the Johannesburg Securities Exchange in order to describe the way in which South African companies report on intellectual capital.

1.6 Research design and methodology

1.6.1 Literature review

The study will focus on prior literature in terms of which the main focus has been on the measurement, recognition and disclosure of intellectual capital in financial reporting. Studies on the analysis of the different values attributed to a business by the various users of the financial statements of the business will also be reviewed. The study will also take into account studies on the different types of intellectual capital.

Information for the literature study was obtained from different sources, but mainly from the following:

- articles on the accounting of intellectual capital published on local and international websites
- International Accounting Standards Board (IASB) Framework
- International Accounting Standards (IASs)
- International Financial Reporting Standards (IFRSs)
- joint IASB-FASB project
- other sources

1.6.2 Content analysis

This study will employ an empirical method termed “content analysis” in order to determine the extent of intellectual capital reporting in the corporate annual reports of 40 companies listed on the Johannesburg Securities Exchange. This research method will involve both an analysis of and an investigation into the way in which South African companies report on their intellectual capital. The study will use the established intellectual capital framework (e.g. April, Bosma & Deglon, 2003: 167) to capture the intellectual capital attributes in terms of the three categories that have been identified by other researchers, namely, human capital, structural capital and relational capital, and their performance indicators. Accordingly, a theoretical framework will be used to analyse the results of the content review. This theoretical framework will assist in increasing the objectivity, reliability and comparability of the content analysis. In turn, the content analysis will help to identify the way in which South African companies bridge the gap between reporting on the book value and the market value of a business in order to satisfy the needs of the different users of financial information. The research will also show how the companies investigated recognise and report the existence of the intellectual capital in their organisations.

The reason for this approach is to consolidate the varying views of different researchers and the results of the content analysis. It is hoped that this research will assist the preparers of financial information to identify ways in which to report the importance and value of intellectual capital in both financial and corporate reporting. In addition, it is hoped that the research will also contribute to the work of the corporate annual reports preparers, standard setters, academics and students.

The research should also facilitate more debate on the accounting treatment of and reporting on intellectual capital, as well as challenging the accounting profession, standard setters and corporate governance bodies to move towards achieving a standardised approach in respect of the reporting of intellectual capital.

1.7 Structure of the study

The study is organised around seven chapters. The discussions in the different chapters will mirror the growing importance of accounting for intellectual capital in the knowledge economy, while the overall structure of the study will emphasise the way in which to account for and report on intellectual capital to the capital providers and other stakeholders of a company.

A visual overview of the thesis and a brief summary of the study will follow below.

1.7.1 A visual overview of the thesis

<table>
<tr><td colspan="3">Intellectual Capital: Measurement, Recognition and Reporting</td></tr>
<tr><td>Chapter 1
Introduction and background information</td><td>Chapter 2
Theoretical framework and literature review</td><td>Chapter 3
Accounting debate on intellectual capital</td></tr>
<tr><td>Chapter 4
Measurement, recognition and disclosure of intellectual capital</td><td>Chapter 5
Research design and methodology</td><td>Chapter 6
Research results: Content analysis</td></tr>
<tr><td colspan="3">Chapter 7
Summary, conclusions and recommendations</td></tr>
</table>

1.7.2 Chapter 1: Introduction

This chapter provides the background information to the study, defines the research problem and the hypothesis, outlines the reason for the research as well as its objectives, as well as presenting an overview of the research design and methodology.

1.7.3 Chapter 2: Theoretical framework and literature review

This chapter describes and explains the different types of intellectual capital asset, as well as detailing the framework in terms of which the financial accounting system operates. The chapter also contains a description and analysis of the different types of intellectual capital, and their relation to other intangible assets.

1.7.4 Chapter 3: Accounting debate on intellectual capital

This chapter documents the varying views and opinions of different researchers on the accounting for intellectual capital as contained in prior studies. Arguments both in favour and against the capitalising of intellectual capital in annual financial statements will be outlined in the chapter. In addition, debates on the risk of management's manipulation of financial information as a result of the subjectivity associated with the recognition and measurement of intellectual capital will be explored.

1.7.5 Chapter 4: Measurement, recognition and disclosure of intellectual capital

This chapter contains an analysis of the accounting treatment of intangible assets as prescribed by IFRSs and IASs and, in particular, its applicability to intellectual capital. Different financial and non-financial measurement and valuation models which have been developed to value intellectual capital will be explored in the chapter as will the views of other researchers on the way in which to report on intellectual capital. This chapter also briefly explains how companies use management accounting and internal reporting to report information on intellectual capital in order to make strategic decisions in respect of the entity's performance.

1.7.6 Chapter 5: Research methodology

This chapter introduces and describes the content analysis. The research methodology for the study encompasses the following:

- Firstly, an analytical analysis of the corporate annual reports of the top 40 companies listed on the JSE Limited in order to discover the extent of the reporting on intellectual capital. The framework used is based on the three categories of intellectual capital and their attributes and performance indicators.

- Secondly, a financial analysis will be undertaken on the extent to which these 40 companies spend on intellectual capital per category as reported on their statements of comprehensive income so as to discover the amount of financial resources invested in these assets.

- Lastly , a reporting comparison between the three categories of intellectual assets

The analysis of the results of the content analysis performed on the 40 companies will be conducted based on the theoretical framework and literature review as discussed in chapter 2.

1.7.7 Chapter 6: Results of the content analysis discussion

The research findings as well as the results of the content analysis of the corporate annual reports of the top 40 companies listed on the JSE Ltd will be reported and discussed in this chapter.

1.7.8 Chapter 7: Summary, conclusions and recommendations

In addition to summarising the results of the study this chapter draws conclusions as well as making recommendations in respect of the optimal accounting treatment of and the reporting on intellectual capital in financial reporting to an entity's stakeholders.

1.8 Terminology and abbreviations used

In some instances the term “intellectual capital” is used interchangeably with the term “intangible assets”. The view that intellectual capital is either the element or subset of intangible assets is adopted in this study.

The following abbreviations and acronyms are used in this study:

IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IASB	International Accounting Standards Board
JSE	Johannesburg Securities Exchange
SAICA	South African Institute of Chartered Accountants
ED	Exposure draft
OECD	Organisation for Economic Co-Operation and Development.
CIMA	Chartered Institute of Management Accountants
IOD	Institute of Directors in South Africa

CHAPTER 2

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

In order to obtain an understanding of the measurement and recognition of intellectual capital, and the way in which to report on it, it is necessary to understand what intellectual capital is and why it is an important part of a business. Generally, the terms “intellectual assets”, “intellectual capital” and “intangibles” are used interchangeably, and they usually have the same meaning. However, financial reporting refers only to those intangible assets which are recognised by the IASB with these assets forming part of the intellectual capital.

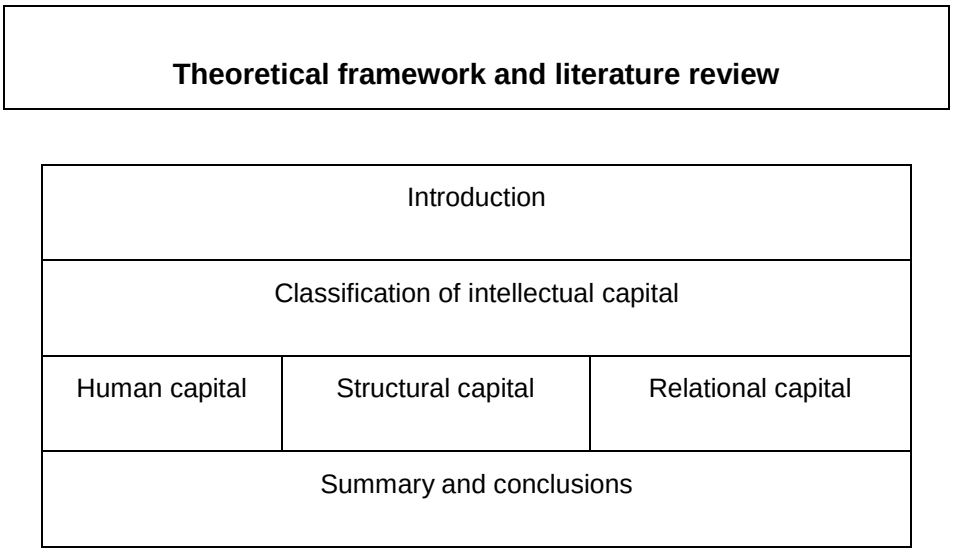
Researchers classify intellectual capital as consisting of human, structural and relational capital (Abeysekera, 2003: 422). However, the values inherent in the human, structural and relational capital of an organisation remain hidden, and are not disclosed in its financial records.

The objective of this chapter is to discuss the different categories of the intellectual capital used by companies while laying out in detail a framework in terms of which the financial accounting system operates. The chapter also contains an analysis of the different classes of intellectual capital, and their relation to other intangible assets. The classification of intellectual capital assists companies both to identify and to group those resources that need to be measured and managed.

The identification of the intellectual capital which a company possesses is based on the intellectual capital indicators which are relevant to a specific class. These indicators will be discussed in chapter 3 of this study.

A visual overview of chapter 2 follows below.

2.2 A visual overview of chapter 2



2.3 Classification of intellectual capital

There is no commonly agreed upon definition of intellectual capital and the term is often used broadly to mean the same as the term “intangibles”. At the same time there is a widespread tendency to use the terms “intellectual capital” and “intangible assets” interchangeably. Intangible assets refer to those assets that, according to the International Financial Reporting Standards (IFRS), are allowed to be recognised in the statement of financial position of a company. Broadly, intellectual capital may be both the end result of a knowledge transformation process or the knowledge that is transformed into intellectual capital (CIMA, 2005: 6). In addition, intellectual capital may be referred to as the most important and valuable strategic resource in the modern business environment.

According to Coakes and Bradburn (2005: 1–2), any monetary investments made by a company in expectation of future profits that are not immediately embodied in tangible form constitute an intangible asset and, in most cases, an intellectual capital. The existence of intellectual capital is inferable rather than demonstrable and verifiable. Broadly speaking, intellectual capital is any factor that contributes to the value

generation process of a company and which is, more or less, directly under the control of the company itself. The view of Hunter, Webster and Wyatt (2005: 2) that intellectual capital comprises a subset of intangible assets is adopted in this study. "Intangible assets" and "intellectual capital" will be used interchangeably with the view that intellectual capital is part of the intangible assets of a company. Mouritsen and Larson (2001: 400) suggest that intellectual capital is the aggregate sum of intangible assets which comprise both human and structural capital. These different descriptions of intellectual capital are all consolidated in the definition of intellectual capital.

Leif Edvinsson (in Roslender, 2000: 2) defines intellectual capital as "the possession of knowledge, applied experience, organisational technology, customer relationships, and professional skills that provides a company with a competitive advantage in the market".

Abeysekera (2003: 422) identifies three classes of intellectual capital, namely, human capital, structural capital and relational capital. She further suggests that the definition of intellectual capital refers to intangibles not recognised in the financial statements. However, part of structural capital, that is, intellectual property, is recognised in financial statements as it satisfies the identifiability requirement of the IASB. Based on IFRS 3 (IASB, 2008:334) Brännström and Giuliani (2009: 23) describe intellectual capital as follows:

Intellectual capital = identified intangible assets + purchased goodwill

Studies show that intellectual capital is found on all levels within a company and the three classes of intellectual capital support each other. Thomas (1997: 5) argues that human capital refers to the capacity of individuals to provide solutions for their customers while structural capital transforms know-how into the property of the group. Customer capital allows relations with customers to be perpetuated. This view of Thomas is supported by other researchers (e.g. Swart, 2006: 137).

Figure 2.1 below illustrates the different sub-components or classes of intellectual capital. A discussion on the three classes of intellectual capital will follow after Figure 2.1.

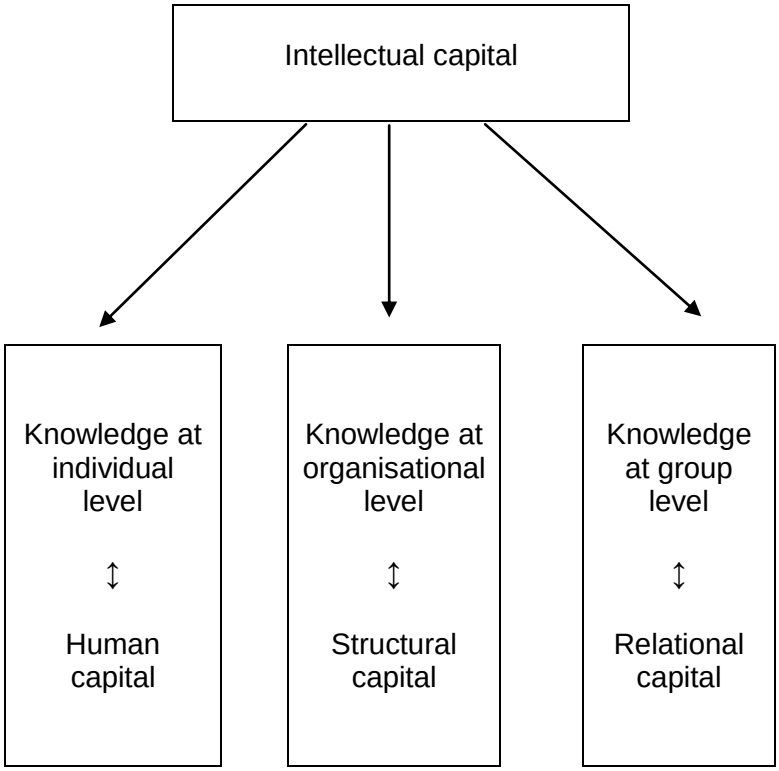


Figure 2.1: Classes of intellectual capital

Source: Concept of intellectual capital. (**Ordóñez de Pablos, 2004: 636)**

Table 2.1 above serves to illustrate the knowledge types and indicators across the three classes of intellectual capital. In addition to information on financial performance, investors and managers take into account other factors and indicators when they conduct research and make judgments about their investment options. Concepts such as resilience, quality of management, and potential risk areas are all material in the decision making process of groups of stakeholders, as well as the users of financial information (OECD, 2006: 11). Accordingly, the list under each sub-component of intellectual capital presented in the table below is not conclusive.

Table 2-1: Classification of intellectual capital

Human capital	**Relational capital**
• Know-how • Education • Vocational qualification • Work-related knowledge • Occupational assessments • Psychometric assessments • Work-related competencies • Entrepreneurial élan innovativeness and proactive and reactive abilities • Changeability	• Brands • Customers • Customer loyalty • Company names • Backlog orders • Distribution channels • Business collaborations • Licensing agreements • Favourable contracts • Franchising agreements
Structural capital	
Intellectual property	**Infrastructure assets**
• Patents • Copyrights • Design rights • Trade secrets • Trademarks • Service marks	• Management philosophy • Corporate culture • Management processes • Information systems • Financial relations

Source: CIMA (2005: 6) adapted

2.3.1 Human capital

During the past few years increasing attention has been focused on investigating the financial importance of human capital investment (Johanson, 2002: 36). Bontis and Fitz-enz (2002: 224) describe human capital as representing the individual knowledge stock of an organisation as represented by its employees. These two researchers also describe human capital as the profit lever of the knowledge economy. Human capital includes employees' collective competences, capabilities, and brainpower. According to Riahi-Belkaoui (2003: 217), human capital generates the innovation necessary to create new products and services, and it improves the business processes so as to create value.

Human capital is the foundation of intellectual capital and it is a primary element in the performing of intellectual capital functions. Based on its description and functions it is clear that human capital is a driver of growth within an organisation. However, OECD (2006: 8) notes that, on their own, intellectual capital assets neither create value nor do they generate investment in training and development. In other words, it is essential that intellectual capital assets be combined with other factors, such as improved business processes and information technology, if they are to create value. It is, therefore, of the utmost importance for an organisation both to manage and to use the knowledge possessed by its employees in an extremely effective way (OECD, 2006: 8). This view was also supported by Swart (2006:137) when he notes that intellectual capital represents a move away from merely possessing knowledge and skills to using this knowledge and skills in order to create value for the company. Using this knowledge implies that relationships and processes are needed to transform knowledge into a product or service that will be of value to the company. This view also highlights the interdependent nature of intellectual capital. Accordingly, the nature of intellectual capital makes it very difficult to identify a transaction that may result in an asset that may be recognised in the financial statements. The existence and value creation capabilities of intellectual capital depend on the effective use of both other assets and business processes.

Knowledge management involves both the acquisition of employees' knowledge and the making of information they possess available to other employees within the organisation. It involves the distribution of this information to the right users at the right time. (Kannan & Akhilesh, 2002: 167). Employees acquire their skills and competencies though experience as well as training and development. Some of this knowledge will be unique to the individual and some may be generic. Papmehl (2004: 27) maintains that one of the easiest ways to track human capital is through staff turnover benchmarking. It is essential that companies accurately record and report staff turnover rates and compare these statistics with other companies in the same industry. This will assist companies to put controls in place to retain the skills and talents of its employees. In addition, potential investors take into account the quality of management as reflected in the overall managerial environment.

According to Swart (2006: 141), a study conducted on professional service companies has identified an occupational or industry-specific form of human capital. This form of capital is developed mainly through both a theoretical body of knowledge and subsequent industry experience. Examples of such human capital include medical professionals, accountants, engineers, legal practitioners etc. The knowledge belonging to this form of human capital is acquired through both theoretical means by means of formal education and the practice of the relevant profession (Swart, 2006: 141). In most cases individuals who have acquired these professional skills are required to register for membership with specific professional bodies. This registration demonstrates the level of skills and knowledge possessed by individual members and increases the value placed on these individuals by potential employers. Potential employers generally believe that an individual who possess a professional qualification will contribute to the value creation process of an organisation.

Flamholtz, Bullen and Hua (2002:948) conducted research on human resource accounting. They examined the history and development of accounting in respect of people as human assets and also the way in which to report these assets in the statement of financial position. The results of this study have assisted companies to improve their decision making in the area of human resource management. However,

there are still challenges with regard to the recognising of human capital as an asset in the statement of financial position as human capital does not satisfy the definition, nor does it meet the recognition criteria, of an asset.

The definition of an asset states that an organisation must control the future economic benefits that will flow from that specific asset. This control over future economic benefits is guaranteed by either ownership or a legal right (IASB, 2010: A837). However, unlike other assets, companies do not own their employees, nor do they own the skills, experience and competencies which these employees possess due to the risk of high staff turnover. When employees terminate their contract of employment with a company they take with them their skills, knowledge, experiences, and competencies (Flamholtz et al, 2002: 947). Despite the fact that, if effectively managed, there may be a clear indication that human capital does, indeed, contribute to the value creation process of an organisation. Companies are, nevertheless, not able to control and measure any future economic benefits that may accrue to them as a result of their use of their human capital.

The power to obtain the future economic benefits which flow from an underlying asset is acquired either through ownership of the asset or else control over the economic benefits that will flow from the asset to the company, thereby restricting others to these economic benefits (Lev, 2001: 35). The inability of a company both to control and to measure the future benefits that might flow into the company as a result of use of its employees' knowledge and competences, poses a challenge in terms of the accounting for human capital as assets in the accounting records. However, the IASB (2010: A839) states that an organisation may control benefits that flow from technical knowledge if that knowledge is protected by legal rights or by a legal duty imposed on the relevant employee to maintain confidentiality.

Furthermore, for an item to be recognised in the annual financial statements as an asset, it is essential that the item in question should meet both the definition of an asset and asset recognition requirements. In addition to the control by an entity of future economic benefits that may flow from the asset concerned, the recognition

requirement also refers to the reliable measurement of its value (IASB, 2010: A839–A840). However, the measurement of human capital involves a great degree of subjectivity, and a significant application of estimates. Organisations invest in human capital primarily through training and development (Bontis, 2002: 232). Nevertheless, the value of human capital lies in its use and not in its cost. In other words, the cost of acquiring knowledge and competences and the potential of this knowledge and competencies to generate profits are unrelated. Despite the fact that it is possible to measure salaries, wages, and the costs of recruitment and training, according a value to the growth and accumulation of employee knowledge is a far more difficult task (CIMA, 2005:18). In addition, the spending on staff development and training does not necessarily create value and it is only when the benefits from such expenditure, in the form of increased productivity and innovation, exceed the cost, that an asset or value is created, thus resulting in what is termed value in use (Lev, 2001: 75). Value in use, however, involves a valuation that is based on discounted cash flows at a predetermined discounting rate. The valuing and measuring of human capital based on value in use is difficult as it is not possible to estimate the cash flows that might flow from this human capital (Seetharaman *et al,* 2002: 133). Accordingly, the challenges encountered in estimating cash flows make it difficult to determine the actual value of human capital.

This absence of a reliable value in terms of human capital renders it problematic to monitor the performance of an organisation based on the employment of its human capital. This, in turn, makes it difficult to compare the performance of the organisation in question with the performance of other organisations in the same industry (Chua, 2006: 1). In addition to the challenges involved in obtaining a reliable value, the uncertainty with regard to the control and measurement of future economic benefits relating to human capital, make it impossible to recognise human capital in the annual financial statements (Chen & Min, 2004: 118). On the other hand, the acquisition of better information about their human capital may enable a company to allocate its human resources more effectively, and to identify gaps in the skills within the

organisation (Petty & Guthrie, 2000:166). The argument justifies the identification of and reporting on human capital for strategic reasons.

2.3.2 Structural capital

Structural capital, also known as organisational capital, refers to that knowledge that belongs to an organisation as a whole in terms of technologies, inventions, data, publications, strategy, policies and procedures, and systems. (Riahi-Belkaouri, 2003: 217). In other words, this structural capital refers to the knowledge that stays within a company after the employees have left the company at the end of each working day, and also when they have resigned from the company. When applied within an organisation employee knowledge or human capital generates structural capital which, in turn, may be utilised in order both to increase the competitive advantage of the organisation and to create value for it (Kumara & Swamy, 2004: 82). The difference between human capital and structural capital lies in the fact that human capital refers to the knowledge that belongs to the employees of an organisation while structural capital refers to that knowledge which is created by the human capital that belongs to the organisation. According to Daun (2001: 1) structural capital makes people work smarter and become more productive. A company with weak structural capital will not be able to turn its human capital into value. This view supports the conclusion by Thomas (1997: 5) that the value creation process is a process of transforming human capital into structural capital, and that, at the same time, structural capital supports human capital in the value creation process. With the effective use of both its structural and human capital a company may develop good relations with its stakeholders in the form of relational capital. Relational capital is discussed in detail in section 2.3.3 of this chapter.

Structural capital is stored in organisational files and archives for further use in the processes within the organisation. Certain types of structural capital are protected by copyrights, thus rendering them easy both to identify and to measure. These types of structural capital are discussed in detail in the paragraphs below.

Structural capital includes the use of technology and structures in order to enhance the knowledge flow**,** organisational routines, procedures, systems, cultures and databases of an organisation (OECD, 2006: 10). In other words this class of intellectual capital resembles the organisational know-how which is focused on converting knowledge and skills into intellectual capital. This organisational know-how is reflected in the organisational routines, strategic documents, and rules of the organisation concerned. Knowledge and information as part of structural capital increases a company's ability to compete within the industry in which it operates (Kumara & Swamy, 2004: 83). The survival of any organisation depends mainly on whether the organisation is able to compete effectively within its industry. In order to do so and to increase its competitive advantage an organisation relies mainly on its structural capital. Swart (2006: 148) describes structural capital as the backbone of an organisation. Structural capital may be divided into two categories, namely, the infrastructure of an organisation (strategies, processes, and policies) and the intellectual property of the organisation which consists of copyrights, patents, and other legal rights. Based on their nature as depicted in Table 2.1 (section 2.3.4) infrastructure assets are generated internally and they form part of what is termed internally generated goodwill in terms of IAS 38 ASB (2010: A 847).

Intellectual property assets refer to those intangible assets such as copyrights and trademarks which are legally protected. In terms of internally generated, intangible assets there exists the challenge to determine whether or not the asset concerned is an identifiable asset that will generate expected future economic benefits. This makes it difficult to assess whether an internally generated, intangible asset qualifies for recognition (IASB, 2010: A845–A846). In addition, the value of intellectual capital lies within its use and it is not possible to measure this value in a reliable way. In order to determine value in use it is necessary both to determine and to measure the future cash flows from the asset concerned. Accordingly, challenges in respect of the measurement of future cash flows from intellectual capital make it difficult to determine the value of the asset. These challenges, together with the non-existence of an active market for such assets, disqualify them from recognition in the annual financial

statements of an organisation. Furthermore, IAS 38 imposes six strict conditions that should be met before an internally generated, intangible asset may be recognised in a statement of financial position. One of the conditions for the recognition of an intangible asset is the fact that a company should be able to demonstrate the existence of a market for the asset itself or its output, its usefulness if the asset is to be used internally, or else the company should be able to prove that the probability exists that the asset will generate future economic benefits (IASB, 2010: A846–A847). The strict requirements for the recognition of internally generated, intangible assets and the measurement challenges make it difficult to recognise the infrastructure assets of an organisation in the financial statements of the organisation.

Intellectual property, on the other hand, arises from the contractual and other legal rights of a company. These contractual and legal rights render these assets identifiable and, thus, the assets concerned meet the recognition criteria of IAS 38 as issued by the IASB. In other words, these assets meet the definition of an asset that should be recognised in the statement of the financial position of a company (IASB, 2010: A838). Intellectual property refers to the technical knowledge that is transferred from human capital and which is protected by a legal contract or other right.

2.3.3 Relational capital

Ordóñez de Pablos (2002: 289) defines relational capital as the knowledge embedded in the relationships of an organisation with its customers, suppliers, stakeholders, and strategic alliance partners. The exchanges across these relationships are strategic and are developed for a specific purpose with a view to strengthening the competitive advantage of the role players. In order to achieve a competitive advantage, long term and strong relationships with rich knowledge and information exchanges are necessary. These relationships should be close knit within the network, and across the relationship units (Swart, 2006: 146). In practice, these relationships may be strengthened by signing service level and other documented agreements. These agreements ensure the effective monitoring of the relationships that exist between the organisation and its customers and suppliers.

According to IFRS 3 of the IASB (2010: A839) relationships with customers acquired in the business combination meet the definition of an intangible asset if such relationships are the result of a contract. However, non-contractual customer relationships acquired in the business combination meet the definition of an intangible asset if these relationships meet the separability criterion of the definition, provided that they may be exchanged for either the same or a similar asset. Purchase and sales orders meet the contractual legal criterion for identification as intangible assets as arising from a contractual agreement, and may be recognised in the annual financial statements of an organisation. Organisational relationships with customers and suppliers that meet the criterion in respect of recognition in the financial statements of an organisation are disclosed separately from the goodwill in the group financial statements (IASB, 2009: 1923). Purchase and sales orders serve as binding contracts between customers and suppliers. These assets are identifiable and their values may be reliably measured based on the value of the order.

Relationships based on customer loyalty, links with suppliers and other similar relationships are not identifiable, and it is not possible to measure their value reliably. In addition, in common with all intellectual capital categories, the absence of an active market for relational capital is an inherent challenge in respect of this type of capital (Lev, 2001: 42–45). The inability to enter into legal contracts with the parties in relationships units and networks in respect to the expected outcomes of these relationships make it difficult for companies to exercise control over future benefits that may flow from these relationships. In addition, the ability to specify clearly the action and expected outcomes between parties is a prerequisite of an active market. Accordingly, these relationships do not meet the definition of an intangible asset as prescribed by the IASB (IASB: A839). In addition to these challenges, as with all other types of intellectual capital, relational capital is an important part of the value creation of a company. It is, therefore, necessary to report them to the users of financial information and other stakeholders.

Intellectual capital has specific characteristics that distinguish it from other physical and financial assets. Chatzkel (2003: 136) identifies these characteristics as follows:

- These assets may be deployed at the same time in multiple uses by multiple people.
- Non-owners may rarely be precluded from enjoying some of the benefits that flow from these assets.
- There is an absence of active markets for these assets.
- The value is dependent on the use of these assets.

Although these assets display characteristics that distinguish them from the other assets of a company, intellectual capital plays an important role in the value creation process that contributes to the overall value of the company.

2.4 Summary and conclusions

This chapter first explored the meaning of intellectual capital in terms of the different definitions and descriptions of various researchers. It was noted that there is no commonly agreed upon definition of intellectual capital as it is difficult to define these assets in terms of one definition only. The description and analysis of the different types of intangible assets and intellectual capital, and their relation to other assets, were also discussed in detail. The three different categories of intellectual capital are interrelated with human capital resulting in structural capital which, in turn, results in relational capital. Accordingly, the value creation process of a company refers to the process of transforming human capital into structural capital with companies using both human and structural capital to produce relational capital. The value creation process which is driven by the three categories of intellectual capital supports the view that it is more difficult to demonstrate the existence of intellectual capital as an asset rather than as a process.

In this chapter the framework in terms of which the accounting system operates, and its relevance to the recognition of intellectual capital as part of the total assets of a company, were explored. It was found that, based on the current recognition criteria required by the IASB, it is not possible both to recognise and to report most intangibles assets, referred to here as intellectual capital, together with other assets in the

statement of financial position of a company. The only intellectual capital categories that meet the recognition criteria of the IASB are those that are identifiable by means of contractual or any other legal rights. These categories may be classified as structural capital.

Since companies do not have the ability to exercise strict legal control over intellectual capital, such as human, relational and infrastructural capital, these assets do not qualify as assets that may be recognised in the financial statements. Intellectual capital differs from physical, financial and certain intangible assets, in the ability of the owners of the intellectual capital to exclude others from enjoying its benefits.

This chapter also explored the fact that most intellectual assets are not acquired through a verifiable transaction. Unlike other assets, intellectual assets are created by an organisation by means of contractual agreements, relations and systems and processes. Accordingly, their nature makes it difficult to trace the costs relating to the acquisition of intellectual capital. In addition, their nature creates significant challenges in the financial reporting and in the management of these assets. Nevertheless, these challenges do not prevent companies from reporting on the existence, value, and the importance of these assets to the users of financial information and other stakeholders. Intellectual capital plays a substantial and growing role in sustaining the economic growth of a company.

The information presented in this chapter, together with the background information, establishes the basis for the content analysis studies. The classes of intellectual capital identified will be used as part of the criteria that will be employed in the content analysis in order to increase the objectivity, reliability and comparability of the information arising from the utilisation of this research method.

CHAPTER 3

ACCOUNTING DEBATE ON INTELLECTUAL CAPITAL

3.1 Introduction

Much time and effort have been expended over the past few decades in debating the reforming of the accounting standards so as to include a wider range of assets than previously in the statement of financial position. The results of the study conducted by Marr and Moustaghfir (2005: 1120) suggest that the debates on intellectual capital started as early as the mid 1960s. However, during this period there was no universal definition or classification of intellectual capital in place as a result of the fact that there was still much that was unclear about its nature, and the way in which these assets work (Marr & Maustaghfir, 2005: 1120). However, the topic of intellectual capital was later researched by a number of researchers who identified and analysed different classes of these assets. The debate on the topic also forced the IASB to include certain of the intellectual capital categories in its definition of intangible assets.

The debate on the existence of intellectual capital within a business was initially explained by means of the recognition and definition of the goodwill that is part of a business. According to Seetharaman, Balachandran and Saravanan (2002: 131) the debate on the accounting in respect of goodwill started as early as the19th century when a scholar by the name of Francis More defined goodwill as "*a present value placed on the anticipated future earnings in excess of a reasonable return on producing assets".*

The IASB (2010: A101–A105 & A845), however, makes a distinction between the goodwill acquired in a business combination and internally generated goodwill. The IASB refers to the goodwill acquired in a business combination as representing a payment made by an acquirer in anticipation of future economic benefits from assets that are not capable of being individually identified and separately recognised. The value of acquired goodwill is, therefore, determined by business combination transactions, and is

recognised as an intangible asset in the statement of financial position of a company. Internally generated goodwill, on the other hand, refers to the expenditure incurred in order to generate future economic benefits that do not result in the creation of an intangible asset (IASB 2010: A845). Accordingly, these assets are not recognised as assets in the financial statements, and they form part of the intellectual capital that is expensed as a periodic cost in the statement of comprehensive income. An example of internally generated goodwill is the expenditure incurred in order to service a key customer so as to gain the customer's loyalty to the company's product. The result of incurring this expenditure is the customer loyalty that may result in future economic benefits flowing into the company. However, these future economic benefits will not result in a recognisable intangible asset because the company will not have control over the asset nor over future economic benefits that may flow from the asset. In addition the measurement of intangible assets is also problematic. According to Swart (2006: 137), unlike other assets, the value of internally generated goodwill is created over a period through a series of activities and it is not possible to link this value to a specific transaction.

Despite the existence of and debate on goodwill, the debate on intellectual capital surfaced in the 1960s and became more marked in the 1990s. The debate on this subject is now rooted in different disciplines, namely, economics, accounting, finance, strategic management, human resource and marketing. Nevertheless, intellectual capital is linked more closely to accounting than to any other discipline as there is a need for an accounting perspective in respect of the value creation process (Lev, 2001: 3). This linking of intellectual capital to accounting has made it necessary for accountants to continue to research and debate the treatment of intellectual capital in the annual financial statements of companies in order to improve annual reporting.

In the early 1990s, writers and scholars identified the growing importance of intellectual capital as a source of long-term value creation for organisations (Roslender & Fincham, 2004: 179). During this time the literature on intellectual capital focused mainly on the need to report this type of capital as a separate asset in a business. This trend resulted in a debate on how best to do this in an accurate and reliable way in order to

complement the financial information on strategic reporting. Other researchers such as Seetharaman (2002: 140) and van der Meer-Kooistra and Zijlstra (2001: 456) proposed a voluntary reporting that would support the financial reporting and assist investors in their decision making.

In 2003 the IASB initiated its field work and round-table discussions with the aim of obtaining feedback on their project on IFRS 3 *Business Combinations*. This project focused, *inter alia,* on the accounting for both goodwill and intangible assets acquired in business combinations. During the round-table project discussions the debate centred mainly around the accounting treatment of internally generated, intangible assets (IASB, 2008: 382 and IASB, 2010: A97). The project resulted in the amendments of IAS 38, *Intangible assets* which became effective in January 2004. Further improvements to IFRSs were issued in May 2008 and in April 2009.

In view of the varying viewpoints which have emerged from different studies on the subject and the debates on intellectual capital this chapter will analyse the different arguments − in favour of and against − in respect of recognising intellectual capital in the annual financial statements of organisations.

An overview of chapter 3 follows below.

3.2 A visual overview of chapter 3

Accounting debate on intellectual capital	
Introduction	
Arguments in favour of recognising intellectual capital in financial reporting - Closes the gap between the book and the market values - Provides information about the real value of the organisation - Reduces information asymmetry - Enhances the reputation of organisations	Arguments against recognising intellectual capital in financial reporting - Does not meet qualitative requirements of the information in terms of the IASB - Does not meet the definition and recognition criteria of an asset
Summary and conclusions	

3.3 Arguments in favour of recognising intellectual capital in financial reporting

It emerged from the literature review that the argument in favour of recognising intellectual assets in financial reporting involves recognising that the true value of a company may be assessed only by taking intellectual capital into account (Marr, Schiuma & Neely, 2004:553). This also involves disclosing the value of intellectual capital as an integral part of financial reporting so as to reflect the true value of the organisation as a whole and to assist investors and other stakeholders to make informed decisions. However, this argument also encompasses broader questions about the ability of financial reporting both to explain and analyse the intellectual capital of an organisation. Accordingly, the argument also identifies a need to develop standards that

may be used to regulate the disclosure of intellectual capital to the users of financial information.

Financial accounting does not recognise intellectual capital as an asset in the financial statements as these assets do not meet the recognition criteria set out by the IASB (2010: A838). Therefore the value created through the use of these intangible assets remains unreported to the users of company information and, as a result, the non-recognition of intellectual capital in the financial statements creates a gap between the accounting and the capital market values (Rodov & Leliaert, 2002: 323). Seetharaman *et al* (2002:132) argue that the accounting profession needs to do more in order to remain relevant in the knowledge economy. Knowledge and information comprise the largest part of the intangible value creation of a business. Seetharaman *et a*l (2002:132) contend that the main challenge currently facing the accounting discipline is the measurement of and reporting on this knowledge. Some researchers argue that the relevance and usefulness of financial accounting reporting has diminished, and its limitations have attracted greater attention in the wake of a series of accounting and corporate scandals (Sujan & Abeyeskera, 2007:1). Financial reporting is considered to be inadequate in meeting the financial information needs of its different users (Bozzolan, O'Regan & Ricceri, 2006: 1). It is essential that corporate reporting include information which is useful for decision making and that it satisfy the needs of all its users. In other words, information relating to the value creation process in a business and the true value of the company should be reflected in the annual reporting.

The above arguments suggest that there is a need to capture the nature and value of both the intellectual capital and the other intangible assets that add value to the overall value of the business in the reporting. It has also become clear from the above debate that there is both a need and a drive to establish new measures and ways in which to report on intellectual capital in order to complement the financial reporting. Kukec (2007: 28) refers to this kind of reporting as broad-based business reporting. Broad-based reporting provides investors and other stakeholders with both mandatory and contextual information and assists them to make informed decisions.

A separate debate revolves around the need to develop better technological and infrastructural systems for creating, capturing and disseminating the intellectual capital within organisations (April *et al,* 2003: 165–166). It is argued that these systems will assist companies to optimise the management of their intellectual capital in order to improve their performance on a continuous basis.

Holmen (2005: 2) and other researchers argue that companies would achieve overall advantages if they improved their external reporting on intellectual capital. Some of these advantages include

- closing the gap between the book value and the market value of the organisation
- providing improved information about the real value of the organisation
- reducing information asymmetry
- enhancing the reputation of the organisation

The above arguments have been supported by most studies on intellectual capital and they form the basis for debates in favour of including intellectual capital in financial reporting (Li, Pike & Haniffa, 2008: 137).

3.3.1 Reporting on intellectual capital closes the gap between the book and market values of the organisation

Financial reporting has been criticised as not keeping pace with the vast changes taking place in the business world, and the fact that an increasing number of companies hold more intellectual capital than other assets. Research has proven that there is always a difference between the book value of a company and its market value with the book value normally being less than the market value. (Seetharamanan et al, 2002: 130). Sujan and Abeysekera (2007: 1) argue that intellectual capital has the potential to explain this difference. It is also argued that the traditional factors of production, that is, labour, raw material and financial capital, also include the knowledge possessed at the level of individuals, organisations, and relationships. However, the accounting framework (e.g. IASB, 2010) recognises only those resources and assets that meet the requirements of IFRSs and IASs for reporting.

During the IASB roundtable discussions, some members of the International Accounting Standards Committee (IASC) submitted their comments to the committee in favour of recognising internally generated, intangible assets in financial statements. They argued that the non-recognition of investments in intangible assets in the financial statements distorts the measurement of a company's performance and does not allow for an accurate assessment of the returns on investment in intangible assets (IASB, 2008: 1794 par BCZ39 (b) (i)). The comments received by the IASC also highlighted the fact that the recognition criteria for intangible assets were too strict and would, thus, prevent the recognition of many internally generated, intangible assets. The IASs always maintained a conservative approach in respect of recognising intangible assets. Steward (2007: 2–7) supports the notion that IASs maintain a conservative approach when he argues that the traditional accounting equation (Assets = owner's equity + liabilities) should include investment in intellectual capital in order to reflect the true value of the assets of a company. This inclusion of intellectual capital in the total assets of a company will close the gap that currently exists between the book and the market values of a company.

Bismuth and Kirkpatrick (as cited in OECD, 2006: 37) note in their work that it is not possible for financial accounts − and neither should they be − to be used to reflect the market value of an company. They base this view on the fact that financial statements do not contain all the information necessary in order to do a market valuation.

3.3.2 Reporting on intellectual capital provides information about the real value of the organisation

Many studies on intellectual capital argue that it is possible to assess the true value of a company only by taking its intellectual capital into account. The real value of an organisation is reflected on the capital markets, and it is this value which investors are prepared to pay as the purchase price for the company. Burgman and Roos (2007: 8) argue that investors are mainly interested in the share appreciation which is a reflection of company market valuation through market capitalisation. Market capitalisation provides a measure of intellectual capital in addition to the other assets

of a company (Burgman & Roos, 2007: 8). The market value of the company, which includes the value of its intellectual capital, reflects the true value of the company. In addition, this value also reflects the capability of the company to generate future cash inflows.

The market value of a business represents the projected discounted cash flows of the company's operations. Accordingly, this value provides a framework in terms of which investors may make investment decisions. In addition to the assets disclosed in the statement of financial position the market also values those assets that are not reported by looking at the competencies of management, the image and reputation of the company and, also, its processes (Vigario, 2002: 204). The process of market valuation results in a higher value compared to the value disclosed in the books of the company. Hence, the IASB states that the difference between the market value and the book value of the company, as represented by its identifiable net assets, does not represent the cost of the intangible assets controlled by the company but includes a range of factors that affect the market value (IASB, 2010: A845). The latter refers to those factors that are part of the company as seen by the market, and they are part of the value creation process.

Starovic, CIMA and Marr (2005: 5–23) maintain that, although it is not possible to assign monetary values to most internally generated, intangible assets, it is, nevertheless, necessary that these assets be taken into account if the process of value creation is to be properly understood. Companies should look beyond the assets reported in the financial statements while finance professionals should use their expertise and skills in measurement and control in order to develop systems which are capable of accommodating intellectual capital. Failure to do so may lead to inefficient resource allocation and utilisation. In view of the strict requirements imposed by the IASB (2010: A845–A846) in terms of the recognition of assets, it is essential that these assets be reported in public documents in order to communicate their existence to investors and other stakeholders.

The Framework for the Preparation and Presentation of Financial Statements (IASB, 2010: 84) states that the preparers of financial statements have to contend with the uncertainties that surround the value of certain items to be reported in the financial statements. One of the qualitative characteristics of financial information is the exercise of prudence in recognising uncertainties. Prudence refers to the reliability of information and to the evaluation methods used throughout the valuation process. The use of the impairment test, depreciation and provision for irrecoverable debts reduces the values of reported assets. Consequently, the prudent approach alters the reporting value rather than the market value, thus resulting in an increase in the gap between the book value and the market value of an organisation (Abeysekera, 2007: 331). The fact that financial accounting and reporting methods are not sufficiently responsive to capture the present value of a business may result in managers making incorrect decisions and funding incorrect investments.

Seetharaman et al (2002: 133) go on to state that reporting on intellectual capital promotes transparency which, in turn, lowers the cost of capital. This argument is supported by Vergauwen, Bollen and Oirbans (2007: 1165) when they note that reporting on intellectual capital lowers the perceived risk of a company because full disclosure of all activities of a company results in a better assessment of the future wealth creation capabilities of the company and this, in turn, leads to a decline in the company's cost of capital. This reduced cost of capital will then result in an increase in the market value of the company which implies that the company's true value will then be reflected. In addition, this full disclosure will also result in improved financial reporting.

3.3.3 Reporting on intellectual capital reduces information asymmetry

Lev (2001: 92) argues that variations in the information available to parties may lead to some of the parties, for example, individuals who are connected to a company, being better informed about the activities of the company than others. Any gains accruing to parties close to and connected with the business may come at the expense of outside investors and this may lead to a lowering of investor confidence in the information

presented. This statement is supported by Abeysekera (2007: 331) who notes that the unexplained gap between book value and market value creates two broad classes of investors − those who have access to information relating to this gap and those that do not. In other words, investors close to a company will enjoy greater access to information relating to the difference between market value and book value than those who do not enjoy such access (Abeysekera, 2007: 331). Accordingly, reporting on intellectual capital will address this imbalance in the information communication to different users.

Seetharaman et al (2002: 142–145) argue that, in view of the fact that intellectual capital is of equal importance in the knowledge environment, the IASB should go beyond merely reporting on physical assets if it is to achieve its objective of safeguarding public interests. Seetharaman et al (2002: 142–145) further argue that it is essential that the accounting profession be sensitive to critical business and investor requirements in respect of intellectual capital. The accounting profession paradigm needs to be changed in light of the dynamic and rapid changes in the business environment. The accounting and reporting methods are not sufficiently responsive to capture the present value of intellectual capital (Kossovsky, 2002: 62) and this leads to different information being presented for the same purpose (i.e. decision making) to different users.

3.3.4 Reporting on intellectual capital enhances the reputation of the organisation.

The resources and factors of production of a company are the main drivers of the competitiveness, wealth and performance of the company. The ability of a company to create value stems from its ability to generate profits over and above its cost of capital and also above its competitors. A company should, therefore, seek to obtain and to retain those strategic assets that will assist it to both gain and maintain a competitive advantage (Marr et al, 2004: 551–552). This argument is supported by several scholars and researchers. Seetharaman et al (2002: 128) argue that, in the knowledge economy, it is knowledge rather than tangible assets that drives innovation, revenue

and profit growth, and nurtures a competitive advantage. Accordingly, the existence, as well as the importance, of knowledge assets as value drivers should be clearly communicated to the different users of company information.

As stated in the previous chapter investors and managers take into account both intellectual capital and indicators such as the quality of management and potential risk areas when they conduct research and make judgements about their investment options (OECD, 2006:11). According to the OECD (2006: 37), when companies report more fully on their assets and value drivers, they are rewarded by improved market valuations. Reporting on intellectual capital, therefore, improves the reputation and the image of a company as well as increasing its market value.

Seetharaman et al (2002: 133) maintain that reporting on intellectual capital may be used as a marketing tool. This view was also supported by the chief accountant of Key Corp when he commented *that "any management that restricts itself to GAAP financial reporting will be out of touch with indicators needed in adapting a business to a changing strategic environment"* (Cates, 2007: 48). A company that strives to be an industry leader will, through its technological and human resource know-how as well as its innovation capabilities, use this intellectual capital to launch new products and services ahead of its competitors. Companies use intellectual capital information as part of their marketing strategy. Reporting on intellectual capital should, be part of the strategic objectives of any organisation.

3.4 Arguments against recognising intellectual capital in financial reporting

It emerged from the literature review that there are few arguments against the recognition of intellectual capital in financial reporting and, in fact, most of the studies recommend the designing of accounting systems for managing, monitoring and reporting on intellectual capital. The arguments against recognising intellectual capital in financial reporting stem mainly from an accounting perspective and are based on the IASB Framework for the Preparation and Presentation of Financial Statements, IFRSs and IASs. Nevertheless, a key argument does flow from the uncertainty of future

economic benefits and a company's control of these possible benefits (Lev, Cañibano & Marr, 2005:2) The IASB prohibits the recognition of internally generated, intangible assets, including goodwill, in the financial statements. The nature of intellectual capital qualifies it to be classified as an internally generated intangible asset. As stated in section 3.3.1 above, some comments submitted to the IASC were in favour of recognising internally generated, intangible assets in financial statements. It was also noted in section 3.2 above that the limitations of the IFRSs and IASs have attracted greater attention in the wake of a series of accounting scandals and corporate collapses in the past few years (Sujan & Abeysekera, 2007: 1). These scandals have resulted in both the formulation of stricter requirements for the recognition of assets in the financial statements and in the amendment of IAS 38 (IASB, 2010:B1728-1733)

The financial statements are designed both to provide accurate and reliable estimates of the values disclosed and to prevent the manipulation of information by management. In order to achieve this objective, the IASB (2010: B1728–B1733) sets strict criteria for the recognition of items in the statement of financial position. The debate against the recognition of intellectual capital in the financial statements revolves around the following two arguments:

1. Information on intellectual capital does not meet the critical qualitative characteristics of financial information designed to achieve fair presentation.
2. Intellectual capital does not meet the definition and the recognition criteria of an asset.

3.4.1 Information on intellectual capital does not meet the critical qualitative characteristics of financial information in terms of the IASB

The Framework for the Preparation and Presentation of Financial Statements requires that financial information should be of high quality in order to render it useful to the users. The qualitative characteristics listed in the IASB include understandability, relevance, reliability, and comparability (IASB, 2010:82-83). Reliability of information involves, *inter alia*, fair presentation, neutrality and prudence. In other words, the

information disclosed must indeed represent what it claims to represent and be verifiable and free of bias (Holmen, 2005: 4). In addition, fair presentation refers to closeness to reality in terms of the description of the structure and sources of the values, their nature, and their ability to create economic benefits. Prudence refers both to the reliability of information and the evaluation methods used throughout the valuation process. Accordingly, measurement is the key element of the accounting profession in the recognition of any item in the financial statements (Roslender, 2004: 1). Information on intellectual capital does not fulfil this key requirement for recognition in the financial statements. In addition, any attempt to measure this information involves a great degree of subjectivity with this challenge rendering information on intellectual capital less comparable and unreliable.

One of the reasons why the IASB encourages objectivity and reliable and verifiable measurement is to promote comparability across companies. It is difficult to achieve comparability when measures involve subjectivity with no proper basis for obtaining a particular value.

Lev (2001: 42) notes that there are basically no markets for intellectual capital, with the absence of organised and competitive markets for intellectual capital setting these assets apart from other assets. The market provides guidelines for valuations. When valuing a company the analysts will usually look at what is known as “comparables” − similar values of companies. As indicated above the measurement and valuation of intellectual capital is restricted by a lack of comparability. There are no comparables for human capital, processes and systems because there are no prices, no trade and no fair values (Bernhut, 2001: 18). The intellectual capital information in one company is not comparable to similar information in another company in the same industry. This clearly makes it difficult to compare information across companies, and also across industries. In order to ensure that like items are compared fairly it is essential that information on intellectual capital be eliminated in the valuation process of the companies.

The objective of financial reporting is to provide useful information for decision making based on the financial position and performance of the company. The financial accounting framework objectives aim to reduce both subjectivity and the risk of manipulation of financial information by management, as well as to promote the fair presentation of all financial transactions (IASB, 2010: B1715–B1722). Consequently, intellectual capital is excluded in annual financial statements.

It is not possible either to see or to control intellectual capital. In addition, intellectual capital has an uncertain value and it may not be possible to separate it from the organisation as a whole. It does not fulfil the most critical criteria for the identification as an asset, namely, identifiability, control over future economic benefits and reliable measurement. Failure to measure reliably facilitates manipulation and this, in turn, may result in a failure to achieve both fair presentation and comparability. The fusion of knowledge and the information age with traditional industries has been the primary driver of innovation. This need for innovation has resulted in an increase in the ability of companies to change the rules of competition as well as increasing the possibility of corporate failure (Holland, 2007: 281). In addition, what is valuable for one company may be worthless to another and this has resulted in diverse measuring systems that make comparability across companies and across sectors difficult (Starovic et al, 2005:7)**.**The qualitative characteristics of financial information revolve around the measurability of information, which means that the measurability of an item is the most important factor in terms of its recognition and disclosure in the financial statements.

The fall of both Enron and the other intellectually capital-intensive companies raised questions concerning the validity of intellectual capital as a significant element in an organisation. This stems from the fact that information on intellectual capital may be easily manipulated (Chatzkel, 2003: 128). Enron was named “America’s Most Innovative Company” for six consecutive years and, in 2000, it was voted one of the top 10 companies to work for in America. Although it is not possible to attribute the fall of Enron to its move to become an intangible-intensive business alone, nevertheless, the accounting and valuation methods used to value some of the intangibles of the company were contributing factors to its fall. The creativity and manipulation of

accounting information by management, staff and other stakeholders helped to increase and to inflate the earnings of Enron. This, in turn, increased the market value of the company (Graham, 2005: 4). Wallman comments that "*with Enron, accounting was used as a competitive advantage. Generally Accepted Accounting Standards were mechanised, detailed and useless for presenting a fair financial position of the company"* (Chatzkel, 2003: 138–139). This comment emphasises the fact that it is easy to manipulate information relating to intellectual capital and it was as a result of this risk that the IASB was, post Enron, compelled to issue a new statement to address the accounting of goodwill and other intangible assets.

The development of knowledge-intensive companies and their focus on innovation increases business risk. This increased risk, in turn, requires that these companies should have strong internal controls, effective risk management and the co-operation of the audit committee and the board of directors in order to ensure compliance with IFRSs and IASs.

The above arguments reveal the significant risks involved in respect of valuation and measurement when operating with intellectual capital. When a company moves increasingly into an intangible-based environment it is essential that the company bring with it values and practices similar to those it would espouse in a more tangibles-based environment. These values and practices will assist such companies in mitigating both the risks of information manipulation and the subjective valuation and measurement methods applicable in such an environment. Chatzel (2003: 127–129) argues that intangible asset-intensive companies become systems without checks and balances (Chatzkel, 2003: 127–129). The hidden value of intellectual capital makes it easy for managers to manipulate the financial results. This is as a result of the fact that it is not possible to trace this hidden value through a transaction and it will not be reported anywhere in the books of the company. In addition, it is not possible to match increased cash flows to supporting assets which are disclosed in the statement of financial position.

The increasing dependence of corporate value on both tangible and intangible assets with rapidly changing values has created risks for investors. Despite the fact that the accounting profession has set strict conditions for the recognising of intangible assets, it does acknowledge that the value of intangible assets outweighs that of tangible assets, and that this imbalance is growing all the time. In order to reduce the risk associated with the use of intangible assets, the profession should develop realistic yardsticks that may be used to measure the value of these assets (Graham, 2005: 15). This argument supports the study by Kukec (2007: 28-29) into the need to put in place a broad-based reporting framework. He suggests that accountants and auditors should take a leading role in the development of such a framework. Transparency has become a key driver for measuring and reporting intangible assets, and intellectual capital in particular. The argument in respect of the difficulties in measuring intellectual capital has not prevented companies from obtaining realistic values of these assets and finding alternative ways of disclosing such values and information relating to intellectual capital in their corporate annual reports. Reporting on critical information relating to intellectual capital will enhance the overall reporting of a company.

3.4.2 Intellectual capital does not meet the definition and the recognition criteria of an asset in terms of IFRSs and IASs

As mentioned in chapter 2 (section 2.2.1), if an asset is to be recognised in the financial statements, it should meet both the definition of an asset and the recognition criteria as required by the IASB.

The IASB framework (IASB, 2010: B1722) defines an asset as *"*a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity".

A company should have the power to obtain any future benefits that will flow from the asset, and these benefits must be sufficiently certain to meet the probability criterion as set by the IASB (2008: 83–84). However, the nature of intellectual capital makes it difficult for a company effectively to exclude others from enjoying the benefits that flow

from it. A company that owns intellectual capital is often not able to secure these benefits fully and, thus, does not exercise any control over the asset and the benefits that will flow from it (Lev, 2001: 35). The fact that intellectual capital does not meet either the definition or the recognition criteria of an asset makes it difficult to report intellectual capital in the statement of the financial position of a company.

The second part of the recognition criteria refers to the reliable measurement of the value of an item. Determining the value of intellectual capital involves considerable subjectivity and the application of numerous estimates. Accordingly, it is not possible to measure the cost of intellectual capital reliably. Despite the fact that the cost relating to the acquisition and maintenance of intellectual capital may be traced through the expenses, nevertheless this cost and the potential of the asset to generate future benefits are unrelated. In addition, it is not possible to trace the benefits enjoyed by a company from the use of its intellectual capital back to the cost of investing in that asset (Starovic et al, 2005: 18)**.** Based on the above discussion it is clear that intellectual capital does not meet the recognition criteria outlined by the IASB.

As a result of the fact that intellectual capital is referred to as an intangible asset, it follows that it should also meet the definition of an intangible asset in terms of the IASB. The IASB (2010:A837) defines an intangible asset in IAS 38 as "*an identifiable non-monetary asset without physical substance".*

The identifiability of an intangible asset may be achieved when an intangible asset

- Is separable from the entity and may be transferred, sold, licensed or rented, either individually or together with a contract or
- arises from a contractual or legal right (IASB, 2010:A837)

It would be difficult to identify intellectual capital, excluding intellectual property, which would generate expected future economic benefits and then separate such an asset from the company, based on the above identifiability criteria. It is clear from the discussion in chapter 2 above that, firstly, it is not possible to separate human capital in the form of competencies and skills from the individuals who carry them. Secondly,

structural capital forms part of an organisation as a whole and its culture and values. It is, thus, not possible to separate these assets from the organisation that holds them. Lastly, relational capital is formed as a result of both human and structural capital and these relations cannot be separated from the organisation in question. Intellectual capital does not exist as a result of a contract but rather it exists as part of the value creation process. In addition, these assets are entangled in nature and it is not possible to separate them from other assets, and from the organisation as a whole. It is, thus, clear that intellectual assets are used with other assets, and cannot be used on their own.

Furthermore, IAS 38 (IASB 2010: A843) requires that a company should demonstrate the existence of an active market for the asset or its output, or else its usefulness if the asset is going to be used internally if the asset is to be recognised. Intellectual capital does, therefore, not meet the recognition criteria of either an asset outlined in the IASB Framework for the Preparation and Presentation of Financial Statements (IASB: B1728) or an intangible asset in terms of IAS 38 (IASB, 2010: A839).

3.5 Summary and conclusions

This chapter explored the arguments in favour of and against recognising intellectual capital in financial reporting. It was found that the arguments that favour the recognition of intellectual capital revolve around recognising the need to capture, in financial reporting, the nature and value of both intellectual capital and other intangible assets that add value to the overall value of a business. This is for the benefit of investors and other users of financial information.

In addition, it also emerged that researchers do recognise the need to develop alternative financial and non-financial measures of intellectual capital to those prescribed by the IASB, including developing guidelines and standards that will regulate the disclosure of intellectual capital in corporate annual reports. It was also noted that those arguments that support the disclosure of intellectual capital in financial reporting highlight the benefits of doing so for the business as a whole. However, in

light of the challenges involved in recognising intellectual capital in financial reporting, it would be necessary to report on and disclose these assets under the contextual disclosures in the corporate annual reports. Alternative measures and the disclosures of intellectual capital are discussed in detail in section 4.3 of chapter 4.

This chapter also explored arguments against recognising intellectual capital in financial reporting. These counterarguments stem mainly from an accounting perspective and are based on the IASB Framework for the Preparation and Presentation of Financial Statements, IFRSs, and IASs. It is clear from both sets of two arguments that there is a need to develop a reporting framework that will assist in striking a balance between realising the advantages of reporting on intellectual capital and achieving the fair presentation of financial information. It is suggested that both accountants and auditors should take a leading role in the development of such a framework.

CHAPTER 4

MEASUREMENT, RECOGNITION AND DISCLOSURE OF INTELLECTUAL CAPITAL

4.1 Introduction

IAS 38 defines an intangible asset as “an identifiable, non-monetary asset without physical substance” (IASB, 2010: A837). Based on this definition the standard specifies that a company may recognise an item as an asset if the asset:

- is identifiable
- is controlled by the entity
- it is probable that future benefits, specifically attributable to the asset, will flow to the entity, and
- its cost may be measured reliably

From the above requirements it may be concluded that the cost of an item should be reliably measured before the item may be recognised in the financial statements. Despite the fact that an item must meet all the above conditions before it being recognised as an asset, IAS 38 (IASB, 2010: A838) does include control as a central element in the definition of an asset. Control may be defined as the ability to obtain future economic benefits from an item (Starovic *et al*, 2005: 23). However, it is essential that the future economic benefits that will flow to a company should also be measured reliably in order to determine the value in use. Accordingly, measurement is fundamental to the asset recognition rule (Wyatt, 2002: 72–77). The above measurement criteria are also required to be met if the disclosure of information is a statutory requirement, for example; disclosure in the annual financial statements. In order to improve overall reporting, information on intellectual capital may be disclosed in the corporate annual reports as a contextual disclosure.

The Joint IASB-FASB project on Conceptual Framework (IASB Plus, 2008: 8) proposes a broad categorisation of assets into flow-dominant and value-dominant. The IASB refers to flow-dominant assets as “those assets whose current value is generally less important than the cash flows they generate” and to value-dominant assets as “those assets that will produce cash flows from their market related sale” (IASB Plus-IASB Agenda, 2008: 8). In view of their nature, intellectual capital falls under flow-dominant assets. The benefit derived from the use of intellectual capital may be seen when these assets are used in conjunction with other assets. Although it is difficult to measure intellectual capital its existence and benefit should be reported and captured in the corporate annual reports.

In order to assist organisations to improve their annual reporting and to reap the benefits of reporting on intellectual capital, researchers recommend a number of financial and non- financial measurement models that may be used to measure intellectual capital. This chapter explores these different measurement models as well as the different ways in which to recognise and report intellectual capital, once it has been identified.

4.2 An overview of chapter 4

Measurement, recognition and reporting of intellectual capital

Introduction	
Intellectual capital measurement	
Financial measurement models - Discounted cash flow - Relief-from-royal - Comparable transactions - Avoided cost - Value added - Value chain scoreboard - Market to net book value	Non-financial measurement models - Balanced scorecard - Skandia navigator - Human resource accounting - Intangible assets monitor - Knowledge assets map
Recognition of intellectual capital	
Intellectual capital disclosure	
Intellectual capital and internal reporting	
Summary and conclusions	

4.3 Intellectual capital measurement

The existence and use of intellectual capital should be properly managed in order to derive maximum benefits from it. In addition, the effective management of intellectual capital also helps in the measuring of these assets (Holmen, 2005:2). The objective in measuring intellectual capital has both internal and external purposes. In terms of

internal purposes, a company would measure intellectual capital in order to manage its resources more effectively, and, thereby, minimise costs. On the other hand, measuring intellectual capital for external purposes would require verifiable information that signals the expected growth of the company to existing and potential investors, and to other external users of the information (Hunter et al, 2005: 3). The process of measuring intellectual capital involves using both financial and non-financial measurement methods. These methods are explored in sections 4.3.1 and 4.3.2 below.

The current IFRSs do not provide for the presentation of intellectual capital in the financial statements. The reliability of intellectual capital information and accounts depends on the quality of the data and the accumulation of information methods (Ordóñez de Pablos, 2002: 291). The reliability and quality of intellectual information may be enhanced by the effective management of these assets and by the value creation process associated with them.

In order to identify and to measure the level of intellectual capital which a company owns, management should identify the intellectual capital indicators which are relevant to its business. However, identifying these indicators within the relevant industry may be a challenge. Companies may be reluctant to reveal information that might prove useful to their competitors since it is hidden value that provides organisations with a competitive advantage (Vergauwen *et al,* 2007: 1177). In addition, the indicators that operationalise intellectual capital in different categories are not identical. This would clearly imply identifying indicators for different purposes (Holmen, 2005: 2).

Market share, market growth, ethics, and employee and customer satisfaction represent some of the intellectual capital indicators (Johanson, 2003: 32). The table below depicts some of the intellectual capital indicators for each category of intellectual capital. These indicators are currently used for internal reporting only.

Table 4.1 Intellectual capital performance indicators

Human capital	Structural capital	Relational capital
• Personnel cost/revenue • Revenue/ employee • Staff turnover rate • Recruitment, training and development spent per employee	• Research and development expenditure/revenue • Intellectual property/total assets	• Marketing, selling and distribution costs/revenue • Business segments level • Geographical segments level • Market share • Market growth

Source: Vergauwen et al (2007: 1163) adapted.

Intellectual capital indicators are discussed in detail in the integration of the balanced score card and the intellectual capital model below.

Holmen (2005: 2–3) identified the following five specific main reasons for measuring intellectual capital:

- *To help organisations formulate their strategy*. By identifying and evaluating intellectual capital an organisation may gain a competitive advantage.
- *To assist in diversification and expansion decisions*. Intellectual capital may be measured to assist in evaluating mergers and acquisitions, particularly in respect of the purchase price of the acquisition.
- *To assess strategy execution.* Measuring intellectual capital may lead to the development of key performance indicators that will help evaluate the execution of any strategy employed.
- *For use as a basis for compensation.* The measurement of intellectual capital may be linked to an organisation's incentive and compensation plan.

- *To communicate with external stakeholders.* The value of the intellectual capital will communicate to external stakeholders the true value of the organisation.

Marr *et a*l (2004: 553) summarise the overall objectives of measuring intellectual capital as the evaluation of the company in order to communicate its real value to the different stakeholders, and to identify the value adding components of the intangible assets in order to manage these assets.

Intellectual capital is both a value adding asset and a resource which is capable of generating business value. According to Van der Meer-Kooistra and Zijlstra (2001: 472) the measurement system should provide a broad insight into the value creation capacity of the intellectual capital. It is, therefore, important to quantify the information on intellectual capital (Van der Meer-Kooistra & Zijlstra, 2001: 472). Both the financial and non-financial measurements recommended by different researchers should be used to assist companies to capture their value creation capacity.

Measuring and reporting on intellectual capital closes the gap between the book value and the market value of a company. The market value of a company refers to the sum of recognised conventional assets, recognised intangible assets, and the non-recognised competencies which are represented by intellectual capital (Mouritsen, 2003: 20). Part of the difference between the book value of a business and its value as perceived by the market represents intellectual capital which is not recognised in the separate financial statements of the company.

IFRSs have created a greater need to focus on consistent and comparable financial reporting. In the absence of standards and generally accepted accounting principles, both financial and non-financial measures may be used to measure intellectual capital. Effective non-financial measures will complement financial measures, provide feedback mechanism for actions, and enhance the management of the company as a whole (Holmen, 2005: 2). ED 2009/6 (IASB, 2009) on management commentary serves to promote this view of Holmen. In terms of this ED companies will be able to

measure intellectual capital using non-financial measures, and report both its value and existence under management commentary.

In the past decade scholars and researchers have developed a number of valuation and measurement models that may assist managers to measure intellectual capital and understand it's worth to the company (Tayles, Webster & Sugden, 2005: 325). Managers should acknowledge that it is not possible to separate intellectual capital assets which are entangled in nature from the disentangled assets. In view of the fact that intellectual capital assets are not capable of being individually identified and separately recognised, it is difficult to apportion the benefits accruing to a company through their use of these assets to individual intellectual assets. It may, therefore, be appropriate to measure the value of the intellectual capital in totality based on the difference between the book value of the company and its market value (Tayles *et al,* 2005: 329). Intellectual capital measurement is made possible by the use of the non-financial methods of measurements that are used for internal reporting. Studies show that both financial and non-financial methods of measuring intellectual capital are still in the early stages although there is a trend to appreciate their existence through the recognition of goodwill (Giuliani & Brännström**,** 2009: 21). The use of these measurement techniques is not aimed at gathering information which is to be disclosed in the annual financial statements, but rather to enhance and support the information reported to different users.

Marr et al (2004: 554) state that a company grows because of its hidden values which arise from its intellectual assets. It is, thus, critical that management identify and manage these assets and their value. The management of intellectual capital involves identifying, measuring and reporting on its value in the reporting systems of the company (Marr et al, 2004: 554). Most researchers are of the opinion that the intellectual capital measurement system should use qualitative and quantitative, financial, and non-financial, and process description models. With the issue of ED 2009/6 on management commentary information on intellectual capital should be available to all the users of information. This information may be collected using qualitative and quantitative, and financial and non-financial methods of measurement.

A quantitative approach is differentiated from a qualitative approach by differences in the processes. A quantitative approach to the valuing of intellectual capital utilises numbers while the qualitative approach employs words. Through these different processes discrete outcomes may be expressed (Coakes & Bradburn, 2005: 4). It is essential that intangible assets be managed effectively and also with greater care, and in a different way to other assets. It must be noted that intellectual capital is not entirely ignored in financial reporting as it is recognised in the management accounting system. The management accounting system uses both quantitative and qualitative information for internal reporting (Hunter et al, 2005:5). In order to improve external reporting information from the management accounting system may be included in the corporate annual reports to allow users of the information to make informed decisions about the company.

4.3.1 Financial measurement models for intellectual capital

The existing financial measures used to assess the market value of an asset address the financial contribution made through intellectual capital. Researchers have identified a number of financial measures that include, inter alia, the discounted cash flow technique (DCF), relief-from-royalty, comparable transactions, avoided cost, adjusted present value, economic value added, value chain scoreboard, market-to-book ratio, and the capital asset pricing model. These financial techniques are used to measure the market value of a company for different purposes. Financial measures involve assigning a number to a company although the resultant value is not disclosed in the financial statements (Olsen, Halliwell & Gray 2007: 2). Nevertheless, this value may be reported in the contextual disclosures of the corporate annual reports to communicate the unreported value of the organisation.

4.3.1.1 Discounted cash flow model

As indicated in the previous chapters the value of Intellectual capital is in its use and not in its cost. Intellectual capital may, therefore be measured using the discounted cash flow method (DCF). DCF is normally used by management for internal reporting

purposes. In terms of the DCF the value of an asset is determined by using the present value of the projected earnings that will be generated by the asset after taking into account the relative risk of that particular asset, the contribution of other assets, and the discount rate that reflects the time value of money of capital invested. This method is used to value such intangible assets as technology, software, customer relations, covenants not to compete, strategic agreements, franchises and distribution channels (Olsen *et a*l, 2007: 2). The DCF model is also used mainly to evaluate mergers and acquisitions in order to determine the value of the business(es) concerned. It is currently also used for strategic decision making purposes. The use of the DCF model to measure intellectual capital is appropriate for the annual reporting of the true value of the business to all users of information. The disclosure of the true value of the business in corporate annual reports will assist both current and potential capital providers in making informed decisions about their investments.

However, the DCF model is subjective as it depends very much on estimation and assumptions about the future (Seetharaman *et al*, 2002: 143). The model also has limitations which are associated with difficulties in establishing the discount rate to use. The weighted average cost of capital is suitable only for the simplest and static capital structures and, as the capital structure may become complicated; it is not easy to estimate (Bose & Thomas, 2007: 1487). The resulting value is also highly dependent on the company maintaining a table of earnings-generating ability based on both forecasted cash flows and a reflection of the market value of the company. It is, therefore, extremely important that a company manage its intellectual capital effectively while keeping track of the value creation process.

4.3.1.2 Relief-from-royalty model

Intellectual capital assets may be measured using the relief-from royalty method. However, this model is more applicable to the measurement of an aspect of intellectual capital, namely, intellectual property. Intellectual property meets the IASB definition of an intangible asset and forms part of the intangible assets that may be recognised in the annual financial statements (IASB, 2010: A838). The relief-from royalty model is

used to value intellectual property such as trade names and trademarks. According to Olsen *et a*l (2007: 2), in terms of this model the value of the intellectual asset is equal to the all future royalties that would have to be paid for the right to use the asset if it were not acquired or internally generated. A royalty rate is selected based on discussions with management. The discussions would include the importance of the asset, the effectiveness of constraints imposed by competing assets, the ability of competitors to produce similar assets, and market licensing rates for similar assets. The royalty rate is applied to the expected revenue associated with the asset. The resulting royalties estimated are then discounted to their present values. The difficulty with this method is determining the royalty rate (Olsen et al, 2007: 2). Also, as with the DCF method, this method involves some degree of subjectivity. However, in view of the fact that the intellectual property assets meet the requirements of an asset prescribed by the IASB and are measured in terms of IAS 38, this method may be used for a reasonableness test of the value of the intellectual property disclosed in the annual financial statements and for internal reporting purposes only. The model may also be used to determine the market value and fair value adjustment of the intellectual property owned by the company.

4.3.1.3 Comparable transactions model

Intellectual capital forms part of the internally generated, intangible assets of a business and it is not possible to distinguish intellectual capital from the cost of establishing the business as a whole. The internally generated, intangible assets include market-related assets such as internally generated brands, mastheads, customer lists, and internet domains. However, these assets are not recognised in the financial statements and neither is their value recorded on the statement of financial position of the business (IASB, 2010: A847). The comparable transactions model is suitable to measure such internally generated assets. According to Olsen *et al* (2007: 2), when using this model, the value of the intellectual asset is based on the actual prices paid or the expenditure incurred for assets with functional or technical attributes similar to the subject asset. Ratios of the total actual price paid or other relevant market multiples are developed and applied to the intellectual asset to be valued.

Discounts and premiums may be used to arrive at the final value since no two assets are perfectly comparable (Olsen et al, 2007: 2). Since the value determined based on the comparable transaction model involves some degree of subjectivity, and as a result of the challenges involved in obtaining the comparable information, this model may be used for internal reporting, and for strategic and operational decisions purposes only. The resultant value may be disclosed in the contextual disclosures of the corporate annual report. This information will give the users an indication of what other assets the company has apart from those disclosed.

4.3.1.4 Avoided cost model

The value of intellectual capital is part of the goodwill purchased in a business combination. This goodwill is represented by the excess of the cost of the business combination over the net fair value, including the contingent liabilities of the business (IASB, 2010: A106). The avoided cost model is exactly similar to the calculation of the purchased goodwill − it uses the historical information readily available within the company and it does not apply subjective assumptions. Under this method the value of the intangible asset is based on calculating the costs avoided by acquiring a company when obtaining an existing intangible asset rather than incurring costs in generating the asset. The avoided cost method uses the economic principle of substitute in terms of which an informed purchaser would pay more for the asset than the cost of producing or generating a substitute asset. Intangible assets are identified, recognised and valued from the purchaser's perspective as part of the purchased goodwill in a business combination (Olsen et al, 2007: 3). The resultant value from this model represents the value of intellectual capital and it is the only value which is disclosed in the statement of the financial position of the company and which represents the value of these assets.

4.3.1.5 Value added approach

Intellectual capital forms part of the business value creation process. As indicated in the previous chapters, it is not possible to separate these assets from the other assets

of the company. In addition, intellectual capital may be used together with tangible and intangible assets in the value creation process. When calculating the return of assets ratio (ROA) management takes into account only those assets recognised in the statement of financial position while the earnings taken into account include income generated by intellectual capital. The value added by intellectual capital in the value creation process may be determined by using the value added model or approach.

According to Rodov and Leliaert (2002: 32), the value added model comprises a framework of two parts. The first part comes from the value chain concept and arises from the premise that raw materials enter from one end of the value chain and, as they go through a process of transformation into finished goods, value is added to them. The finished goods are then marketed and sold. The purpose of the entire value chain process is to create value for customers (Rodov & Leliaert, 2002: 326). The value added to finished goods is more than the value added by the raw material and other components of the product cost and, hence, the value of the output to the customer will be more than the actual cost of producing the product. The additional value of the output represents the value contributed by the intellectual capital assets. This model is currently used for internal reporting with the reporting of this information to current and potential capital providers assisting them in making informed financial decisions about their investments.

The second part of the value added model refers to the economic value added (EVA). EVA was introduced by Stern, Steward and Co in the 1980s as a tool to assist corporations to pursue their financial directive by adding in the maximisation of shareholder wealth. The model uses the variables of capital budgeting, financial planning, goal setting, performance measurement, shareholder communication, and incentive compensation to account in a proper way for all ways in which the corporate value may be added or lost (Rodov & Leliaert, 2002: 326). EVA is a comprehensive performance measurement tool which may be viewed as a modified version of the statement of comprehensive income. It involves subtracting operating expenses, taxes, and capital charges from net sales. The model is, thus, a measure of the surplus value created on an investment (Kannan & Aulbur, 2004: 405). It has been suggested that

EVA should be used as a substitute measure for the return on the intellectual capital of a company. However, the limitation of EVA is that it uses the book values of assets as the basis of calculations. Intellectual capital lacks book and individual market values and, therefore, their value is not included in the calculation (Marr & Spender, 2004: 21). Nevertheless, the surplus value created on an investment represents part of the value either generated or created by assets, namely, intellectual capital, that do not form part of the book values.

4.3.1.6 Value chain scoreboard

According to Martin (2004: 80) the value chain scoreboard is similar to the value added model which was discussed in the previous paragraph, with the difference that the value chain scoreboard uses both comparisons between a company's normalised earnings and the expected rates of return on the company's tangible and financial assets recorded on the statement of financial position. The value added model, on the other hand, uses the periodic earnings to determine the added value in a business. With the value chain scoreboard the normalised earnings are based on three years of historical core earnings, and three years of consensus analyst estimates. The comparison between these two figures is intended to ascertain the portion of normalised earnings for a given period that exceeds the expected return on book assets. This difference represents the earnings derived from assets not recognised in the books of a company. The value of the intellectual capital is then measured as the discounted present value of all future earnings from the intellectual assets. The challenge in respect of this measurement stems from the absence of a widely accepted expected rate of return for intellectual capital (Martin, 2004: 80). The value added scoreboard may be used as a substitute model for the value added model to measure the value of intellectual capital. These two models would attain similar results.

4.3.1.7 Market to net book value

At face value intellectual capital is measured as the difference between the market value and the book value of a company at a given point in time. However, it is not

possible to attribute this difference to the existence of intellectual capital alone. The reliability and usefulness of this model may be enhanced by converting it into a ratio and utilising a market to net book value ratio. A market to book value ratio compares two different types of valuations:

- the company valuation as reflected by the share price, and
- the book or accountant's valuation as reflected in the financial statements

The ratio is calculated by dividing the market capitalisation by the shareholder equity (Kannan & Aulbur, 2004: 405). A calculated ratio that is greater than one indicates that the company holds intellectual capital which is not recognised in the financial statements. A calculated ratio that is less than one suggests that the intellectual liabilities exceed the value of the intellectual assets (Abeysekera, 2003: 423). Market to book ratio has been criticised for the continued relationship with and the reference to a company's physical capital (Firer, 2003: 10). Studies on the topic have produced a number of measurement approaches that aim at synthesising the financial and non-financial information.

According to Housel and Nelson (2005: 548), the literature review indicates that most financial measures for intellectual capital display some of the following limitations:

- The intellectual assets must be valued as an aggregate, and may not be valued separately.
- Differences in the national industry, accounting standards, and policies result in a lack of comparability of value estimates.
- An inability to define either the degree to which intellectual capital assets contribute to the value creation of the company or the process by which they do so.
- Difficulty in estimating both the replacement value of the intellectual capital assets as well as their future cash flows or the risk and uncertainty associated with these cash flows.
- Difficulty in capturing path dependencies and asset synergies in value estimates.
- A lack of historical data available for benchmarking and forecasting.

Housel and Nelson (2005) are supported by Kannan and Aulbur (2004:391) who note that these limitations may be overcome by integrating financial measures with non-financial measures. The non-financial measurement models are discussed in detail in the next section. The above financial measures are currently used for internal reporting only and do not form part of the measurements as prescribed by the IASB although they are necessary in order to measure and report those underlying assets that drive the value creation process. In addition, their indicators assist investors and other stakeholders to make good investment decisions.

4.3.2 Non-financial measurement models for intellectual capital

In the previous sections the different financial measurement models that may be applied to measure the value of intellectual capital in a business were discussed. However, these measures have certain limitations and it is not possible to apply them to the different categories of intellectual capital. One of the reasons for this is the fact it is not possible to identify intellectual capital or to separate it from the business as a whole. Calculating a value for each category of these assets is, thus, problematic. In view of the difficulties in finding financial measures suitable for measuring the value of intellectual capital researchers such as Robert Kaplan and David Norton, as well as Leif Edvinsson (Starovic *et al*, 2005: 8–11), developed non-financial measures such as the balanced score card and Skandia navigator in order to balance the need to report on these assets and the challenges involved in measuring them. Accordingly, the information obtained using these non-financial measures complements the information disclosed in the financial statements. Certain of these non-financial measurements relate to measuring the different categories of intellectual capital, thus making it easy to report the value pertaining to each category.

Kannan and Aulbur (2004: 392–393) refer to the non-financial measures as perceptual, process and system measures. Perceptual, process and system measures refer, in turn, to the identification of those mechanisms by which value is created and transformed rather than accounting for the way in which the value of a company may be presented in terms of one number only. It is, therefore, about what creates value

and about how the resources of a company are composed and bundled in order to create value (Mouritsen & Larsen, 2001: 404). Perceptual and process measures are more qualitative than quantitative. Qualitative information is necessary to complement the quantitative information disclosed in the annual financial statements and, hence, the IASB (2009) has recently issued the Exposure Draft on management commentary (ED 2009/6).

Perceptual measures concentrate on the perceptions of employees and the need of employees for an effective knowledge measurement system. These perceptions include employee perceptions of top management commitment, the need for knowledge sharing and knowledge management, as well as perceptions of the value addition and of equitable reward structures. Process and systems measures involve the establishment and mapping of current processes as well as the predicting of future performance and infrastructure needs (Kannan & Aulbur, 2004: 393). In view of the fact that perceptual measures deal with knowledge and skills management they are clearly the most suitable measures with which to measure human capital while process and systems measures are more suited to the measurement of structural and relational capital.

The studies on intellectual capital measurement have produced a number of measurement approaches that aim at synthesising the financial and non-financial information. The measures developed include the balanced score card, Skandia navigator, value chain scorecard, and human capital accounting. Effective non-financial measures of intellectual capital will complement financial measures, provide both a feedback mechanism for actions and the information to develop new strategies, assist in weighing different courses of action, and enhance the management of the organisation (Holmen, 2005: 2). Non-financial measures of intellectual capital, in turn, provide information that will assist potential investors and other stakeholders as well as other users of the information, to make informed financial decisions relating to the company.

4.3.2.1 Balanced scorecard

The existence of intellectual capital in a business is best described in a narrative way than by applying financial and accounting models. This is mainly as a result of the challenges involved in identifying and measuring the individual values of these assets. The nature of intellectual capital allows for aggregate measurement only. The search for non-financial measurement that is relevant to the value of a company may be coordinated within the framework of the balanced scorecard. According to Rodov and Leliaert (2002: 325) the balanced scorecard model was developed in the early 1990s by Robert Kaplan and David Norton. The model provides management with useful information on value creation by means of the following four dimensions − financial performance, customer perceptions, internal processes, and internal learning and growth:

- Financial measures reflect the position of a company in terms of both its financial performance and its ability to improve shareholder wealth.
- Customer measures involve the measurement of increased customer value and the value delivered by new goods and services.
- Internal processes deal with and measure operational excellence, customer intimacy, and product leadership. It is not the assets per se that create value but rather the deployments and configuration of these assets as well as the interactions between these assets and the transformation process from inputs into outputs.
- Learning and growth measures involve the measurement of the innovative abilities of the company's employees, their competencies and the corporate culture.

The balanced scorecard enables companies to track their financial results while simultaneously monitoring their progress in both building the capabilities and acquiring the intellectual capital they would need for future use. The model thus links the company's past and present with its future (Rodov & Leliaert, 2002: 325). In addition, it takes into account the strategic, financial and operational position of the organisation.

As part of the corporate strategic assets intellectual capital is linked to the balanced score card through the company's overall strategy. The model also takes into account all three categories of intellectual capital. The link between intellectual capital and the overall strategy of the company is depicted in figure 4.1 below.

Figure 4.1 depicts the way in which intellectual capital fits into the overall corporate strategy of a business and it also translates the strategy into four areas, namely, financial, customer, business processes, and learning and growth perspectives. The left side of the figure shows the performance indicators of relational capital with the right side showing the performance indicators of human capital. The performance indicators of structural capital are shown at the bottom of the diagram. The centre of the diagram links the three categories of intellectual capital and the four balanced scorecard perspectives − the customer (external) perspective is linked to relational capital, the learning and growth (human resource) perspective is linked to human capital, and the business processes to structural capital. The financial perspective of the balanced score card is above all three of the other perspectives as it supports all these areas. This perspective is represented by the information disclosed in the annual financial statements, while the performance indicators relating to the financial perspective are also reflected in these statements. The financial perspective is not directly linked to any of the three categories of intellectual capital although it is linked indirectly through both the overall corporate strategy and through the other three balanced score card perspectives.

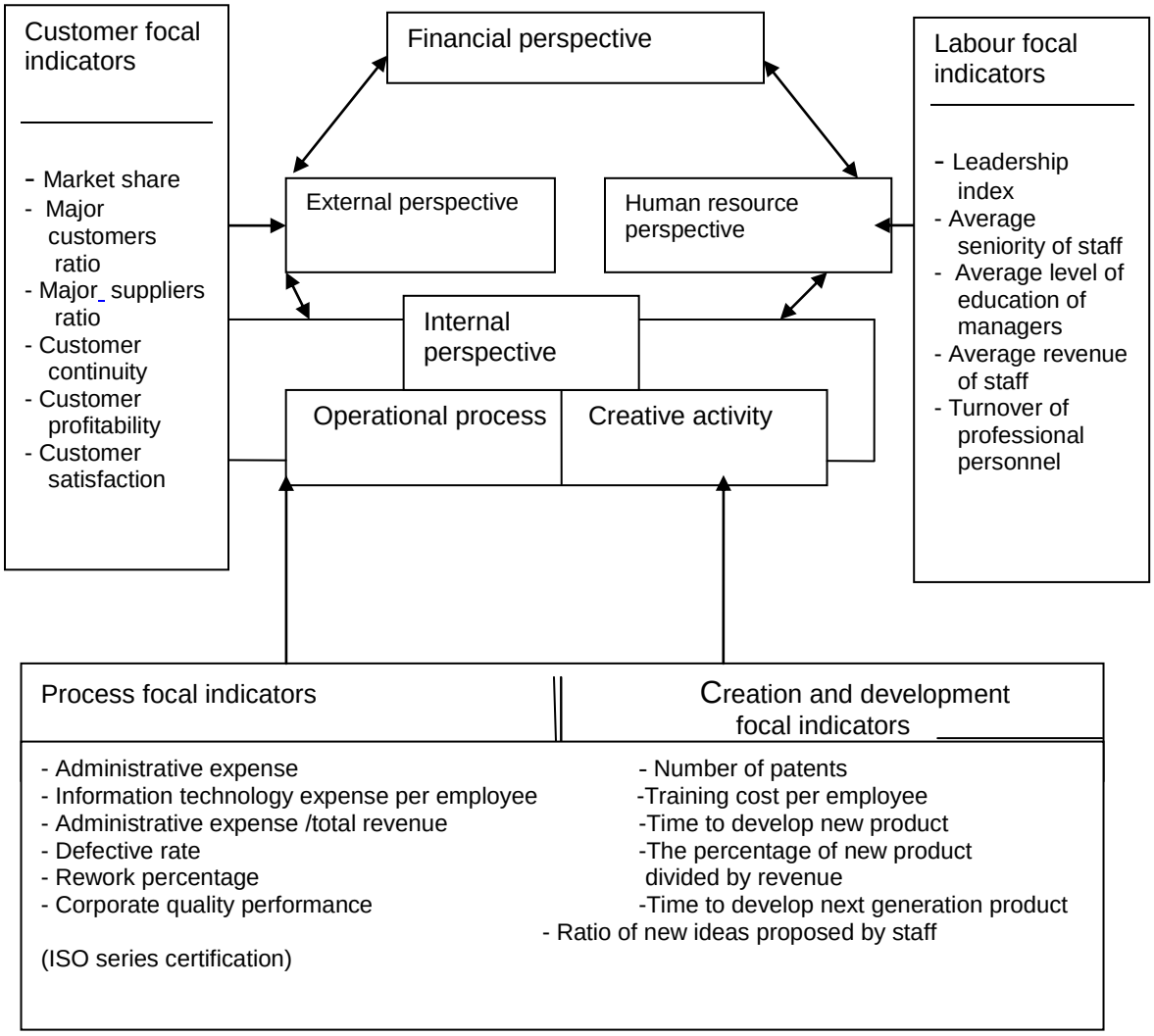


Figure 4.1 Integration of balanced scorecard perspective with intellectual capital

Source: Liang & Yao, 2005: 137

Figure 4.1 reveals that the effective deployment of all the assets of a company, including the intellectual capital, will create value. The use of the integrated balanced score card identifies both value drivers and the appropriate measures. A key feature of the integrated balanced score card is that none of the individual metrics are considered in isolation with the four perspectives of the balanced scorecard being used by managers when they implement performance measurements and strategic management. However, apart from the financial perspective, the other three perspectives are not associated with any general measurements for practical

application (Murby, Goud & CIMA, 2005: 4–6). As a result of the fact that the model is more context-specific it is suitable for internal reporting and strategic management.

The balanced scorecard differs from other models in that it contains outcome measures as well as the performance drivers of these outcomes, all linked together in cause-and-effect relationships. The financial perspective of the balanced scorecard is used to measure the financial performance of the company by utilising the financial data presented on the financial statements as well as financial performance measurement techniques such as EVA and Return on Investment. This financial perspective reflects both reported value and the ability of the organisation to create shareholder wealth. In addition, it includes both tangible as well as those intangible assets which are recognised in the annual financial statements (Liang & Yao, 2005: 137). Accordingly, the financial perspective of the balanced score card is indirectly linked to intellectual capital and it supports the value creation process.

Intellectual capital, as represented by relational capital, may provide general indicators such as customer satisfaction, suppliers, distribution channels, and other external relationships. However, the customer perspective of the balanced scorecard places more emphasis on the customer's point of view. Liang and Yao (2005: 137) extend the customer perspective to include other relationships and to render the measurement more comprehensive. The concept of intellectual capital and the value creation process as represented by structural capital is the same as the internal perspective of the balanced scorecard. The learning and growth perspective of the balanced scorecard emphasises the human capital aspect of intellectual capital (Liang & Yao, 2005: 137). A comparison between the definitions of intellectual capital in terms of the three categories and financial capital highlights the way in which the balanced scorecard may be used to measure intellectual capital (Holmen, 2005: 3). The model is comprehensive and contains information on all the categories of intellectual capital and on the overall performance and position of the organisation concerned. This makes the model an ideal model to complement the annual financial statements and to account for every function, asset, and process in the value chain.

The balanced score card model retains financial performance measures and, in addition, supplements them with measures that take into account customers, internal processes, and learning and growth (Cronjé, 2008 100–101). However, apart from its ability to measure financial performance and strategic management the balanced scorecard model lacks the general measurement ability needed for assessing a company within its specific industry and, therefore, lacks comparability (Liang & Yao, 2005: 136–137). Nevertheless, the balanced scorecard does provide the users of corporate annual reports and other stakeholders with crucial information on both the value creation process and the strategic position of the organisation. In addition, the model is the ideal measurement model to measure the value of intellectual capital as it includes all areas including the strategic position of the business. Its use explains the links in business processes and the total assets of the company.

4.3.2.2 Skandia navigator

Another non-financial measure of intellectual capital is the Skandia navigator. This model is similar to the balanced scorecard model and it links past measures to current and future measures. The model suggests that there is a room for new developments in the current measurement models. Like the balanced scorecard the Skandia navigator model links intellectual capital to the strategy of the business.

The Skandia navigator was developed in 1994 by Leif Edvinsson who was a corporate director at Skandia in the 1990s. The model depicts the presence of tangible and intangible assets, and the transformations of these assets in accordance with the company's strategic objectives (Marr et al, 2004: 22). In other words, the model provides management with information on both the value creation process and the link between financial and non-financial information in this process.

The Skandia navigator, like other non-financial models, is context-specific, and it limits comparisons over time and between organisations (Hunter et al, 2005: 2). Despite the fact that the model was developed specifically for one company it may be used by any companies to measure the value of intellectual capital.

Figure 4.2 below depicts the way in which the Skandia navigator model links the intellectual capital to the overall strategy of a business.

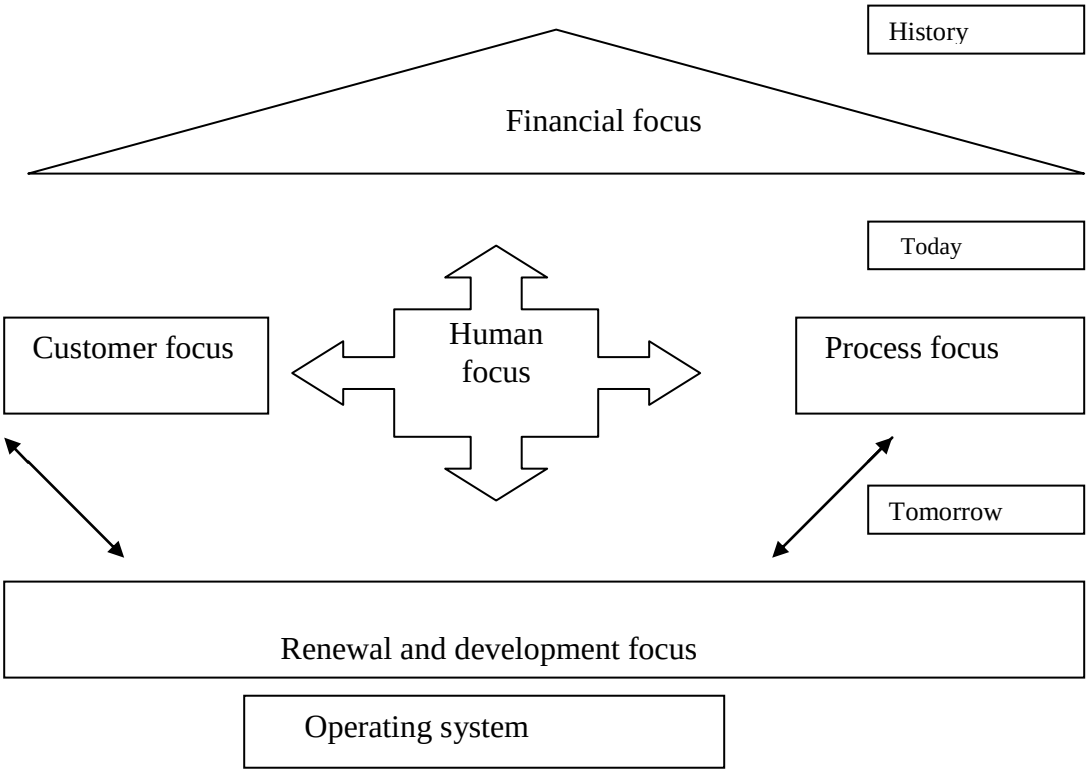


Figure 4.2 Skandia Navigator
Source: Starovic et al (2005: 11)

The Skandia navigator depicted in figure 4.2 above reflects five key dimensions of the business. These five key dimensions are similar to those identified in the balanced score card, namely, financial focus, customer focus, process focus, human focus and renewal and development focus. To the four key business dimensions highlighted in the balanced scorecard the model adds a human perspective. Each area visualises the value creation process and the link between the five performance perspectives.

According to Starovic *et al* (2005: 11) the Scandia navigator model takes the market value of the company and proposes to divides it into the financial capital and intellectual capital as reflected in the four key dimensions. The navigator is perceived as a house with the financial focus as the roof, the customer and process focus represent the walls, the human focus the soul of the house and renewal and development the platform. The indicators that are used for the financial focus are largely represented in monetary terms with the customer focus tending to assess the value of the relational capital to the company which makes use of both financial and non-financial indicators. The process focus emphasises the effective use of technology within the company (Marr *et al*, 2004: 555–556). The process focus is linked to structural capital and the human focus to human capital.

In addition, the Skandia navigator model suggests that, in the past, the performance measurement of a business was based on financial information only. The other areas of the business were not measured. The model further suggests that, although not utilised to the full, performance measurements currently include customer and other relations, human resources and business processes. There are developments afoot to improve the current performance measures for future reporting and, thus, the renewal and development focus is critical for sustainability.

4.3.2.3 Human resource accounting

The need to measure intellectual capital has resulted in the development of a number of financial and non-financial measurement models. Researchers in the past had developed models that were aimed at measuring the collective value of intellectual capital. However, in view of the fact that the individual intellectual capital categories are interlinked, these models were not suitable to measure these individual categories.

The development of human resource accounting, although not widely used, was a breakthrough in the measuring of human capital. In addition to describing the financial accounting aspect of capitalising the expenditure incurred in respect of recruitment, training and development, the objective of human resource accounting is to quantify

the economic value of the human capital of a company. The model involves estimating the probability of staff exit together with probabilities in respect of promotions, mortality and future wages. According to Starovic *et al* (2005:18) human resource accounting relies on human capital alone and, although it is possible to determine with some degree of certainty salaries and wages, and the costs of recruitment and training, it is, nevertheless, difficult to place a value on the accumulation and growth of knowledge. The human resource accounting is used for internal reporting in order to provide feedback to the management of a company in respect of the attainment of its strategic goals. Human resource accounting also serves as a starting point to develop future plans and strategies by recognising the core competencies inherent in the company's intellectual capital. The use of human resource accounting will, therefore, assist in the development of the strategies necessary for key staff retention.

Human resource accounting involves, inter alia, using such models as human resource return on investment and the executive scorecard. The human resource return on investment depicts the value delivered by employees, that is, the return for every monetary unit invested in the human resource costs. As in the case of any other financial performance measure it is essential that the human resource return on capital be measured and tracked over a period of time so that its predictive value in terms of forecasts and budgets may be realised (Chua, 2006: 2). The human resource accounting model is based on a number of assumptions, and its measures tend to be subjective and to lack reliability. This subjectivity and unreliability surrounding the human resource accounting model means that it is not suitable for external reporting (Chen, Zhu & Xie, 2004: 199). The human resource accounting model is relatively new and may be used for internal reporting.

4.3.2.4 Intangibles asset monitor

Intellectual capital may also be referred to as intangibles and, in some cases, these terms are used interchangeably. The view that intellectual capital comprises a sub-set of intangibles is adopted in this research. A number of non-financial models were

developed to address the challenges in respect of the inability to measure intellectual capital with the intangibles asset monitor being one of these models.

The intangibles asset monitor refers to intangible assets rather than intellectual assets, and it is internally focused. This model aims to measure intangible assets in a simple fashion and it includes a number of relevant indicators for measuring intellectual capital. The purpose of the monitor is to obtain a broad picture on the intellectual capital of a company (Rodov & Leliaert, 2002: 325). The model presents three distinct indicators of intellectual capital:

- external structure
- internal structure
- individuals' competences (Rodov & Leliaert, 2002: 325).

The model divides the measurement of intellectual capital into three measurement groups which reflect growth and renewal, efficiency and stability (Kannan & Aulbur, 2004: 404–405). The three distinct intellectual capital indicators identified by the intangibles asset monitor are similar to the three types of intellectual capital which were identified in chapter two. The model, therefore, measures intellectual capital as a group, and not individually in terms of its categories.

As in the case of relational capital, external structural indicators consist of relationships with customers and suppliers, brand names and reputation. Internal structural indicators, on the other hand, consist of patents, concepts, systems, and culture − similar to the structural capital. Individuals' competencies refer to the ability of people to take action in various situations, and include skills education, experience and values. These indicators are similar to the human capital intellectual capital category.

The intangibles assets monitor model provides a scorecard of the intellectual capital strengths and weaknesses of a company (Kannan & Aulbur, 2004: 404–405).The model is used as a management and communication tool rather than as a valuation tool and is a qualitative measure of a company's performance. The limitation in respect of this model is the fact that it is not clear how the model may be integrated into other

broader performance measurement frameworks in order to establish a link between intangible performance drivers and performance outcomes (Marr *et al*, 2004: 561). The model may, however be used to complement the financial information and to provide a broader picture of the performance of a company. The integration of financial measures with non-financial, qualitative measures will assist in the accounting of every individual function in the value chain, and it will also help in the identification of the key factors which may influence the effectiveness of the intellectual capital.

4.3.2.5 Knowledge assets map

Intellectual capital may also be referred to as to knowledge assets. Knowledge assets include human capital, structural capital and relational capital. These knowledge assets may measured by using a model termed the knowledge asset map model. This model provides a framework that allows a company to identify the critical knowledge areas within the company and it provides the managers with a broader framework of organisational knowledge from both an external and an internal perspective. The model is based on the interpretation of the company's intellectual assets as the sum of human capital, structural capital and relational capital. However Marr et al (2004: 561) refer to stakeholder and structural capital only with stakeholders referring to all parties with an interest in the organisation – stakeholders include both customers and employees. Stakeholder capital may, in turn, be divided into customer relations and human capital.

The knowledge asset map helps to identify intellectual assets and may constitute the basis for representing the way in these assets are interrelated and may be transformed in order to satisfy stakeholder needs. In addition, the model may be used to visualise the static and dynamic nature of intellectual capital and the value creation process (Starovic *et al,* 2005: 10). The use of the knowledge assets map will assist the users of the information to understand how the company uses its intellectual capital in the value creation process.

4.4 Recognition of intellectual capital

The cost of an item is recognised and disclosed in the annual financial statements, either in the statement of comprehensive income or in the statement of financial position, based on the minimum requirements set by the IASB for the presentation of financial information (IASB, 2010: A291). The cost of acquiring intellectual capital should, therefore, be recognised in the financial statements if the financial statements are to meet these requirements.

4.4.1 Recognition of intellectual capital in the statement of financial position

Internally generated intangible assets not recognised in the annual financial statements lack identifiability requirements and, thus, do not pass the recognition test for an asset. IAS 38 further notes that, in some cases, expenditure is incurred in order to generate future economic benefit but it still does not result in the creation of an intangible asset that meets the recognition criteria. Such expenditure is classified as an internally generated goodwill (IASB, 2010: A845). Financial reporting operates around strict requirements that are statement of financial position biased. The process of recording a transaction in the accounting records commences with an analysis of its nature for the purposes of the statement of financial position recognition. Any item that does not meet the statement of financial position recognition requirement is immediately expensed in the statement of comprehensive income.

The standard (IAS 38) also prohibits the recognition of internally generated, intangible assets which are represented by such items as internally generated brands, customer lists, mastheads, professional expertise, the quality of human capital, and other items of similar substance. In most cases these assets form part of the internally generated goodwill. It is, however, not possible to distinguish the future economic benefits that arise from internally generated intangible assets from the future economic benefits that arise from internally generated goodwill. (IASB, 2010: A845). The only time that internally generated intangible assets are recognised is when they are purchased in a business combination and classified as purchased goodwill or when mergers are

evaluated (IASB, 2010: A838). The IASB (2010: A779–A782) requires that this goodwill be tested for impairment annually and that additional impairment testing should be done if circumstances such as the following arise:

- loss of key personnel
- unanticipated competition
- changes in legal factors
- changes in the business climate
- adverse action on the part of a regulator
- the expectation that a reporting unit may be disposed of − this includes a change in company name

The above is an indication that a change in business circumstances affects the value of the human capital, and structural and relational intellectual capital (Seetharaman, Screenivasan, Sudha & Ya Yee, 2006: 341–350).

The accounting standard IAS 38 states that, in order to recognise an intangible asset apart from goodwill, on the financial statements the asset must meet one of two or both of the following criteria − the contractual or legal criterion and the separability test (IASB, 2010: A838). However, intellectual capital does not meet any of these two requirements although this challenge does not mean that these assets may not be recognised and disclosed elsewhere in the corporate annual reports.

According to the draft Code of Governance Principles for South Africa (IOD, 2009: 103), also known as the King III report, and issued by the Institute of Directors in South Africa (IOD), the market capitalisation of a company listed on the JSE is equal to its economic value, and not to its book value. The economic value of a company takes into account information not included in the financial statements such as future earnings, brand, the quality of directors and management, reputation and strategy. However, this information is used by investors to assess the economic value of a company for their investment decisions (IOD, 2009: 15). As indicated above JSE LTD lists the values of companies' values are based on the economic value of the business. This disclosure is a good

indicator of the importance of communicating the true value of a company to current and potential investors. According to Liang and Yao (2005: 137), the performance indicators that contribute to the economic value of a company form part of the three categories of intellectual capital. Performance indicators for human capital include leadership index, average level of education of managers, and turnover of professional staff. Structural capital performance indicators include, inter alia, the number of patents, corporate quality performance product (e.g. SO series), ratio of new ideas proposed by staff, and the percentage of new products divided by revenue. Performance indicators for relational capital include market share of the company, major customer and supplier ratios and customer profitability ratios. The abovementioned performance indicators are linked to each category of intellectual capital and inform the users of information of the true value of the business.

4.4.2 Recognition of intellectual capital in the statement of comprehensive income

The cost of intellectual capital is accounted for and disclosed as part of the administrative costs or as part of the operating costs of the company. These costs form part of cash outflow and may regarded as a depletion of assets (IASB, 2010: B1726). These costs contribute to the generating of revenue for a business.

The IASB (2010:B1726) defines expenses in the Framework as "*decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrences of liabilities that result in decreases in equity, other than those relating to distributions to equity participation".*

The IASB (2010: A849) requires that expenditure on an intangible asset be recognised as an expense when it is incurred unless the expenditure forms part of either the cost of an intangible asset that meets the recognition criteria or an item that forms part of the business combination assets that are part of the acquired goodwill. This means that any expenditure which is incurred in order to produce any form of intellectual capital is

immediately expensed if it does not meet any of the above conditions even if it was incurred in order to provide future economic benefits to the company. The main reason for expensing this expenditure is the fact that that no asset is being created that may be recognised.

Based on the IASB definition of an expense above the cost of intellectual capital may be recognised as a decrease in economic benefits in the form of outflows or a depletion of assets. It is, therefore, immediately expensed in the period in which it was incurred on the statement of comprehensive income. This cost is regarded as a cost of doing business in order to generate revenue and although it is, thus, impossible to trace the cost back to the book value of the company the cost may, to some degree, be traced back to the value of the product or service which the company either produces or renders. Intellectual capital categories, their attributes and, sometimes, their performance indicators are used as the main account description for cost allocation, for example, human resource or employee costs, research and development costs, and communication costs. Some of these costs are disclosed in table 4.1 above.

The costs of infrastructural capital and its attributes are not easily traced to the book value of a company and are, therefore, not recorded anywhere in the annual financial statements. Unlike the cost of human capital which refers to the cost incurred to use, improve and retain the skills and competencies embedded in individuals, the cost of structural capital forms part of the business processes and cannot be traced through an individual transaction (Hunter *et al*, 2005: 2; Holmen, 2004: 4). Infrastructural capital is, by its nature, supported by human capital, and its cost is absorbed by the cost of the human capital.

However, although both research and development and the establishment of network systems are performed by the human capital, human capital research and development cost may be traced and expensed immediately on the company's statement of comprehensive income under a separate account allocation. Companies spend a considerable amount of money on researching and developing a product. This cost of

researching a product or service may be traced to that product or service through internal reporting only and then only by applying product life cycle costing. However this cost is not used to value the relevant product for disclosure on the statement of financial position of a company (CIMA, 2008: 351).

Research and development costs rise with an increase in the development of new products and services. Companies generally embark on the research and development of new products once every four to five years. It is, therefore, difficult to report on the extent of this cost without taking into account the research and development activities of a company. However, when companies start researching and developing new products, they spend more of their financial resources in order to complete the project. Nevertheless, the introduction of a new product will, ultimately, contribute a great deal to the value of a company (CIMA, 2008: 351). Companies that continuously introduce new products to the market achieve a competitive advantage over their rivals as these new products increase the value of the company as perceived by the market.

Unlike the cost of structural capital (excluding intellectual property) the cost of most relational capital attributes may easily be traced either through a transaction or through the fair value of the award credits in the case of Customer Loyalty Programmes in terms of IFRIC 13 (IASB, 2009: A1066). Other costs in respect of relational capital include communication, marketing, advertising, selling, distribution etc. The extent of these costs is reported and expensed immediately on the statement of comprehensive income, although some may be deferred, and reported in the statement of financial position.

4.5 Intellectual capital disclosure

The different users of financial information have different needs and, thus, financial reports are prepared in such a way as to satisfy these different needs. These different users include employees (including management), suppliers, customers, current and potential capital providers, government and the general public. These users may be grouped into internal and external users of information with the grouping influencing the

type of information to be disclosed by an organisation (Cronjé, 50: 2008). Accordingly, financial information is prepared for both internal and external reporting purposes.

According to Cronjé (2008: 112–116), there are two areas of disclosure in respect of company information with one being based on the information produced by the mandatory financial information system (MFIS) as required by the various statutory bodies, and the other comprising the discretionary information system (DIS). In other words, the MFIS generates mandatory information while the DIS generates contextual information based on the information needs of the different users (Cronjé, 2008: 112–116). In addition, companies disclose information that supports their strategic objectives in their corporate annual reports. As a strategic asset intellectual capital is used by some companies as a marketing tool to promote and enhance the reputation of the company. Companies also include intellectual capital attributes and performance indicators in their internal reports in order to assist management in their decision making role.

In September 2008, the IASB and the FASB invited comments on the Exposure Draft (ED) on both “The Objectives of Financial Reporting” and “Qualitative Characteristics of Decision-Useful Financial Reporting Information”. This ED proposes that the purpose of financial reporting is to provide financial information that is useful to investors and lenders, as the primary stakeholders, in making decisions in their capacity as capital lenders. The scope of financial reporting is, thus, broader than just the financial statements, and includes information about the management stewardship of an entity’s assets (The Joint IASB-FASB Exposure Draft, 2008:23). In addition to the capital providers financial reporting is also aimed at all users of information about an entity’s business and operations. This requires, in addition to financial statements, the disclosure of other financial information. Accordingly, information on an entity’s financial performance and operations is disclosed in the corporate annual reports.

In June 2009, the IASB also issued, and invited comments on, the Exposure Draft, ED 2009/6 on “Management Commentary” to accompany financial statements prepared in accordance with IFRS. One of the proposed principles for the preparation of management commentary is a report on the way in which those resources that are not

presented in the financial statements may affect the performance of an entity (IASB, 2009). The ED also proposes that management commentary should include information that complements the financial statements, including information on relationships with major customers, and performance measures and indicators. However, it is essential that consistency in the reporting the performance measures and indicators be maintained in order to enhance the comparability of information within the industry (IASB, 2009: 9–16). The issue of this Exposure Draft paves the way for companies to report information on their intellectual capital. The proposed information that should be disclosed or presented in management commentary is similar to that which would be contained in the strategy document of the company. This ED will provide a balance between internal and external reporting.

The disclosure of information in the corporate annual reports may be either mandatory or discretionary. Mandatory disclosures are governed by statutory and rule-making bodies and legislation including the Companies Act, the IASB, and the JSE LTD. The discretionary disclosures are, inter alia, determined by the strategic objectives of the company and the needs of the different users of information. However, compliance with the disclosure requirements of the Code of Governance is mandatory for all companies listed on the JSE and companies would be required to explain reasons for any non-compliance with the code (IOD, 2009: 5).

Rule-making bodies set standards, principles and laws on what and how information should be both generated and disclosed for the purposes of annual reporting. The MFIS and the DIS are the two systems used by companies to generate information for reporting in terms of the requirements of these rule-making bodies. The IASB is primarily concerned with information generated by the MFIS which, in turn, generates statutory disclosures governed by IFRS and IAS (Cronjé, 2008: 62). However, the JSE is concerned with information generated by both the MFIS and the DIS. In other words, the JSE is more concerned with governance matters, and with both statutory and discretionary disclosure requirements. The King III Report (2009: 10) has highlighted a link between good governance and law. According to Li, Pike and Haniffa (2008: 139), corporate governance comprises a framework of those legal, institutional and cultural

factors which shape the patterns of influence that stakeholders exert on management decision making. The board of directors of a company is actively involved in the communication of financial and operational information to other stakeholders. In addition, Li et al (2008:139) are of the opinion that the governance structures of a company should influence and improve the quality of communication to other stakeholders. The information provided to these stakeholders should include information on the corporate value creation process (Li *et al*, 2008: 139–140).

Companies listed on the JSE are required to conduct themselves and report their performances in line with the King I, II and III Reports. The disclosure checklist of the King III report highlights the fact that a company should include in their reports any information needed by an investor in order to make an informed assessment of the company's economic value (PwC, 2009: 1). As indicated in the previous paragraph the economic value of a company includes value not disclosed in the annual financial statements such as the value of intellectual capital. The requirement in terms of the new King Report means companies will have to report information on their intellectual capital.

The King III (IOD, 2009: 103) Report refers to annual corporate reporting as integrated sustainability reporting and disclosure. In terms of this draft code reporting should be integrated across all areas of performance reflecting strategic decisions taken by a company. One of the Code of Governance principles refers to the importance of effective communication with stakeholders. According to the King III report successful companies recognise that the principle of reporting non-financial information is critical (IOD, 2009: 8). However, the sustainability parameters set by the King Report are not standardised and, thus, it is essential that the performance indicators reported be explained. According to Bukh (2002: 53), the report on intellectual capital should communicate management understanding of the company's strategy and value creation and not disclose performance indicators of general interest only.

Companies should, therefore, use the disclosure requirements of the King II and King III Reports as an opportunity to communicate the value creation process and the existence of intellectual capital within the organisation. Corporate Annual Reports are used as a

basic tool for the effective communication of company information and overall performance to stakeholders and other users of company information (Barac, 2003: 2). As a result of the challenges in respect of disclosing this information on intellectual capital under statutory disclosures discretionary disclosures should be used to do this.

The diagram below illustrates the way in which information is disclosed in Corporate Annual Reports.

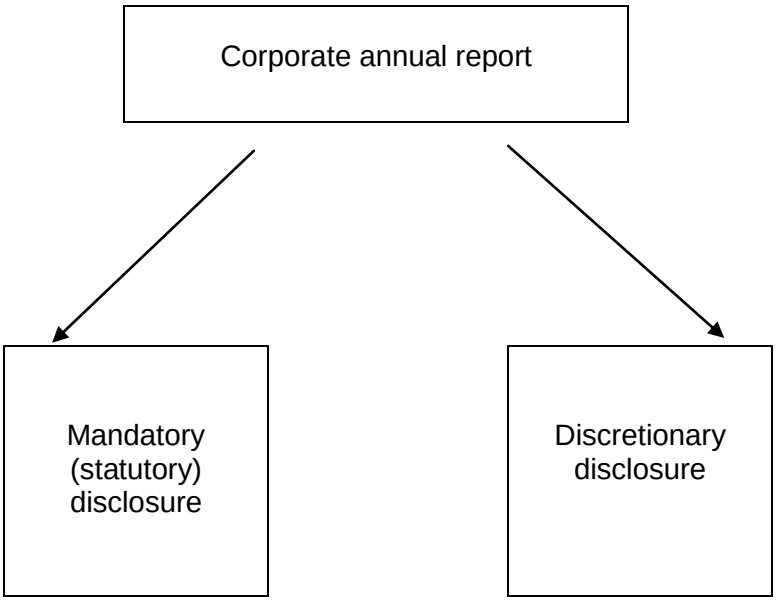


Figure 4.3: The disclosures in corporate annual reports

Source: Stanton & Stanton (2002: 479)

Bornemann and Leitner (2002: 9-16) identify a reporting model that was developed by the Australian Research Council (ARC). This model is known as the ARCIC Model and it clearly depicts the process from the development of strategy of the company to the acquisition, application and use of intellectual capital (human, structural and relational). The end product of this process is financial and non-financial results. This process and its results should be reported to all relevant stakeholders according to its nature, target

group, disclosure requirements (mandatory or discretionary), the extent intellectual capital assists in decision making and its validity (Bornemann & Leitner, 2002: 7–16).

4.6 Intellectual capital and internal reporting

In the previous chapters the accounting for intellectual capital from an external reporting perspective was discussed. The different models that may be used to measure the value of intellectual capital in a business were discussed in this chapter. However, although these models may be used to measure intellectual capital their nature means that these assets do not meet the measurement, disclosure and requirements set by the IASB (2010, A839–A857). Management accounting and internal reporting offer a solution to the challenges encountered in reporting the existence of intellectual capital in a business. Using the measurement models discussed in this study would mean that reporting on the contribution of intellectual capital to the value creation process within a business and the performance of these assets may be used for strategic and management decision making purposes.

4.6.1 Comparison of information produced for external and for internal reporting

Those financial reports which are prepared for external reporting are produced for all the external stakeholders of a company, namely, the capital providers of the company. Management accounting or reports for the purposes of internal reporting, on the other hand, are produced solely for the internal stakeholders, namely, executive and line management, and other employees of the company. Both external reporting and internal reporting financial information is based on the information produced by the mandatory financial information system (MFIS) discussed above. The differences between financial and management accounting arise from the differences inherent in the major users of the information generated by these two disciplines. In addition to using the information

which is produced based on MFIS, management accounting also uses information which is produced based on the discretionary information system (DIS).

Information produced for external reporting must comply with the requirements of IFRSs and IASs as set by the IASB. The IASB has set strict requirements that must be met by companies in order to ensure that the quality of this information is of a high level and, thus, the objectivity, comparability and verifiability of financial information is emphasised. The disclosure of financial information for external reporting is mandatory and must be reported in the manner required by the IASB.

Management accounting takes the information produced based on MFIS and analyses it further in order to arrive at different conclusions given different scenarios. In most cases, management accounting uses the financial information which is produced based on MFIS and either combines it with or compares it to non-financial information for decision making purposes. The emphasis in management accounting is, thus, on the relevance of the information. Information on intellectual capital is more relevant and critical for strategic decision making although, as discussed in the previous chapters, it lacks verifiability and comparability (Garrison, Noreen & Brewer, 2006: 7–9). The application of management accounting measurement, valuation and reporting models in the accounting and reporting of information on intellectual capital is, therefore, recommended in order to complement financial accounting reporting. Management accounting, on the other hand, offers greater flexibility in reporting while it also uses historical information to assist in making decisions which may affect the future of the company (Garrison et al, 2006: 7–9). Management accounting is both suited and appropriate to addressing the challenges encountered in measuring and reporting the value of intellectual capital and its attributes by using both financial and non-financial measurement models.

4.6.2 Intellectual capital measurement and disclosure using internal reporting measurement techniques

As part of management accounting managerial finance plays a significant role in internal reporting. In section 4.2 above we discussed intellectual capital measurement models that may be used to measure the value of intellectual capital. However, models such as the Discounted Cash Flow and Value Added models are used for internal reporting purposes only. As discussed previously, DCF may be used to measure the value of intangible assets such as technology, software, customer relations, covenants not to compete, strategic agreements, franchises and distribution channels. In addition to valuing certain intangible assets the DCF model may also be used to evaluate mergers and acquisitions in order to determine the value of the business concerned. The results of these valuations are communicated in internal reporting reports only although extracts of these reports may be used as part of the reporting to the wider range of users of information and stakeholders. However, this is not a problem faced by companies listed on the JSE Ltd as their market values are reported publicly. It is recommended that those companies that are not listed use the discretionary disclosures in their corporate annual reports to communicate some of the information not disclosed in the annual financial statements.

4.7 Summary and conclusions

In this chapter the measurement and recognition of intellectual capital and the limitations associated with measuring these assets were discussed. These limitations, as well as the importance of reporting the value creation process and information on capital to capital providers and other stakeholders, have motivated an evolving dialogue on finding new ways in which to to measure and report on the intellectual capital of a company. Researchers such as Leif Edvinsson, Robert Kaplan and David Norton developed non-financial measurement models both to measure and to assist in reporting the value of the intellectual capital that exists in a business. Some of the non-financial models developed, such as the balanced scorecard and the Skandia navigator, were explored in this chapter. It was demonstrated that the use of these models complements the

financial reporting to users of information. The non-financial measures were also linked to the three categories of intellectual capital, namely, human, structural and relational capital.

The financial measurement models that are currently used for business valuation during business acquisitions and mergers, and for internal reporting purposes, such as the DCF and the market to book models, were also discussed. The importance of reporting information that is useful to both potential and existing capital providers, as well as to other users of information for decision making purposes was emphasised in this chapter. The two kinds of disclosure suggested by Cronjé, namely, the mandatory and discretionary disclosures of company information necessary for users of this information, were discussed in order to highlight the alternative ways of reporting information on intellectual capital. The fact that annual financial statements form part of the overall financial reporting, as described in the ED on “The Objectives of Financial Reporting” and “Qualitative Characteristics of Decision-useful Financial Reporting Information”, in respect of the value of intellectual capital on the other part of overall financial reporting, namely, discretionary disclosures, was discussed.

This need to report the information on intellectual capital, as well as ways in which to report it, are supported by the reporting requirements of the King Reports, with specific reference to the King III Report of 2009. These requirements were discussed together with the two systems that generate the information necessary for the two kinds of disclosures, i.e. mandatory and discretionary disclosures. The importance of Corporate Annual Reports as a tool to communicate this information, including information on intellectual capital, was also discussed.
The chapter briefly explained that, despite the fact that it is not possible to trace some of the intellectual expenses through a single transaction, their incurrence may be explained through the incurrence of other intellectual capital costs as these assets and their costs do form part of the business processes costs.

The difference between the information produced for financial and for management accounting reporting purposes was also briefly discussed. The discussion revealed the

relevance of management accounting in reporting the existence, value and performance of intellectual capital in a business. It was recommended that measurement models, which are used to measure both the value of a business during mergers and acquisitions and in internal reporting, should be used and the information generated communicated in the corporate annual reports in order to report the value of the business, including the contribution of the intellectual capital in the value creation process, to all stakeholders.

It was also shown in the chapter that, although the cost of intellectual capital is immediately expensed and regarded as a reduction in the asset value (cash and cash equivalents) the cost incurred in respect of these intellectual capital assets and their attributes contributes to the market value of a company. It was also shown that the management accounting discipline may be used as a platform from which to report the value of the intellectual capital in a business. In view of the fact that it is not possible to measure the value of intellectual capital using financial accounting measurement tools, management accounting does help to bridge this gap and it offers a solution to the challenge of intellectual capital measurement.

In order to be able to improve their current and future operating and market-based performance, companies should not rely on financial accounting-based performance indicators and information only. Management accounting-based performance indicators and information should be used for decision making in respect of the future performance of a company, and the direction the company intends to take.

The conclusion was, thus, drawn that measuring, recognising and disclosing information on intellectual capital is not limited by the requirements in respect of statutory disclosures. Financial statements come under mandatory disclosures and are, therefore, part of the many disclosures that are discretionary in the reports which a company uses to communicate information to the users of that information. Accordingly, companies should be encouraged to use these discretionary disclosures to communicate information on intellectual capital.

CHAPTER 5

RESEARCH METHODOLOGY

5.1 Introduction

This chapter presents the research methodology used in this study to research intellectual capital reporting by South African companies. The chapter first describes content analysis as the research technique used, and its relevance to the study. This is followed by a discussion on the content analysis framework used. This content analysis was performed on the corporate annual reports of the top 40 South African companies listed on the JSE Ltd in 2009 and based on market capitalisation.

5.2. Content analysis

The content analysis research method that was used in this study involves the analysis and recording of the contents of corporate annual reports. Cronjé (2008: 140–141) describes content analysis as studies that analyse and record the content of documents and other forms of texts. Krippendorff (1980: 21) defines content analysis as "*a research technique for making replicable and valid inferences from data to their context".*

Accordingly, the content analysis research technique refers to the analysis and definition of data by the researcher or the analyst in order to draw inferences on the research subject. It is a technique that may be used when the researcher is faced with large volumes of data and the data presented to either the analyst or the researcher is not within context. The researcher will then construct the data context based on his/her knowledge of the conditions surrounding the data (Krippendorff, 1980: 21–31). Sonnier, Carson and Carson (2008: 67) describe content analysis as a standard methodology that allows researchers to identify key words amidst large volumes of

text. Content analysis should be able to answer certain questions although, at the same time, it might raise new questions that may stimulate new or further research on the subject concerned. In this study, the content analysis will determine whether or not the top 40 companies listed on the JSE do, in fact, report the existence of intellectual capital as well as other information relating to these intellectual capital assets and, if they do, in what way they report this information in their corporate annual reports. The research involved reading the corporate annual reports of each of these companies and then recording or coding the information contained in these reports within a selected framework. The framework used was based on the three categories of intellectual capital, namely, human, structural, and relational capital (see discussion in chapter 2 above) and their attributes and performance indicators.

According to Sujan and Abeysekera (2007: 78), a number of studies using content analysis have been conducted in both developed and developing companies. The results and conclusions emerging from these studies revealed that the key components of intellectual capital were poorly understood, inadequately identified, inefficiently managed and inconsistently reported (Sujan & Abeysekera, 2007: 78). It is hoped that a content analysis conducted on the corporate annual report of the top forty companies listed on the JSE Ltd will give an indication of whether there has been an improvement in the reporting of these assets since the previous research studies.

Companies that are listed on the JSE Ltd are also required to report information, both mandatory and discretionary, in their corporate annual reports in terms of the Code of Governance Principles or King Reports. In terms of the King Reports reporting should be integrated across all areas of performance as well as reflecting strategic decisions taken by companies (IOD, 2009: 8)**.** Intellectual capital is one of the key drivers of the value creation process and, thus, adequate use and management of these intellectual capital assets should improve the performance of a company. In addition, as a strategic assets, intellectual capital also plays a significant role in the decision making process. Accordingly, reporting on their existence and the way in which they contribute to the value creation of a company meets the requirements of the King Reports.

As indicated in the previous paragraph the content analysis was conducted on the top 40 companies listed on the JSE Ltd in order of their market capitalisation while the information analysed was based on the list as at 12 May 2009. Information on companies listed after this date was, thus, not included in the analysis. The analysis involved reading the corporate annual reports of each of these companies, and recording the information contained in the reports that related to intellectual capital using the framework presented in Table 5.2 below. Any intellectual capital attribute not contained in Table 5.2 but mentioned in a corporate annual report is recorded under "Other Attributes". The intellectual capital performance indicators reported were also recorded. According to April *et al* (2003: 169) the content analysis methodology mentioned by involves the application of a level of subjective judgments It may also result in errors of omission as a result of the enormous amount of information contained in the annual reports.

The table below presents the list of the top 40 companies listed on the JSE in order of their market capitalisation and the sectors to which they belong as at 12 May 2009. It should be noted that, by the time this research is complete, there would have been a number of changes in the actual companies listed on the JSE and their ranking as some companies, such as Vodacom Ltd, were listed subsequent to this date. The reporting periods of the top 40 companies which were the focus of this study ranged from 30 June 2008 to 30 June 2009.

The corporate annual reports of these 40 companies were analysed in order to record any information reported on intellectual capital. The information was analysed using the three categories and their attributes. Intellectual capital performance indicators which are used to measure intellectual capital such as personnel cost/revenue, intellectual property/total assets, market share and marketing cost/revenue was also researched and reported. Some extracts from the annual reports were reproduced in order to illustrate the nature and extent of the reporting on intellectual capital and its attributes by the companies researched. The research also included comparisons

between the three categories of intellectual capital and their attributes. The comparisons between these three categories of intellectual capital are illustrated in the form of a graph in order to signify the importance of intellectual capital disclosure and to complete the representation of intellectual capital disclosure in corporate annual reports. According to Unerman (2000: 768), any content analysis that ignores pictures and graphics and suchlike is likely to result in an incomplete representation of the quantum of disclosures in corporate annual reports.

The intellectual capital attributes framework is depicted on Table 5.1 and discussed in section 5.2.1 below.

The framework used in the table below is taken from research of April *et al* (2003:167).

Table 5.1: The 40 largest South African JSE listed companies as at 12 May 2009

Rank	Company	Sector	Market Capitalisation (SAR-billions)
1	British Am Tobacco Plc	Tobacco	445.5
2	Bhp Billiton Plc	Diversified natural resources	425.3
3	Anglo American Plc	Mining holding and houses	279.5
4	SAB Miller Plc	Beverages	251.1
5	MTN Group Ltd	Telecommunications	206.1
6	Sasol Ltd	Chemicals, oil and plastics	193.3
7	Standard Bank Group	Banks, financial services	129.3
8	Anglo Platinum Ltd	Platinum	118.6
9	AngloGold Ashanti Ltd	Gold	111.4
10	Impala Platinum Holdings Ltd	Platinum	107.9
11	Compagnie Fin Richemont	Luxury goods (Jewellery etc)	88.4
12	Naspers Ltd	Pharmaceuticals	76.0
13	FirstRand Ltd	Banks, financial services	75.2
14	Gold Fields Ltd	Gold	73.9
15	Absa Group Limited	Banks, financial services	66.0
16	Telkom SA Ltd	Telecommunications	59.4
17	Kumba Iron Ore Ltd	Iron	59.4
18	Old Mutual Plc	Insurance, financial services	49.5
19	Nedbank Group Ltd	Banks, financial services	42.0
20	ArcelorMittal SA Ltd	Steel	40.7
21	Harmony G M Co Ltd	Gold	38.5
22	Sanlam Ltd	Insurance, financial services	38.2
23	Remgro Ltd	Diversified industrial	31.4

Rank	Company	Sector	Market Capitalisation (SAR-billions)
24	Bidvest Ltd Ord	Diversified industrial	31.4
25	African Rainbow Minerals	Diversified mining & minerals	28.3
26	Shoprite Holdings Ltd Ord	Retail, supermarkets	28.2
27	Lonmin Plc	Platinum	27.4
28	Rmb Holdings Ltd	Diversified	26.9
29	Exxaro Resources Ltd	Steel	26.8
30	Tiger Brands Ltd Ord	Diversified	22.9
31	African Bank Investments	Financial services, retail, banks	22.1
32	Reinet Investments SCA	Investment	20.0
33	Growthpoint Prop Ltd	Property investment	19.7
34	Liberty Holdings Ltd Ord	Insurance, financial services	19.5
35	Investec Plc	Banks, financial services	18.5
36	Liberty International Plc	Banks, financial services	18.3
37	Pretoria Portland Cement	Cement	17.8
38	Aspen Pharmacare Hldgs.	Pharmaceuticals	17.3
39	Truworths International	Retail	16.4
40	Pick N Pay Stores Ltd	Retail, supermarkets	16.3

Source: April et al (2003:167) adapted

5.2.1. Content analysis framework

Prior to deciding which framework to use the researcher should first decide on the appropriate approach. The first step of the content analysis approach involves the researcher clarifying what he/she really wants to find out or research but which is not directly observable. The second step involves looking for data that will enable the

researcher to draw inferences about the research subject. The other content analysis approach involves the researcher using the data available and exploring what may be inferred from this data and which might be of interest. This approach is termed a “fishing expedition” and is not commonly used by researchers because of the methodological problems it poses (Krippendorff, 1980: 170).

The content analysis framework used in this study is based on the approach of April *et al* (2003: 166), while the data are analysed in order to draw inferences on the way in which South African companies report on intellectual capital The data were obtained from the corporate annual reports of the top 40 companies listed on JSE Ltd. The analysis is based on the categories of intellectual capital and their attributes and performance indicators. The intellectual capital attributes and performance indicators extracted from the corporate annual reports are presented in Table 5.2 below.

Corporate annual reports each consist of an average of 375 pages. Every effort was made to avoid any omissions and/or errors although the volume in terms of the number of reports and pages must be borne in mind. The reports were obtained from the websites of the individual companies. Thus, in addition to reading each report, computer tools such as the Microsoft search engine were also applied in order to search for intellectual capital attributes. The computer search was based on the list presented in Table 5.2 below. This method was used to complement the reading of the annual reports, to reduce the errors of omission that may have occurred and also to provide reliable and fast results. Thus, the results of the analysis represent some aspect of reality while the data used is verifiable.

Table 5.2: Intellectual capital attributes

Human capital attributes	Structural capital attributes	Relational capital attributes

- Knowledge
- Education
- Level of qualifications
- Skills
- Talent
- Work-related competencies
- Work-related expertise
- Innovativeness
- Pro-activeness
- Entrepreneurial spirit
- Other attributes
  o Professionalism
  o Experience
	Intellectual property
	- Patents
	- Copyrights
	- Trademarks
	Infrastructure assets
	- Management philosophy
	- Corporate culture
	- Management processes
	- Information processes
	- Network systems
	- Research and development
	- Leadership
	- Financial relations
	- Other attributes
		- Brands
		- Customer list
		- Customer loyalty
		- Business collaborations
		- Market share
		- Supply chain
		- Distribution channels
		- Reputation
		- Stakeholder relations
		- Communication and information
		- Mergers and acquisitions
		- Joint ventures
		- Other attributes

Source: April et al (2003: 168) adapted

A discussion on the intellectual capital attributes included in Table 5.2 will follow below.

The above intellectual capital attributes were used in order both to research and to report on the intellectual capital attributes as reported in the corporate annual reports of the top forty companies listed on the JSE Ltd. In order to reduce the level of subjectivity, should a company have described an attribute rather than merely mentioning it, the attribute was not recorded as having been reported. However, where a company

referred, for example, to human resources instead of human capital, the intellectual capital was recorded as having been reported.

The analysis of the structural capital attributes is divided into both research into intellectual property and research into infrastructure assets. The aim behind this division was to distinguish between those assets that are recognised in the annual financial statements in terms of the IASB requirements and infrastructure capital so as to facilitate the comparison as well as the disclosure and reporting of similar intellectual capital. Infrastructure capital forms part of process assets and is similar to both human and relational capital in nature. The results of this research provide an overall picture of the way in which intellectual capital, its attributes and its performance indicators are reported in the corporate annual reports of South African companies. These results also provide an indication of the extent of reporting on each of these three categories.

The research into the performance indicators for each intellectual capital category was based on the framework developed by Vergauwen *et al* (2007: 1163). The results of this research were recorded using a similar approach to the approach used in recording each of the attributes described in the previous paragraph. The intellectual capital performance indicators reported by the companies researched were analysed and reported on. The structural capital performance indicators were analysed in terms of two different categories, namely, intellectual property and infrastructure capital indicators. This research also compared the overall reporting of the three categories of intellectual capital.

5.3 Summary and conclusions

This chapter introduced and described the content analysis research methodology which was used in this research method into the top 40 companies listed on the JSE LTD. The chapter contained a brief description of content analysis per se as well as expounding on the framework that was used for this research. In addition, the way in which the framework was applied in the study was explained. The chapter also outlined

the intellectual capital attributes and performance indicators that were researched in terms of the three intellectual capital categories.

CHAPTER 6

RESULTS OF THE CONTENT ANALYSIS DISCUSSION

6.1 Introduction

The results and findings of the content analysis of the corporate annual reports of the top 40 companies are discussed in this chapter with the first part of the chapter presenting both the findings and the results in respect of the reporting on intellectual capital attributes and their performance indicators per intellectual capital category. The second part of the section focuses on comparisons between the overall reporting of the top 40 companies with regard to the three categories of intellectual capital.

The analysis of the corporate annual reports of the companies revealed that four companies only expressly referred to intellectual capital in their annual reports, namely, Sanlam Ltd, Goldfields Ltd, Pretoria Portland Cement (PPC) and FirstRand Ltd. The following include some extracts from the annual reports of these companies:

The Board is convinced that appropriate remuneration for executive directors is inextricably linked to the development and retention of top-level talent and intellectual capital (Sanlam Ltd Annual Report, 2008: 57).

In addition, Sanlam also makes mention of human intellectual capital when referring to human capital on three occasions in their corporate annual report.

The peer groups also serve as a "brains trust" for the organisation and to ensure that intellectual capital is retained (Goldfields Ltd annual report, 2008: 55).

Yes, one-on-one performance reviews, intellectual capital reviews and succession plan processes across all levels are used to identify talent pools to fast track development and promotion (PPC annual report, 2008: 92).

Our philosophy on this issue is that we take a view on our intellectual capital across careers; people are not punished for a single mistake as this kills innovation, which has been a cornerstone of RMB and FirstRand's success (FirstRand Ltd annual report, 2008: 9).

With the exception of Sanlam Ltd, the other companies all referred to intellectual capital only once in their annual reports. The fact that four companies only mentioned intellectual capital in their annual reports and, of these four, three reported intellectual capital only once is an indication both that there is currently little reporting on intellectual capital and that few companies take any interest in the subject. However, when broken down into its attributes, intellectual capital is reported indirectly in the corporate annual reports in terms of both its categories and its attributes. Thus, these results do indicate that, overall, there is an awareness of the importance of intellectual capital within a company, and the importance of reporting this intellectual capital to all users of the information. The results of the content analysis are depicted in on Figure 6.1 in section 6.4 below.

The table 6.1 below presents the analysis framework which was used in the study. This framework is similar to the one used by April, *et al* (2003: 168). April*, et al* (2003) used a "0" if the attribute or intellectual capital was not reported or mentioned in any way in the relevant corporate annual report while a "1" was used to indicate that the attribute had been mentioned at least once. In a situation in which the same basic attribute was mentioned a number of times the number of these occurrences was ignored and a "1' is recorded. This method is simple and easy to understand (April *et al,* 2003: 168).

Table 6.1: Intellectual capital attributes and performance indicators reported in corporate annual reports of the JSE top 40 companies

Company	Human capital		Structural capital		Relational capital	
	Attributes	Performance indicators	Attributes	Performance indicators	Attributes	Performance indicators
British am Tobacco Plc	8	0	7	0	8	1
Bhp Billiton Plc	8	1	10	0	7	1
Anglo American Plc	10	0	8	0	9	1
SABMiller Plc	9	0	10	0	11	1
MTN Group Ltd	9	0	6	0	8	1
Sasol Ltd	6	1	7	0	5	0
Standard Bank Group	5	0	3	0	7	1
Anglo Platinum Ltd	6	0	4	0	6	0
AngloGold Ashanti Ltd	9	0	4	0	5	0
Impala Platinum Hlgs Ltd	8	0	5	0	5	0
Compagnie Fin Richemont	10	0	6	0	7	0
Naspers Ltd	1	0	1	0	3	0
FirstRand Ltd	10	0	8	0	11	1
Gold Fields Ltd	9	0	7	0	8	0
Absa Group Limited	10	0	4	0	7	1
Telkom SA Ltd	5	0	8	0	3	1
Kumba Iron Ore Ltd	8	0	6	0	5	0
Old Mutual Plc	9	0	6	0	8	2
Nedbank Group Ltd	10	0	6	0	8	1
ArcelorMittal SA Ltd	11	0	8	0	8	1

Company	Human capital		Structural capital		Relational capital	
	Attributes	Performance indicators	Attributes		Attributes	Performance indicators
Harmony G M Co Ltd	6	0	7	0	3	0
Sanlam Ltd	10	0	6	0	10	1
Remgro Ltd	11	0	4	0	7	1
Bidvest Ltd Ord	9	1	7	0	11	2
African Rainbow Minerals	8	0	7	0	7	1
Shoprite Hldgs Ltd Ord	9	0	6	0	9	1
Lonmin Plc	9	0	4	0	5	0
Rmb Holdings Ltd	6	0	5	0	8	0
Exxaro Resources Ltd	10	0	7	0	8	1
Tiger Brands Ltd Ord	10	0	9	0	10	1
African Bank Investments	9	0	8	0	10	1
Reinet Investments SCA	1	0	3	0	5	0
Growthpoint Prop Ltd	9	0	2	0	4	0
Liberty Holdings Ltd Ord	10	0	8	0	9	1
Investec Plc	9	0	8	0	9	1
Liberty International Plc	7	0	2	0	5	0
Pretoria Portland Cement	10	0	8	0	5	0
Aspen Pharmacare Hldgs.	10	0	10	0	11	1
Truworths International	1	0	2	0	1	0

Company	Human capital		Structural capital		Relational capital	
	Attributes	Performance indicators	Attributes		Attributes	Performance indicators
Pick N Pay Stores Ltd	6	0	5	0	5	0
Total	**321**	**3**	**197**	**0**	**280**	**25**

The discussion of the above results follows below. This discussion is based on the results in respect of the intellectual capital attributes and performance indicators of each intellectual capital category for each separate company and also overall.

6.2 Human capital attributes and performance indicators

As mentioned previously, for the purpose of this research, the mention of human resources in the corporate annual reports of the 40 companies is recorded as a reference to human capital. However, the relevant results are recorded separately. Sixteen companies made reference to human capital when referring to their employees while eleven companies referred to human resources. The rest of the forty companies researched reported on individual human capital attributes without referring to either human capital or to human resources. Knowledge, levels of education and qualifications, skills, talent and experience were the most frequently reported human capital attributes in most of the corporate annual reports. Work-related competencies and expertise, innovativeness and professionalism were reported on an average level while professionalism and experience were included under “other attributes”. This, in turn, means that a total of twelve of attributes were researched under human capital.

The integrated balanced score card discussed in section 4.3 of chapter 4 includes the qualification and education levels of key management as human capital performance indicators. However, for the purposes of this research, these performance indicators were captured as human capital attributes only − see Table 5.2 in chapter 5. Thirty six

of the forty companies reported on the qualification levels, the expertise and work experiences of the members of their boards of directors − both executive and non-executive directors. Some of these companies also reported on the qualification levels of their key personnel. The disclosure of these attributes and performance indicators will instil confidence in capital providers that their investments are in good hands while such confidence, in turn, will increase the value of the company.

Human capital performance indicators are necessary for strategic and management decisions in respect of human resource management. It is essential that management the strategies necessary both to address the causes of a high staff turnover rate and to develop staff retention strategies. Sasol reported in its report that there had been a decrease in the staff turnover rate compared to previous years (Sasol Annual Report, 2008: 45). This improvement in the Sasol staff turnover rate is a positive reflection of both its human and structural capital capabilities and will boost the confidence of both potential and current capital providers, and other stakeholders.

Thirteen of the forty companies reported the highest number of human capital attributes. This analysis is presented in Table 6.2 below.

Table 6.2: Top 13 companies that reported on human capital attributes

Company	**No of human capital attributes**
ArcelorMital	11
Remgro	10
Anglo American	10
Compagnie	10
First Rand	10
ABSA	10
Nadbank	10

Company	**No of human capital attributes**
Sanlam	10
Exxaro	10
Tiger Brands	10
Liberty Holding	10
Pretoria Portland Cement	10
Aspen Pharmacies	10
Total	**132**

Entrepreneurial spirit proved to be the attribute that was reported upon the least in all forty companies. FirstRand Ltd did refer to entrepreneurial culture while Growthpoint Property Ltd referred to entrepreneurship. These two terms were accepted as referring to the same attribute of entrepreneurial spirit. Investec Plc made mention of entrepreneurial spirit, entrepreneurial leadership and entrepreneurial culture several times in its annual report. Below is an extract from the Investec Plc annual report:

"The group emerged from this period with its capacity to compete, its brand and its entrepreneurial spirit unimpeded" (Investec annual report: 2008: 199).

It is clear from Table 6.2 above that ArcelorMittal SA Limited reported the most number of human capital attributes. Of the twelve attributes researched "pro-activeness" was the only attribute that was not reported. In addition, ArcelorMittal SA Limited also made a number of references to human capital.

FirstRand is the only company of the above thirteen that made separate references to intellectual capital and to human capital. Naspers, Truworths International and Reinet Investments reported the lowest number of human capital attributes with each of these companies reporting one attribute only. Naspers reported the expenditure on education in its reporting on segment performance, while Truworths reported on critical skills, and

Reinet mentioned experience. The extract from the Truworths International annual report reads as follows:

"The business did endeavour to retain key critical skills, however, key critical skills were lost due to emigration and they were satisfactorily replaced internally" (Truworths annual report, 2008: 5).

The above extract was reported in the human resources section which consisted of one paragraph only with the total corporate annual report consisting of 52 pages only. Reinet Investments, on the other hand, reported experience only with their annual report consisting of 64 pages comprising financial statements and business review information. The Naspers annual report was far lengthier than the other two annual reports and consisted of 196 pages. The pages contained several pictures while the reporting comprised mainly financial information with little narrative or discretionary reporting information. Below is an extract from the annual report of Reinet Investments:

"Reinet has gained access to a team of experienced asset managers, committed itself to invest alongside the current limited partners in new investments to be made by the two funds under Trilantic Capitals Partners' management and has secured rights to re-invest alongside the funds in new opportunities to be identified by the fund managers" (Reinet Investments annual report, 2009: 3).

The above extract from the corporate annual report contains the reference made to human capital attributes.

Although the corporate annual reports did, in the main, make mention of human capital attributes three companies only of the forty researched in the study reported human capital performance indicators, namely, Sasol, BHP Billiton and Bidvest. As reported in section 6.2 above, Sasol reported on a decrease in staff turnover when comparing the year under review with the previous year. BHP Billiton Ltd (2008) and Bidvest Ltd (2008) reported on their training and development costs per employee.

6.3 Structural capital attributes and performance indicators

A total of eleven structural capital attributes, three intellectual property attributes and eight infrastructure capital attributes were reported in the various corporate annual reports. However, there were additional attributes included in the "other attributes" category with these being attributes that had not been included in the predetermined framework. Technologies, license agreements and other rights, business processes and key management attributes were included in the research. For the purposes of this study license agreements and other rights were included under intellectual property with the other two being included under infrastructure capital. The reason for this specific framework was to separate the intellectual assets recognised by the IASB from process assets. This was done in order to ensure comparability of the information presented.

6.3.1 Intellectual property

The intellectual property attributes which were generally reported in some of the corporate annual reports included patents and trademarks and these were, indeed, the most reported intellectual properties. Seventeen companies reported the existence of patents in their corporate annual reports compared to the eighteen that reported trademarks. Twelve of these companies reported both patents and trademarks.

Telkom (2008) was the only company that reported the existence of copyrights in their organisation and these was reported as part of the group of all the intangible assets of the company. The following is an extract from the Telkom corporate annual report on copyrights:

"Internally generated intangible assets are recognised at cost comprising all directly attributable costs necessary to create and prepare the asset to be capable of operating in the manner intended by management. Licences, software, trademarks, copyrights and

other intangible assets are carried at cost less accumulated amortisation and any accumulated impairment loss" (Telkom annual report: 2008, 198).

Two companies, namely, MTN (2008) and Tiger Brands (2008), reported that they use the relief from the royalty measurement model to measure the value of their intellectual property while Implats (2008) uses the comparable transaction model. These two models were the rest of the companies that reported intellectual property valued these assets at cost.

None of the companies researched reported on intellectual property performance indicators. In every single one of the corporate annual reports researched in this study patents and trademarks were disclosed as part of the total intangible assets, and in terms of the disclosure requirements of the IASB.

6.3.2 Infrastructure capital attributes

For the purposes of this study and in accordance with the framework used eight infrastructure capitals attributes were recorded. Two more were added later to increase the total number to ten. Leadership proved to be the most reported infrastructure capital attribute with thirty six of the forty companies reporting on either the good or strong leadership that existed within their organisations. Information processes, network systems and financial relations were the least reported attributes. In fact, not one of the companies reported on information processes and financial relations with only three reporting on network systems, namely, MTN, Telkom, and BHP Billiton Plc (2008). MTN (2008) referred to network solutions while BHP Billiton (2008) referred to network applications instead of systems. Below is the extract on network systems from the Telkom corporate report.

"Transformation and rationalisation of networks systems and the workforce, to deliver new services far more efficiently (Telkom annual report: 2008, 20)".

Three companies recorded the most number of structural capital attributes with these companies reporting on ten out of the fourteen attributes researched in their corporate annual reports. Eleven companies reported between eight and ten structural capital attributes. Details of these results are recorded in Table 6.3 below.

Table 6.3: Top 11 companies reporting on structural capital attributes

Company	**No of Structural Capital Attributes**
BHP Billiton	10
SAB Miller	10
Aspen Pharmcare	10
Tiger Brands Ltd	9
FirstRand	8
Anglo American	8
Telkom	8
Investec Plc	8
Pretoria Portland Cement	8
ArcelorMittal	8
Liberty Holding	8
Total	**95**

The above analysis included information on both intellectual property capital as well as infrastructure capital.

Corporate culture was the second most reported infrastructure capital attribute with some organisations referring to organisational, company or group culture. These different terms were all accepted as referring to corporate culture.

6.4 Relational capital attributes and performance indicators

A total of twelve relational capital attributes were researched in the forty corporate annual reports. Two more attributes, namely, strategic partnerships and corporate image, were added based on the information presented in some of the corporate annual reports. Brand proved to be the most reported relational capital attribute with twenty eight companies reporting the different brands they possessed. Market share was the second highest reported attribute with twenty five companies reporting on the level of their market share. However, based on the framework used and the fact that market share is always reported as a percentage market share was recorded as both an attribute and as a performance indicator.

Truworths International (2008), Harmony GM (2008), and Naspers Ltd reported the lowest number of relational capital attributes with Truworths reporting on one only, namely, supply chain. Harmony GM mentioned stakeholder relations, acquisitions and joint ventures and Naspers mentioned acquisition and joint ventures. Business collaborations was the least mentioned or reported relational capital attribute and it was only Aspen Pharmacare Holdings (2008) that reported on it. Below is an extract on business collaborations from the Aspen Pharmacare Holdings annual report.

"The investments made have positioned the Group as a quality manufacturer of the highest international standards. This status has provided the access point for the Group's engagement with several of the world's leading pharmaceutical corporations from which additional business collaborations have developed" (Aspen Pharmacare Holdings annual report, 2008: 11).

Seventeen companies reported between eight and eleven relational capital attributes. The top four were, SAB Miller, FirstRand, Bidvest and Aspen Pharmacare with each of these reporting a total of eleven attributes. These four were followed by Sanlam, Tiger Brands, and African Bank Investments with each reporting ten attributes. Most of the

companies researched reported on the Customer Loyalty Programmes as required by IFRIC 13 of the IASB (2008:2400).

Table 6.4 presents the details of the companies that reported the most number of relational attributes.

Table 6.4: Top 17 companies report on relational capital attributes

Company	**No of Relational Capital Attributes**
Bidvest	11
SAB Miller	11
FirstRand	11
Aspen Pharmacare Holdings	11
Tiger Brands Ltd	10
Anglo American	10
African Bank Investments	10
Sanlam	10
Liberty Holdings Ltd Ord	9
Shoprite	9
Investec Plc	9
ArcelorMittal	8
MTN	8
Goldfields	8
Nedbank	8
Exxaro	8
British AM Tobacco	8
Total	**159**

As mentioned in the previous paragraph market share was also reported under relational capital performance indicators. Twenty five of the forty companies researched reported on the market share performance indicator. In addition to this indicator, Old Mutual also reported on net client cash outflow. Below is an extract from the Old Mutual annual report on net client cash outflow.

*"In South Africa, life and unit trust sales in local currency grew by 14 percent and 33 percent respectively and there was a significant reduction in the net client cash outflows" (*Old Mutual annual report, 2008:6). Old Mutual made mention of net cash outflow on several occasions in their annual report, thus indicating the importance of this indicator in assessing the performance of the company. Bidvest reported on BEE procurement as a percentage of controllable spend. This relational capital indicator was reported in a form of table and across all segments of the group.

6.5 Intellectual capital categories reporting

The analysis on the extent to which the intellectual capital categories and their attributes were reported has indicated that, overall, human capital, did receive signification attention in the annual reports of the 40 companies. Figure 6.1 below depicts the breakdown in the reporting in terms of average percentage of reporting per intellectual capital category, namely, human, structural and relational capital.

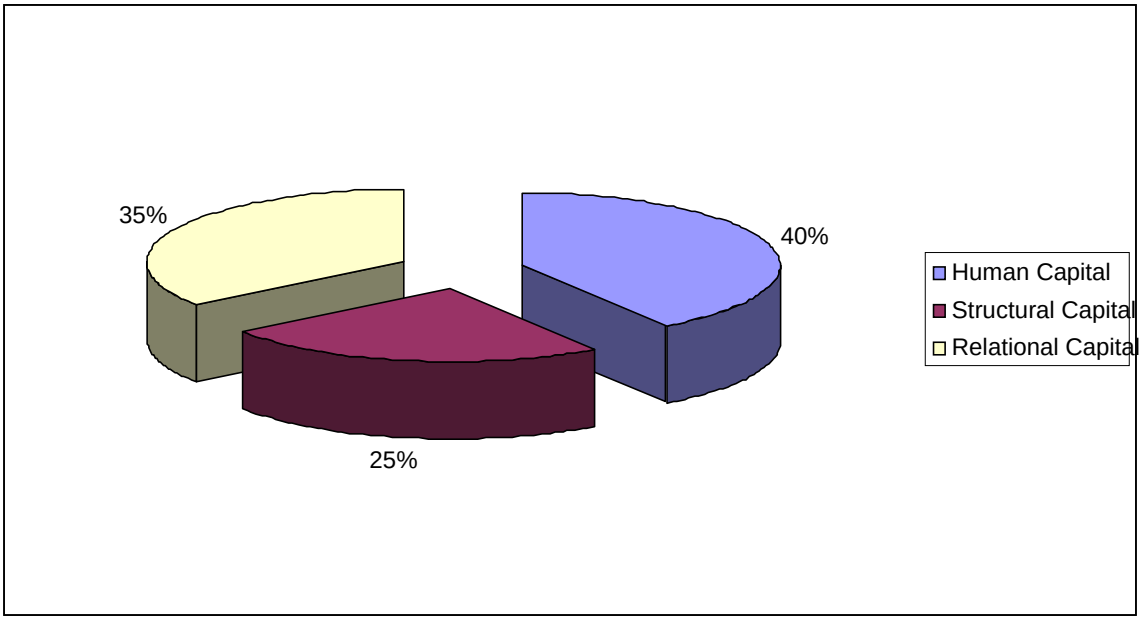


Figure 6.1: Average percentage of reporting per intellectual capital category

It is clear from Figure 6.1 above that there was far more attention paid to human and relational capital than to structural capital. Overall, the companies in the study rated human capital at 40% (321/798), structural capital at 25% (197/798) and relational capital at 35% (280/798%). These results are slightly different from the results of, similar, previous studies. Studies conducted by April *et al* (2003:172-173) showed that there was more focus on relational capital than on the other two categories with relational capital reported at 40% and human capital at 30%. This difference may be attributable to the fact that the framework used for the intellectual capital attributes included other attributes not listed by other studies. There were more attributes included in the human capital category than in the other two categories. The framework used by April *et a*l was based on six human capital attributes and nine relational capital attributes respectively, compared to the twelve and thirteen used in this study. In the framework used in this study professionalism and experience were included as separate attributes with most companies reporting on these two attributes. This framework is discussed in section 5.2 of chapter 5. A greater emphasis on the reporting on human capital provides assurance to the capital providers and other stakeholders that a company is in the hands of by capable, highly skilled and competent employees. Certain of the companies referred to human capital and human resources when referring to their employees. The

higher rate of relational capital may be attributable to the fact that most of the companies researched compete globally and, consequently, human and relational intellectual capital drivers are critical in order to give these companies a competitive advantage. Structural capital received less attention when compared to the other two with this rate being further reduced when intellectual property assets were excluded.

Thirteen companies reported between ten and eleven human capital attributes, eleven companies reported between eight and eleven structural capital attributes, and seventeen reported between eight and eleven relational capital attributes on average.

6.6 Summary and conclusions

A content analysis was conducted on the corporate annual reports of the top forty companies listed on the JSE LTD as at 12 May 2009. The corporate annual reports of these companies were analysed in order to investigate the extent of the reporting by these companies on intellectual capital, its attributes and its performance indicators.

The reporting on the intellectual capital attributes of the three categories and their performance indicators which were reported in the forty corporate annual reports were discussed in this chapter. The overall reporting on the intellectual capital attributes of the three intellectual capital categories was then further analysed and compared. It emerged from both the analysis and the comparisons that human capital attributes were accorded the most attention in the corporate reports of all 40 companies with structural capital being accorded the least attention. It emerged from the analysis of the intellectual capital performance indicators that it was the relational capital performance indicators that were the focus of the greatest amount of attention overall. The reason for the latter is probably to be found in the fact that most companies use the market share performance indicator to assess their market performance.

In conclusion, it was found that there were four companies only that expressly referred to intellectual capital in their annual reports. This indicates that intellectual capital

reporting still lacks prominence. In addition, when intellectual capital is, indeed, referred to, it is in qualitative terms and by way of its attributes. The reason for the latter may be partly because there has been little progress made in the measuring of intellectual capital assets. This view is supported by the fact that, as a result of the fact that it is possible to measure intellectual property assets in a reliable way, these assets were explicitly reported on in the annual financial statements of those companies holding such assets. Intellectual capital and its attributes, excluding intellectual property, are mainly reported on under discretionary disclosures. The content analysis of the corporate annual reports proved that companies do acknowledge the existence of intellectual capital and its attributes in their businesses.

When comparing the extent of the reporting based on the three categories of intellectual capital, it was found that human capital was the most reported upon category, followed by relational capital. This focus on the reporting on of human capital provides assurance to capital providers and other stakeholders that a company is being managed by capable, highly skilled and competent employees. On the other hand, reporting more on relational capital may be as a result of the fact that most of the companies researched compete both locally and internationally which, in turn, results in business collaborations with companies in developed countries.

CHAPTER 7

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter summarises, concludes and offers recommendations on the findings of this study. The primary objective of the study was to explore those steps that may be taken to address the challenges that face the accounting profession with regard to the accounting treatment of intellectual capital. In order to address this objective, a literature review on the subject was undertaken, and proposals from the IASB and IOD considered. The study also achieved the following objectives:

- to explain the challenges facing the accounting profession with regard to the accounting treatment of intellectual capital
- to analyse and evaluate previous studies on the accounting for intellectual capital
- to investigate and to report on the intellectual capital reporting of South African companies
- to obtain a standardised and comparable approach to account for and report on intellectual capital in the annual financial reports

In order to address the above objectives proposals from the Institute of Directors of South Africa (IOD), also known as the King II and King III Reports, the views and conclusions of the International Accounting Standards Board and a comprehensive literature review of the previous studies on issues surrounding accounting for intellectual capital were undertaken. These proposals were supported by the content analysis research of the corporate annual reports of the top forty companies listed on the JSE LTD in order to determine the way in which they report on and disclose intellectual capital and its attributes in their corporate annual reports.

7.2 Summary of the research

The background to the study (chapter 1), the literature review (chapters 2 to 4) and the contents analysis research (chapters 5 to 6) are summarised below. The conclusions from these chapters are presented in section 7.3 while recommendations emanating from the study are presented in section 7.4.

In chapter 1 the background to the research problem and the objectives of the study were explained. An important fact highlighted in this chapter was the fact that the business environment has seen and experienced a dramatic increase in the number of companies that hold intellectual capital and that the major part of the market values of these companies lies in these intangible assets with relatively little value being associated with their tangible assets. The study shows that there has been no effort made either to measure or to disclose intellectual capital in the annual financial reports of companies despite its contribution to the value of these businesses. In this chapter the hypothesis of this study was also identified.

In chapter 2 intellectual capital was defined in terms of three categories, namely, human, structural and relational capital. These three categories were explained in detail and further broken down into their attributes. The information on intellectual capital, its categories and attributes was obtained by means of a detailed theoretical framework and literature review. The chapter also analysed and discussed in detail the different types of intangible assets and intellectual capital, and their relation to other assets. The value creation process in relation to intellectual capital and the interrelationship between the three categories of intellectual capital were also explained.

The chapter further explored the framework in terms of which the accounting system operates and its relevance to the recognition of intellectual capital as part of the total assets of a company. There was also discussion on the fact that, based on the current recognition criteria required by the IASB, it is not possible to recognise intellectual capital alongside other assets in the statement of financial position despite the fact that

these assets do contribute to the value creation process and the market value of a company. There was further discussion in the chapter on the fact that their nature makes it difficult to trace the costs relating to the acquisition of intellectual capital assets and that this, in turn, poses significant challenges in the financial reporting and management of these assets. In addition, there was also attention paid to the role of intellectual capital in the value creation process which, in turn, qualifies these assets to be reported to different stakeholders, especially the providers of capital.

Chapter 3 explored different debates surrounding the accounting for intellectual capital in the annual financial statements. Both arguments in favour of and against the recognition of intellectual capital in the annual financial statements were discussed in detail using a literature review, IASB discussions and journals from different researchers. Based on these discussions it was found that those arguments that favour the recognition of intellectual capital revolve around the recognition of a need to capture the nature and value of intellectual capital and other intangible assets that add value to the overall value of a business in financial reporting. This should be done for the benefit of investors and other users of financial information.

The arguments against the recognition of intellectual capital in the annual financial statements are mainly from an accounting perspective and are based on the IASB Framework for the Preparation and Presentation of Financial Statements, IFRSs, and IASs. The IASB requires that an asset must meet the definition and recognition criteria of an asset in order to be recognised in the statement of financial position of a company. In addition, the company must have control over the benefits that will flow to the company as a result of the use of an item and its cost. It must be possible to measure the cost reliably.

Chapter 4 discussed limitations in the recognition and measurement of intellectual capital. As part of the requirements that need to be met if an item is to be recognised as an asset in the statement of financial position, this chapter explored various qualitative and quantitative, financial and non-financial measurement models appropriate to measuring the cost or value of intellectual capital.

Some of the non-financial models developed, such as the integrated balanced scorecard and the Skandia navigator, were explored and illustrated in this chapter. It was demonstrated that the use of these models complements the issue of financial reporting to users of financial information. These non-financial measures were also linked to the three categories of intellectual capital, namely, human, structural and relational capital. The chapter also discussed the financial measurement models that are currently used to measure the fair value of a business during business acquisitions and mergers. Some of these models are also used for internal reporting purposes only.

Chapter 4 explored the two types of disclosure, namely, the mandatory and discretionary disclosures of company information necessary for users of this information in order to show alternative ways of reporting information on intellectual capital. The chapter also discussed the fact that annual financial statements form one part of the overall financial reporting, as described in the new ED on “The Objectives of Financial Reporting” and “Qualitative Characteristics of Decision-useful Financial Reporting Information” with reporting on the value of intellectual capital forming the other part of overall financial reporting, namely, discretionary disclosures.

In this chapter a comparison between the financial and management accounting disciplines was also briefly drawn in order to highlight the need to use management accounting as a platform for reporting the value and performance of intellectual capital within a business. The chapter also briefly discussed management accounting measurement and reporting techniques that are available to report intellectual capital to the stakeholders.

It was also shown in chapter 4 that, although the cost of intellectual capital is immediately expensed and this cost is regarded as a reduction in the asset value (cash and cash equivalents) the cost incurred in respect of these assets and their attributes does contribute to the market value of a company. The chapter briefly explained that, despite the fact that it is not possible to trace some of the intellectual expenses through a single transaction, their incurrence may be explained through the incurrence of other

intellectual capital costs, as these assets and their costs form part of the business processes costs.

Chapter 5 introduced the content analysis research methodology which was conducted on the top 40 companies listed on the JSE Ltd in order to study the way in which these companies report and disclose intellectual capital in their corporate annual reports and annual financial statements. The intellectual capital attributes of the three categories and their performance indicators reported on in the 40 corporate annual reports were analysed and illustrated. The overall reporting on the intellectual capital attributes of the three intellectual capital categories was further analysed and compared.

The results of the content analysis research were discussed in chapter 6. The analysis and comparisons of the reporting of the three categories of intellectual capital revealed that it is the human capital attributes that were the most reported on in all forty companies with structural capital receiving the least attention. The analysis of the intellectual capital performance indicators, in turn, revealed that relational capital performance indicators are the most reported upon when compared with the performance indicators of both human and structural capital. The reason for this is probably because most of the companies used the market share performance indicator in order to assess their market performance.

7.3 Conclusions

The research results of this study overall indicate that the theory of accounting should be modified to ensure a standardised and comparable approach when accounting and reporting on intellectual capital in corporate annual reports.

The above conclusion is drawn as a result of the following factors;

1. The nature of intellectual capital assets makes it difficult to trace the costs relating to their acquisition. Accordingly, their nature creates significant

challenges in both the financial reporting and the management of these assets. Nevertheless, these challenges do not prevent companies from reporting on the existence, value and importance of these assets to the both users of financial information and other stakeholders.

2. It was found that those arguments that favour the recognition of intellectual capital revolve around the acknowledgement of a need to capture the nature and value of intellectual capital and other intangible assets that add value to the overall value of the business in financial reporting. The arguments against the recognition of intellectual capital are mainly from an accounting perspective, based on the IASB Framework for the Preparation and Presentation of Financial Statement, IFRSs, and IASs. However, it emerged clearly from both these sets of two arguments that there is a need to develop a reporting framework that will assist to strike a balance between gaining the advantages of reporting on intellectual capital and achieving fair presentation of financial information.

3. It may, thus, be concluded that measuring, recognising and disclosing information on intellectual capital is not, therefore, limited by the requirements of statutory or mandatory disclosures. Financial statements fall under these disclosures but, in addition to these disclosures, there are also several disclosures that may be used to communicate information to the users but which are within management's discretion. These discretionary disclosures form part of the corporate annual reports of a company and companies should, thus, be encouraged to use these discretionary disclosures in order to communicate information on intellectual capital.

4. The results of the content analysis showed that intellectual capital reporting still lacks prominence. In addition, when reported, intellectual capital assets are referred to in qualitative terms and in terms of their attributes. The reason for this is partly because there has been little progress made in measuring

intellectual capital assets. This view is supported by the fact that, because it is possible to measure intellectual capital assets reliably, these property assets were explicitly reported upon in the annual financial statements of those companies holding them.

5. Although the cost of intellectual capital is immediately expensed and is regarded as a reduction in the asset value (cash and cash equivalents) the cost incurred in respect of these assets and their attributes contribute to the market value of the company concerned. It may also be concluded that, as a result of its flexibility and the fact that the discipline is less constrained, it is the management accounting discipline that should be used to report the value of intellectual capital using financial and non-financial measurement models. In addition, the discipline should also be used to report the performance of these assets and their attributes.

7.4 Recommendations

The main recommendations emanating from this research study include:

7.4.1 Financial and non-financial measurement models should be used to measure the value of intellectual capital. The use of these models will assist in further explaining the value creation process within a business. Non-financial valuation models such as the Integrated Balanced Score Card and Skandia Navigator are important in linking this value creation process to the overall business strategy of an organisation. This link between the value creation process and the overall strategy of a business may promote the effective management of strategic assets and the decision making within the business.

7.4.2 As a result of the fact that intellectual capital does not meet the IASB criteria in respect of the recognition of an item in the annual financial statements, intellectual capital is identified through its attributes and it should be recognised and reported in corporate annual reports under discretionary disclosures. These

attributes assist in the identification of intellectual capital performance indicators. These performance indicators, in turn, indicate the return on investment in intellectual capital.

7.4.3 Companies should increase their reporting level on intellectual capital in order to communicate to capital providers the value creation process and the overall market value of the company. This increase in the reporting level of these assets will improve the quality of the information available to both internal and external users of the company information and enable them to to make informed decisions about future investments as well as financing and operational needs.

7.4.4 Its flexibility means that management accounting reporting should be used to report further on the existence, value and performance of intellectual capital to both operational and executive management, including the board of directors. Management accounting measurement and valuation techniques, such as DCF and Valued Added models, should be used to value the intellectual capital that exists in a business, and to report this value under discretionary disclosures in the corporate annual reports. These models and performance indicators determined on the basis of management accounting information should also be used in making strategic decisions on the direction a company intends to take.

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