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Intellectual Capital Disclosure: A Longitudinal Study of New Zealand Companies

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Abstract

Intellectual capital is increasingly being recognised as an important component of organisational value. Thus, intellectual capital information is vital for decision making both within the organisation and for external stakeholders. Limited longitudinal intellectual capital disclosure research has been undertaken, particularly with New Zealand companies. Consequently little is known about the intellectual capital disclosure of New Zealand companies and the changes in intellectual capital disclosure over time. This dissertation attempts to address this gap.

The purpose of this research is to examine patterns in how and to what extent New Zealand organisations are disclosing intellectual capital information within the annual report. The hidden value method was used to categorise organisations as knowledge intensive or traditional product based. Content analysis was then undertaken on the annual reports of five knowledge intensive and five traditional product based New Zealand listed companies for 2004, 2007 and 2010. The longitudinal research found that although there was a slight increase in voluntary intellectual capital disclosure from 2004 - 2010, there was no increasing trend over the three time periods. The findings also show no relationship between the type of organisation and the level of voluntary intellectual capital disclosure. Further, this research found that 89% of voluntary intellectual capital disclosures were in discursive form and only 2.4% of disclosures conveyed negative news.

The longitudinal perspective of intellectual capital disclosure within New Zealand organisations taken by this dissertation contributes to the voluntary intellectual capital disclosure literature and may assist accounting bodies in the future development of intellectual capital disclosure guidelines. This dissertation should also assist accounting

standard setters in assessing trends in the type of intellectual capital information being disclosed, the differences between knowledge intensive and traditional product based organisations, the way in which the information is being reported and whether it is predominantly positive or negative news.

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CHAPTER 1

Introduction

1.1 Intellectual Capital

Intellectual capital cannot be seen, touched or felt, yet it is gaining momentum as a vital component of organisational value (Guthrie, Petty, & Ricceri, 2006). No longer can organisations rely solely on their fixed assets to generate value. Instead, an organisation's survival depends on its ability to manage its intangible assets or intellectual resources and turn knowledge into value (van der Meer-Kooistra & Zijlstar, 2001).

Intellectual capital information is not only important for internal management, but it is also important for the decision making needs of the user. Research has found that the market value placed on organisations by external stakeholders is often larger than an organisation's book value that is found in the balance sheet (Lev, 2001). Whiting and Miller (2008) refer to this gap as *hidden value* and Lev and Zarowin (1999) claim that it exists because of the intellectual capital value of an organisation. As the current financial reporting standards do not allow the recognition of intellectual capital items within financial statements, components of organisational value are being excluded from the balance sheet (Guthrie et al., 2006), which in turn creates the hidden value gap. Intellectual capital information, such as know-how, experience and an organisation's ability to innovate is vital information for the decision making process, yet the financial statements fall short as they are unable to include this relevant information.

The inability of the financial reporting framework to accommodate intellectual capital and the lack of mandatory standards within New Zealand has led to voluntary disclosure of

intellectual capital information within other sections of the annual report, namely the MD&A. Voluntary disclosure enables intellectual capital rich organisations to provide external stakeholders with information on value that cannot be found in the balance sheet.

1.2 Purpose and Contribution of Research

Numerous intellectual capital disclosure studies have been undertaken various countries around the world such as Sri Lanka, Ireland, and Hong Kong and Australia (see Abeysekera & Guthrie, 2005; Brennan, 2001; Guthrie et al., 2006), including New Zealand (Whiting & Miller, 2008). However, a large proportion of the disclosure research is static and focuses on annual reports at only one point in time. This research goes a step further and undertakes longitudinal research that analyses annual reports over three different periods; 2004, 2007 and 2010. This makes it possible to recognise important disclosure patterns which help to understand the current level of intellectual capital disclosure within New Zealand.

The purpose of the research is thus, to examine voluntary intellectual capital disclosure patterns within the annual reports of selected New Zealand organisations. In undertaking this research, it will be possible to understand what stage intellectual capital disclosure is currently at within the annual reports of New Zealand companies, and how the information is most commonly being reported. This research also makes a distinction between knowledge intensive and traditional, product based organisations which will supplement existing literature by analysing the relationship between the type of organisation and the amount of intellectual capital information disclosed in the annual report. The research should assist accounting standard setters in assessing trends in the type of intellectual

capital information being disclosed, the differences between knowledge intensive and traditional product based organisations, the way in which the information is being reported and whether it is predominantly positive or negative news.

Research so far has concluded that intellectual capital disclosures are overwhelmingly discursive in nature, which poses substantial difficulties with recognition (Guthrie et al., 1999). It is important to compare the annual reports over time to see whether there has been a shift from qualitative to quantitative disclosure. This will show whether organisations are attempting to measure and possibly manage intellectual capital. This research also looks at whether voluntary intellectual capital disclosure is positive or negative in nature. The findings may further support the need for intellectual capital reporting guidelines, which may encourage the disclosure of negative news as well as positive news.

Voluntary Intellectual capital disclosure within annual reports can act as an indicator of the awareness and understanding of intellectual capital within organisations. The longitudinal research makes it possible to identify and draw conclusions as to whether or not intellectual capital awareness within New Zealand organisations has changed over the period 2004-2010. It will also provide accounting bodies with an overview of what components of intellectual capital are most commonly being reported and how they are being reported. This may assist in the future development of intellectual capital reporting guidelines.

1.3 Method

This research uses content analysis to examine the intellectual capital disclosures within the annual reports of five knowledge intensive and five traditional, product based New Zealand

listed companies. Content analysis is undertaken using a coding framework that identifies 19 items¹ that form intellectual capital. Sentences within the annual reports were then coded according to which item definition was met, the form of disclosure (i.e. discursive, monetary or numerical) and whether the disclosure conveyed positive or negative information.

1.4 Structure of Dissertation

The remainder of this dissertation is presented as follows. Chapter 2 offers an overview of the existing literature within the areas of intellectual capital, voluntary reporting and intellectual capital disclosure. Chapter 3 then outlines the four propositions that were developed from the existing literature. A detailed explanation of the method used in the undertaking of this research is also provided, along with discussion on the merits of content analysis as a data collection method. The results of the research are then presented in Chapter 4 along with discussion of significant findings that both support and challenge the four propositions. Lastly, Chapter 5 presents the overriding conclusions, limitations of the study and possible avenues for future research.

¹ See Appendix B for explanations of the 19 items that form intellectual capital

CHAPTER 2

Literature Review

2.1 Introduction

As mentioned in Chapter 1, intellectual capital is increasingly recognised as an important component of organisational value. This means that its measurement and management is vital for the ultimate survival of an organisation. The literature review delves into the intellectual capital literature in order to better understand the importance of intellectual capital, discuss theories that support voluntary disclosure and take a look at prior research in the area of intellectual capital disclosure. Several gaps are exposed within the existing literature which leads to the overall purpose of the research, as well as several propositions of the research.

As there is no commonly accepted definition of intellectual capital, a working definition must first be established in order to enhance understanding and prevent confusion. Guthrie and Petty (2000) suggest that “intellectual capital is used as the foundation for the creation and use of knowledge with the intent of enhancing firm value” (p. 16). Therefore, intellectual capital is essentially the ability to translate organisational knowledge into value. Examples of this include an organisation’s ability to innovate and implement new initiatives, as well as the ability to forge and maintain positive relationships with suppliers, customers and other stakeholders. Definitions of intellectual capital that have emerged from the management accounting literature share a similar theme. Pearse (2009) provides several different meanings of the term intellectual capital, all of which generally refer to the collective knowledge of organisational members that can be used to increase the value of

an organisation. Pearse (2009) also suggests the concept of intellectual capital has not yet been fully developed, which leads researchers to question the relevance of the intellectual capital literature. However, this latter point is beyond the scope of this dissertation, and this dissertation works from the assumption that intellectual capital is well-understood term within the intellectual capital literature.

Intellectual capital is often not well defined within the literature and the terms *intellectual capital* and *intangible assets* are often used interchangeably. This is understandable given that intellectual capital items are often considered to be intangible in nature, and intangible items are often considered to be intellectual capital (Madinios, Chatzoudes, Tsairidis, & Theriou, 2011). Throughout this dissertation, intellectual capital will be the term used.

Whether authors choose to define intellectual capital or not, most refer to the three components of intellectual capital. There are several different names or frameworks for these components but typically they are very similar in nature. Many researchers that examine intellectual capital utilise a framework that can be traced back to Sveiby's (1997) *Intellectual Capital Framework* that consisted of employee competence, internal structure and external structure.

This framework has been further developed by Guthrie et al. (1999) and Abeysekera (2008). Abeysekera (2008) refers to the three components as human capital, internal capital and external capital. These will be the terms used throughout this dissertation. Abeysekera (2008) defines human capital as the skills and abilities of employees that generate value for an organisation. This can include knowledge, experience and loyalty of the employees to the organisation. Internal capital can be described as the organisational capital and can include the systems, processes and culture that can enhance organisational value (Guthrie

et al., 1999). Lastly, external capital refers to the organisations relationships with external parties including customers and suppliers. It also includes the external awareness of company image and brand reputation (Abeysekera, 2008).

The examples provided above are not traditional items that are able to be found in a balance sheet. Guthrie et al. (2006) explain that accounting and reporting practices are based on a debit - credit system that has remained relatively unchanged over the last 500 years. This was developed for a time when manufacturing was the key source of an organisations value. However, this narrow focus on backward looking financial performance is failing to keep up with today's changing environment that relies on items such as knowledge, innovation and experience to create organisational value (International Intergrated Reporting Committee, 2011).

2.2 Voluntary Reporting

There are several hurdles that intellectual capital faces when attempting to be included in the balance sheet. The current financial reporting standards do not allow the recognition of intellectual capital as an asset because it fails to meet the strict asset recognition criteria.

According to the New Zealand Framework, para. 49:

“An asset is a resource controlled by the entity as a result of past events and from which future economic benefits will flow.”

Unlike traditional assets, intellectual capital items are less likely to be controlled by the organisation. It is difficult to claim that an organisation 'controls' its employees, as any one of them could walk off the job at any time of the day, month or year. For this reason, it is

also difficult to assume that future economic benefits will flow to the entity. Although it is probable that employees will contribute to future economic benefits, there is uncertainty surrounding how they will contribute, and how long they will continue to contribute for. As intellectual capital items fail to meet the definition of an asset, any funds spent on enhancing intellectual capital must be expensed and thus not reflected in book value, whereas upgrades to traditional fixed assets are able to be capitalised and are thus reflected in book value (New Zealand Institute of Chartered Accountants, 2011).

Currently, the only way organisations are able to recognise intangible assets within the financial statements is when they have been purchased externally (New Zealand Institute of Chartered Accountants, 2011), i.e. when an organisation is purchased by another party, the party is permitted to recognise intangible assets such as brand value within the balance sheet. However, the brand value that is generated internally is not able to be recognised. This unfair, biased system prevents shareholders from accessing intellectual capital information via the financial statements.

Guthrie & Petty (2000) claim that financial statements prepared by intangible asset-rich organisations are virtually useless for the decision making needs of the user. Due to the non-financial nature of the information, it is extremely difficult to quantify aspects of intellectual capital. Therefore, the balance sheet cannot accurately reflect the total value of an organisation, and may mislead readers of the financial statements. It is difficult for the market to value an organisation when the dominant source of information is based on financial statements that are unable to recognise intellectual capital. This lack of information may alter stakeholders' perception of the organisation, which could result in a

higher cost of capital due to the perception of higher risk (Moneva & Cuellar, 2009; van der Meer-Kooistra & Zijlstar, 2001).

Due to the difficulties with the recognition of intellectual capital within the financial statements, and lack of any mandatory standards, organisations have begun to voluntarily disclose additional information in other parts of the annual report. In 1994, Skandia was the first organisation to produce an intellectual capital report, and since then many others have begun to recognise the importance of measuring, managing and reporting intellectual capital (Ordoñez de Pablos, 2005). However, there is an argument that organisations are not likely to disclose any intellectual capital information that may jeopardise their competitive advantage (van der Meer-Kooistra & Zijlstar, 2001). This suggests that organisations may choose to limit disclosure and provide information of little benefit to competitors, and consequently little information of benefit to stakeholders.

Voluntary intellectual capital reporting seems to share similarities with sustainability, or corporate social responsibility reporting, and research has found there to be an overlap between items within environmental and social reports and items within intellectual capital reports (Cordazzo, 2005). This suggests that these two areas of disclosure share similar hurdles when it comes to recognition in the financial statements as both forms of information are primarily non-financial and qualitative. However, with the introduction of the Global Reporting Initiative, environmental and social reporting is becoming much more reliable, as the guidelines have become an acceptable framework for reporting (Dilling, 2010). Currently there are no such guidelines for intellectual capital reporting; however, there is no reason why intellectual capital reporting cannot achieve similar prominence. Further research in the area of intellectual capital disclosure may lead to a similar set of

guidelines that will enhance the reliability of intellectual capital disclosures within annual reports.

Although information in the financial statements is highly restrictive, organisations have the freedom to provide information in other sections of the annual report. In particular, the Management Discussion & Analysis (MD&A) section of the annual report provides additional information to users (Clarkson, Kao, & Richardson, 1999) that the financial statements alone are unable to deliver. The MD&A section therefore provides further information on the value of an organisation, which is useful for decision making.

As almost all intellectual capital disclosure is voluntary, it is important to consider why organisations would choose to go above and beyond what is necessary. Several pieces of voluntary disclosure literature have pointed back to two popular accounting theories; stakeholder theory and signalling theory.

2.3 Stakeholder Theory

Stakeholder theory purports that an organisation's survival relies on satisfying the demands of its numerous stakeholders (Deegan & Samkin, 2011). There is an assumption that *social contracts* exist between the organisation and various stakeholder groups, and that all stakeholders have the right to be treated fairly (Deegan, 2009). Financial statements are generally provided for those stakeholders that are interested in the financial performance of an organisation. But this does not necessarily interest all stakeholder groups. Others may be interested in the relationships an organisation has with external parties, or how the organisation looks after and develops its employees. As such, organisations are beginning

to realise that the focus cannot be placed solely on increasing shareholder wealth, but the needs of all stakeholders must be taken into consideration.

Research suggests that managers are very much aware of the importance of disclosing non-financial information. The non-financial, intellectual capital information complements the information contained in the financial statements, as it is able to capture a greater amount of the organisations value (Arvidsson, 2011). This suggests that the non-financial and financial information within the annual report are together able to provide stakeholders with a greater overall view of an organisations value. Therefore, the voluntary disclosure of intellectual capital information can enhance transparency by providing a fuller picture of the way in which the organisation creates value (Dammak, Triki, & Boujelbene, 2010).

2.4 Signalling Theory

A second underlying theory of voluntary disclosure is signalling theory. Signalling theory is based around the idea that information asymmetry can be decreased if the party with the most information (the organisation) signals that information to the other party (the stakeholders) (Cotter, Lokman, & Najah, 2011). This suggests that organisations are able to use voluntary disclosure to signal to investors' information of value. By providing voluntary disclosure, organisations are signalling to investors that intellectual capital is a potential driver for the future wealth or value of the organisation (Whiting & Miller, 2008). Deegan (2009) states that, by increasing the transparency of the organisation, relationships with investors will improve. However, as intellectual capital disclosures are voluntary, and there are presently no guidelines for intellectual capital reporting, organisations have the ability to pick and choose what additional information they provide. Therefore, there is little

incentive to report negative news that may portray the organisation in a bad light. Negative or 'bad' news could potentially discourage stakeholders, or investors, which could impact negatively on the organisations share price and market value. However, positive news has the ability to increase the organisations share price and market value. Kothari, Shu, and Wysocki (2009) found that, on average, managers tend to report good news, and tend to delay the release of bad news. This suggests that the intellectual capital information in annual reports may only reflect the good news, and omit the bad. It is expected that organisations will voluntarily disclose good news rather than bad news because this signals to stakeholders the value drivers of the organisation. Thus giving the impression that the overall value is greater than what can be captured within the financial statements.

Together, stakeholder theory and signalling theory help make sense of why organisations choose to voluntarily disclose intellectual capital information. The financial statements are no longer able to accurately reflect the value of the organisation, as intellectual capital struggles to meet recognition criteria (Guthrie & Petty, 2000). The gap between the market value and book value of organisations has led researchers to claim that intellectual capital makes up the difference, or the 'hidden value' (Whiting & Miller, 2008). It is important to test this claim to understand if the amount of intellectual capital is related to an organisation's hidden value. It is expected that there will be a positive relationship, because organisations that rely heavily on intellectual capital to generate value, are unable to recognise this in the financial statements. Therefore, to bridge this gap, organisations provide voluntary information in other sections of the annual report. This is an attempt to signal to stakeholders, and investors in particular, that the value of the organisation is higher than what is portrayed in the financial statements alone.

Some organisations rely heavily on their intellectual capital to generate profit and create value (Kavida & Sivakoumar, 2009). The financial statements of knowledge intensive organisations may therefore lack relevance as to the appropriate value of the organisation. The physical assets recognised on the balance sheet will not correspond with the organisations' potential value. This creates an incentive for knowledge intensive organisations to voluntarily disclose additional information to stakeholders. Stakeholders may be unimpressed with the financial statements, but additional disclosure will increase transparency and assist in satisfying their decision making needs.

2.5 Prior Research

Over the last three decades, research has uncovered the increasing gap between an organisation's book value and market value. Lev (2001) shows that the market to book value ratio for organisations on the S&P 500 has steadily increased from one to almost six between the 1980's and 2001. Research suggests that the hidden value is made up of the intangibles assets, or intellectual capital of an organisation (Chen, Cheng, & Hwang, 2005).

'Hidden value' has been attributed to the rise of the 'knowledge economy' (Lev, Canibano, & Marr, 2005). The knowledge economy is based on the idea that value creation does not lie with traditional tangible assets, but instead with intangible assets, or intellectual capital. No longer are organisations relying on fixed assets. It is the people, the knowledge and the information systems within an organisation which are the assets, resources and value drivers (Bose & Thomas, 2007).

These items listed above can produce significant value for an organisation and are often reflected in market value (Chen et al., 2005). The market value of an organisation is an indication of how investors value the organisation based on its future earnings potential. Whereas, the book value is based on the information found in financial statements only. As a gap between these two figures continues to exist, it suggests that financial statements lack information regarding intellectual capital items, i.e. information that is relevant in the decision making process. Investors and other stakeholders instead have to assess the earnings potential of organisations through the use of other information sources such as annual reports, websites, company announcements and media releases.

Research in the area of voluntary intellectual capital disclosure became prominent in the late 1990's and has continued to be undertaken in various countries around the world (Guthrie, Petty, Yongvanick, & Ricceri, 2004). Research by Brennan (2001) looked at the annual reports of 11 of the largest knowledge based Irish companies. Her research found that intellectual capital was rarely referred to in annual reports, and when it was, it was usually done so using qualitative information rather than quantitative (Brennan, 2001). This is consistent with research by Guthrie et al. (2006) which compared intellectual capital disclosures in Hong Kong and Australia over two time periods. They also found that disclosure is positively related to the size of the organisation. A study of 30 Sri Lankan listed companies by Abeysekera & Guthrie (2005) conflicted with that of Brennan (2001), as it found that companies did have a strong emphasis on intellectual capital disclosure, although it did also mention that there was not a single report that specifically used the term 'intellectual capital'.

Whiting & Miller (2008) undertook similar research in a New Zealand setting using annual reports of listed companies in 2003. Their research looked at the relationship between an organisation's hidden value and its voluntary intellectual capital disclosure. It specifically examined this relationship taking into consideration whether or not organisations revalue their assets, and the expectations for growth. The results suggested a positive relationship between hidden value and the voluntary intellectual capital disclosure of those organisations that undertook revaluations. Their findings also show that although New Zealand companies compare favourably with other international studies, the amount of intellectual disclosure is relatively low. Although influential in understanding the intellectual capital disclosure at that time, the research by Whiting & Miller (2008) was conducted several years ago and only focused on disclosure at one point in time. It is proposed that as intellectual capital has gained momentum since the 2003 research, intellectual capital disclosure within annual reports will have increased. To date, there are no other published papers that the author is aware of that analyse the intellectual capital disclosure within New Zealand companies. This suggests that there is a gap in the intellectual capital research, and an up-to-date study is needed in order to assess the current state of intellectual capital disclosure in New Zealand.

Furthermore, there has been limited longitudinal research undertaken in the area of intellectual capital. A paper published by Guthrie et al. (2006) concentrated on the differences in intellectual capital disclosure between Hong Kong and Australian companies over two time periods. Their results showed that between 1998 and 2002, the intellectual capital disclosure for Australian organisations increased. This suggests that organisations are beginning to recognise the importance of intellectual capital, which is then reflected in

additional disclosure in annual reports. As more and more organisations begin to grasp the concept of intellectual capital, it is expected that intellectual capital disclosure in annual reports will increase. With the exception of Guthrie et al. (2006), the lack of longitudinal studies within individual nations leaves a gap in our knowledge. By undertaking this research, we are able to look at the patterns of intellectual capital disclosure over time. This will help us to understand what types of intellectual capital items are receiving a greater prominence than others and also to see whether the total amount of disclosure has increased, decreased, or remained stagnant over time.

Through their research, Guthrie & Petty (1999) found that 95% of intellectual capital disclosure was presented in discursive form. This suggests that intellectual capital disclosure is still in the early stages of development. Given that the current financial reporting standards do not allow the recognition of intellectual capital items within the financial statements (New Zealand Institute of Chartered Accountants, 2011), it is expected that organisations will not be motivated to provide monetary disclosures. The non-financial nature of intellectual capital disclosure also supports this proposition.

2.6 Purpose

The purpose of this research is to examine patterns in how, and to what extent New Zealand organisations are voluntarily disclosing intellectual capital information in their annual reports.

In undertaking longitudinal research it will be possible to identify whether voluntary intellectual capital disclosure has increased, decreased or remained stagnant over time. As

intellectual capital has gained prominence in the academic literature, and as managers now understand the importance of providing additional information regarding value (Arvidsson, 2011), it is important to see whether this is reflected within organisations' annual reports.

A proposition of the research is to explore whether knowledge intensive organisations provide a greater amount of voluntary intellectual capital disclosure than traditional, production based organisations. Research suggests that knowledge intensive organisations rely less on traditional assets to create value, and as such, the balance sheet is unable to reflect the value of an organisation (Guthrie & Petty, 2000). It is important to test this claim, and the longitudinal research will allow the detection of any patterns over time.

Two further propositions of the research relate to how the intellectual capital information is being reported. Firstly, it is important to see how the information is being reported, i.e. whether it is in discursive, numerical or monetary form. Existing research suggests that intellectual capital is non-financial and therefore is often reported in discursive form (Guthrie et al., 1999). However, a large amount of the research was undertaken around a decade ago. Thus it is important to see whether there has been a shift from discursive to numerical or monetary. Such a shift may indicate whether management are beginning to utilise new intellectual capital measurement techniques. A third proposition of the research is to test signalling theory, which suggests that managers tend to disclose positive news rather than negative news. As intellectual capital disclosure is voluntary, it is useful to our understanding of intellectual capital disclosure.

CHAPTER 3

Methodology

3.1 Introduction

As mentioned previously, the purpose of the research is to examine patterns in how, and to what extent New Zealand organisations are voluntarily disclosing intellectual capital information within their annual reports. The literature review has exposed several gaps within existing intellectual capital disclosure research. Four propositions have therefore been developed in order to address these gaps.

3.2 Propositions

- P₁:** The pattern of intellectual capital disclosure within annual reports will reflect an increase in the number of disclosures over time.
- P₂:** Knowledge intensive organisations (greatest hidden value) will voluntarily disclose more intellectual capital information in their annual reports than traditional, product-based organisations (lowest hidden value).
- P₃:** The majority of intellectual capital disclosures will be in discursive form rather than numerical or monetary.
- P₄:** The intellectual capital disclosure within annual reports will reflect a greater amount of positive news than negative news.

3.3 Sample

The purpose of the research is to look at patterns of intellectual capital disclosure within annual reports of New Zealand organisations; therefore the population of this research includes all annual reports of New Zealand listed companies that were listed on the New Zealand stock exchange prior to 2004. After excluding those companies listed on the NZDX and the NZAX, the listings that are held by the NZX and the companies that did not provide all relevant information, there remained 93 companies within the population.

In order to collect the sample for this research, a distinction between 'knowledge intensive' and 'traditional', product based organisations was made to test the proposition that knowledge based organisations provide a greater amount of intellectual capital disclosure than traditional organisations. In order to do this, the 'hidden value' (MV-BV) concept referred to by Whiting & Miller (2008) will be utilised. In order to determine the difference between the market value and the book value, the market value and book value figures of the listed companies were obtained. The book value figures were found in the 2004 annual reports as at balance date. The market value was based on the number of ordinary shares on issue at balance date 2004 multiplied by the market value of the organisations shares at balance date 2004. The hidden value ratio was then calculated by dividing the market value by the book value (MV/BV). Those organisations with the largest hidden value i.e. market value is greater than book value, are expected to have a greater reliance on intellectual capital to create value and are therefore classified as 'knowledge intensive' organisations. Those organisations with a negative hidden value i.e. book value is greater than market value, are expected to have less reliance on intellectual capital to create value and are therefore classified as traditional, product based organisations.

The hidden value calculations of all organisations within the population were then obtained which led to the compilation of the sample. The five companies with the largest hidden value were used as the sample of 'knowledge intensive' companies, and the five companies with the smallest hidden value were used as the sample of 'traditional', product based companies. This resulted in a total sample size of ten organisations. Similar intellectual capital disclosure research that has used content analysis used sample sizes that vary widely (Whiting & Miller, 2008). Brennan (2001) used a sample of only 11 Irish companies, while Whiting & Miller (2008) used a sample of 70 New Zealand companies. Although the sample size is smaller than both of these prior research examples, this research goes a step further and undertakes longitudinal research on the annual reports. The annual reports of these ten organisations will then be coded at several points in time using content analysis to assess any patterns in intellectual capital disclosure. The annual reports will be analysed at 2004, 2007 and 2010. This gives a relatively large spread, from the time at which Whiting & Miller's (2008) study was undertaken in 2003 to present day.

3.4 Data Source

The dominant data source for this research is therefore the annual reports of New Zealand listed companies. By analysing the annual reports, it is possible to determine how companies are choosing to voluntarily disclose information on intellectual capital. Annual reports are chosen as the main data source within most of the intellectual capital disclosure research (see Table II, Whiting & Miller, 2008). Annual reports were also chosen as they are the most accessible source of company data. Producing annual reports is mandatory within New Zealand, as it is required by the Companies Act 1993. If the organisations also provided

supplementary reports such as intellectual capital reports or sustainability reports, these would have been included within the data source. However, none of the companies within the sample produced supplementary reports; therefore annual reports were the sole data source for this dissertation.

As the purpose of the research is to analyse voluntary intellectual capital disclosure, the mandatory sections of the annual report were excluded from the coding process. The financial statements and supporting notes are required under New Zealand IFRS and are therefore considered mandatory, as well as the corporate governance, auditors report, directors information and shareholder information that is required by the Companies Act 1993.

3.5 Data Collection

To understand how and to what extent New Zealand companies are disclosing information on intellectual capital, content analysis was undertaken on the sample of annual reports of New Zealand listed companies. Content analysis has been utilised in numerous intellectual capital disclosure studies (Abeysekera & Guthrie, 2005; Brennan, 2001; Guthrie et al., 2006; Whiting & Miller, 2008). Content analysis involves coding both qualitative and quantitative data into predefined categories so that it is possible to identify patterns in the information reported (Guthrie et al., 2004). This research method has been used throughout the environmental and corporate social reporting literature and is now being utilised within intellectual capital disclosure research.

Several different coding systems, or frameworks have been used throughout the content analysis literature, the most common can be traced back to Sveiby (1997). This framework has been modified and used as a base for content analysis in several studies. This dissertation will use a framework that is similar to one developed by Abeysekera (2008), which separated intellectual capital into three categories; internal capital, external capital and human capital. These three categories then contain eighteen different components. Abeysekera is influential within the intellectual capital disclosure literature, and has developed this framework over time in collaboration with other authors such as James Guthrie (see Abeysekera & Guthrie, 2005). The framework developed by Abeysekera (2008) will be used in this dissertation.

Another important consideration is whether to code individual words, sentences, paragraphs, or pages. Milne & Adler (1999) argue that individual words have no meaning without the use of a sentence for context. They also claim that sentences are more reliable than any other unit of analysis because they are able to convey meaning. Much of the content analysis research undertaken in both the environmental and social literature and the intellectual capital disclosure literature has used sentences as the unit of analysis e.g. Brennan, 2001; Guthrie et al., 1999; Milne & Adler, 1999; Whiting & Miller, 2008. As individual words, paragraphs and pages are less reliable, sentences will be used for this research.

There are several factors identified within the content analysis literature that serve to enhance the reliability of the research. Krippendorff (2004) identifies three types of reliability for content analysis. In order from weakest to strongest these are; stability, reproducibility and accuracy. Krippendorff (2004) suggests several factors that contribute to

the accuracy and therefore the overall reliability of the content analysis; 1) communicable coding instructions, 2) communicable criteria for the selection of the coders and 3) observers must work independently of each other. After referring to several sets of coding instructions found both within area of intellectual capital and corporate social reporting (Chin, 2004; De Silva, 2008), a set of coding instructions were defined for use by the coder. The coder was the main researcher, and was therefore chosen by default. And independence was achieved through the use of only one coder. De Silva (2008) suggests that the use of one coder decreases discrepancies that may be experienced with the use of multiple coders. Therefore it is found that this research adheres to Krippendorff's (2004) factors that enhance accuracy and reliability.

3.6 Coding Instrument

A common form of content analysis that has been used by Guthrie et al (2006) and Whiting & Miller (2008) involves prescribing a value dependent on the type of intellectual capital disclosure. This involves coding the disclosure based on the quality of the information i.e. 0 = no disclosure, 1 = discursive, 2 = numerical form and 3 = item was expressed in monetary terms (Guthrie et al., 2006). This form of coding is attractive and enhances validity as there is little room for subjectivity. This dissertation will use this system because it provides a useful picture as to the type of intellectual capital information that is being voluntarily disclosed. As the annual reports are being analysed over time, it will be possible to compare whether the intellectual capital disclosure is increasingly being provided in a numerical or quantitative form. However, in this research, items will not be coded a zero, as it not needed in order to answer the research questions.

The intellectual capital disclosures will also be coded +ve = positive news and -ve = negative news. This makes it possible to determine what type of news is being voluntarily disclosed to the market, and to test signalling theory which suggests organisations tend to disclose good news and delay the bad (Kothari et al., 2009). This could potentially cause validity issues as there is room for subjectivity. However, this can be improved by using only one coder to carry out all of the coding.

3.7 Pre-Test

Before beginning data collection, efforts were made to ensure that accuracy and hence reliability was achieved within this content analysis research. In order to test the content analysis framework, and also the reliability of the coder, a practice report was coded by two independent coders, and then compared. The 2003 Lion Nathan annual report was chosen as the practice report because Whiting & Miller (2008) found through their research that this company had the largest amount of intellectual capital disclosures within their sample of New Zealand companies. Also, it is no longer listed on the New Zealand stock exchange and therefore there was zero possibility that it could be chosen within the sample for this research. The results of the pre-test found that the two independent coders were in initial agreement with 90% of disclosures, and agreement was reached in the sentences that differed.

After completing the pre-test, it was found that the framework was satisfactory, and only two changes were made. Firstly, Abeysekera (2008) had placed 'brand' and 'customer' in the same category, however, it was found in the practice report that brand and customer were significantly different and this warranted their separation. Therefore, in this

dissertation items are coded into 19 different elements which is one more than Abeysekera’s (2008) original framework. Table 3.1 shows the Intellectual Capital Coding Framework and detailed explanations of each item can be found in Appendix B.

Secondly, in order to test whether disclosures were predominantly good news, disclosures were coded as positive, neutral or negative. Results of the pre-test showed that the distinction between positive and neutral was too subjective. It was decided to exclude ‘neutral’ from the coding process as it was not needed in order to answer the research questions. Lastly, the scoring system used for the form in which the data was disclosed i.e. 1 = discursive, 2 = numerical and 3 = monetary, was found to be satisfactory and no changes were made.

Table 3.1: Intellectual Capital Coding Framework

Internal Capital		External Capital		Human Capital	
1	Processes	6	Brands	12	Work-Related Knowledge
2	Systems	7	Customer	13	Training & Development
3	Philosophy & Culture	8	Corporate Image Building	14	Entrepreneurial Skills
4	Intellectual Property	9	Business Partnering	15	Equity Issues
5	Financial Relations	10	Distribution Channels	16	Employee Safety
		11	Market Share	17	Employee Relations
				18	Employee Welfare
				19	Employee Related Measurements

CHAPTER 4

Results and Discussion

4.1 Introduction

Intellectual capital disclosure is an important area of research, as it acts as an indicator of understanding and awareness of intellectual capital. An organisation that measures and manages intellectual capital in order to enhance organisational value would be expected to include some, if not all of this information in the annual report. In Chapter 4, content analysis was found to be the most appropriate research technique for recognising intellectual capital disclosure patterns. After undertaking content analysis on the annual reports of the ten organisations over the three periods, numerous intellectual capital disclosure patterns were able to be identified. These patterns are presented and discussed in this chapter in argument both for and against the four propositions outlined in the Chapter 3 and listed here.

P₁: The pattern of intellectual capital disclosure within annual reports will reflect an increase in the number of disclosures over time.

P₂: Knowledge intensive organisations (greatest hidden value) will voluntarily disclose more intellectual capital information in their annual reports than traditional, product-based organisations (lowest hidden value).

P₃: The majority of intellectual capital disclosures will be in discursive form rather than numerical or monetary.

P₄: The intellectual capital disclosure within annual reports will reflect a greater amount of positive news than negative news.

Despite all of the annual reports providing at least one intellectual capital disclosure, it was interesting to note that none of the 30 reports analysed gave specific attention to the phrase *intellectual capital* and how it contributed to organisational value. This is consistent with earlier work by Abeysekera & Guthrie (2005), whose research produced similar findings within a South African setting.

It was also found that intellectual capital items² disclosed in an organisation's annual report in 2004 would often be very different to those disclosed in the 2007 and 2010 annual reports. Some organisations had an emphasis on specific intellectual capital items that changed each year. For example, one year the focus was on employees, another year the focus was on the organisations entrepreneurial skills, and in another year the focus was on culture and what the organisation was doing to foster culture.

The results and discussion chapter is divided into four main sections, where each of the four propositions are discussed individually. Throughout the results and discussion section, the knowledge intensive organisations that had the greatest hidden value are referred to as KI and the traditional, product based organisations are referred to as PB.

4.2 Proposition 1

The first proposition of this study was that the pattern of intellectual capital disclosure will reflect an increase in the number of intellectual capital disclosures over time. However, the total number of intellectual capital disclosures increased between 2004 and 2007 and then decreased in 2010, hence following a convex pattern. As can be seen in Table 4.1, five of

² Items refer to the 19 items or components of intellectual capital outlined in Appendix B

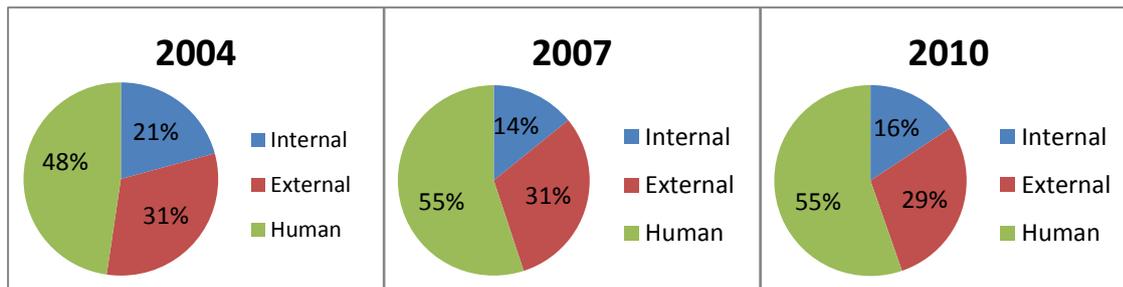
the ten organisations in the sample follow a similar convex pattern. Of the five organisations that do not seem to follow this pattern, two of them underwent major restructuring that impacted heavily on not just the intellectual capital disclosures, but all information contained in the annual report. One organisation, Cavotec MSL Holdings Limited, merged with a large international organisation, and the other, Tenon Limited, changed the type of business it was involved in. Although several organisations do not follow the convex pattern, when the total number of intellectual capital disclosures are collated, the convex pattern can be seen. As well as considering total disclosure patterns, it is also necessary to consider any emerging patterns within the three categories and the nineteen individual items. Looking at the three intellectual capital categories; internal capital, external capital and human capital, there are only slight changes over the time period³. Figure 4.1 suggests that internal capital follows a concave pattern, external capital remains relatively stagnant, and the percentage of human capital disclosures increases in 2007, then remains unchanged in 2010.

Table 4.1: Total Intellectual Capital Disclosures **Number of Sentences**

KNOWLEDGE		2004	2007	2010
WDT	Wellington Drive Technologies Limited	31	29	31
SVY	Savoy Equities Limited	2	12	8
SKC	SKYCITY Entertainment Group Limited	152	242	147
CCC	Cavotec MSL Holdings Limited	21	31	107
SLG	Sealegs Corporation Limited	11	18	15
TRADITIONAL				
SPY	Smartpay Limited	1	21	40
WFD	Wakefield Healthcare Limited	19	35	20
ABA	Abano Healthcare Group Limited	122	105	103
MCK	Millennium & Copthorne Hotels New Zealand Limited	31	34	15
TEN	Tenon Limited	121	18	31
TOTAL		511	545	517
AVERAGE		51.1	54.5	51.7

³ Refer to Chapter 2 and Appendix B for further details on internal, external and human capital

Figure 4.1: Intellectual Capital Category Totals Over Three Periods



The item Work Related Knowledge was the item that underwent the greatest increase over time. It increased from two per cent of total intellectual capital disclosures in 2004, to 6% in 2007 and 9% in 2010. This suggests that organisations are increasingly recognising the value of employees, and how their experience and know-how can enhance organisational value.

Entrepreneurial skills were the most disclosed intellectual capital item, and achieved 19% of total disclosures in 2004, 18% in 2007 and 22% in 2010. Overall, entrepreneurial skills made up 20% of all intellectual capital disclosures. This was followed by employee relations which made up 15% of total disclosures and corporate image building which made up 12%. The least disclosed items were equity issues and financial relations.

Although the total number of intellectual capital items showed a convex pattern over the period 2004 - 2010, the range of items that were disclosed in the annual reports increased over time. The 2004 annual reports had an average of 7.6 intellectual capital items. This increased by 14.5% in 2007 to 8.7, then by another 4.6% in 2010 to 9.1.

Overall the results suggest the proposition that intellectual capital disclosures will increase over time does not hold. Instead of increasing each year, the number of disclosures first increase between 2004 - 2007, then decrease between 2007 - 2010. This may be explained by the recent financial crisis of 2007-2009 that was felt around the world. After the financial

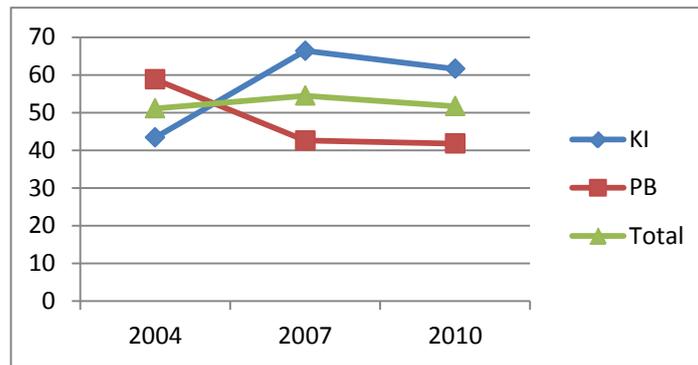
crisis, many organisations experienced cutbacks in order to remain afloat (Rigby & Bilodeau, 2009). The budget cutbacks may explain why total disclosures decreased between 2007 - 2010 rather than continuing an upward trend. If less is invested in measuring, maintaining or enhancing intellectual capital within the organisation, then less information is available to be disclosed within the annual reports. The costs involved in understanding and managing intellectual capital are not immaterial. Organisations that did not already recognise intellectual capital as an important component of organisational value may have been unlikely to do so during or immediately following the financial crisis due to the costs involved.

Although the convex pattern of intellectual capital disclosures does not support the proposition, the increasing range of items that are disclosed by organisations does provide support. Despite the increases in the range of items being small, the increase suggests that organisations are beginning to gain a broader understanding of what intellectual capital encompasses and how to measure and manage it.

4.3 Proposition 2

The second proposition of this study was that knowledge intensive organisations will voluntarily disclose more intellectual capital information in their annual reports than traditional product based organisations. The discussion for this proposition is divided into three sections. It begins with discussion on the results of the five knowledge intensive (KI) organisations followed by discussion on the results of the five traditional, product based (PB) organisations, and lastly a discussion on the comparison between the two.

Figure 4.2: Average Number of Disclosures



4.3.1 KI Organisations

The overall intellectual capital disclosure for the KI organisations shows a convex pattern, where the number of disclosures increases in 2007, then decreases in 2010. As can be seen in Figure 4.2, the average number of intellectual capital disclosures in 2004 was 43.4 sentences. This then increased by 53% to 66.4 in 2007, then decreased slightly to 61.6 in 2010.

The intellectual capital disclosures of three KI organisations follow the same overall convex pattern. This could possibly be due to the financial crisis of 2007-2009. When an organisation's budget is tightened, there is less money available for investment. Introducing and maintaining intellectual capital measurement and management can be a costly exercise for any organisation, and may be effected during times of financial crisis. This may explain why intellectual capital disclosure decreased in 2010 rather than continuing to increase.

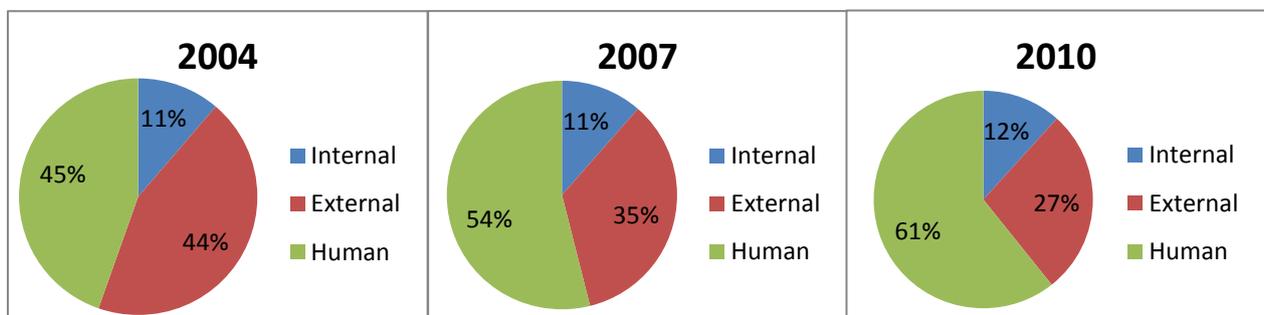
However, the intellectual capital disclosure of two organisations did not follow the same convex pattern as the others. Firstly, Cavotec MSL Holdings Ltd showed an increase in intellectual capital disclosure over all the three periods. The reason for this is most likely explained by the New Zealand organisation, originally named Mooring Systems Ltd, merging with Cavotec, a large organisation based in The Netherlands at the beginning of 2007.

According to Bounfour (2003), The Netherlands and other Scandinavian countries have the highest IC performance index, which suggests that these countries accept that intellectual capital measurement and management are important for organisational performance.

Secondly, the intellectual capital disclosures within the annual reports of Wellington Drive Technologies remained relatively stagnant, with a only slight decrease in intellectual capital disclosures in 2007 followed by a slight increase in disclosures in 2010. The annual reports maintained a relatively similar layout over the three time periods which had limited MD & A. The organisation employed the same CEO between 2004-2010; which is one possible explanation for the pattern of intellectual capital disclosures remaining relatively stagnant.

The KI organisation with the largest amount of intellectual capital disclosure was SKYCITY Entertainment Group Limited. They maintain the largest number of disclosures throughout all three time periods. One reason for this may be that they are the organisation with the largest market value. Also, research has shown there to be a link between the size of an organisation and the number of intellectual capital disclosures within its annual reports (Guthrie et al., 2006).

Figure 4.3: KI Category Percentages



Within the KI organisations, human capital items were consistently the most disclosed category for all three periods in which the analysis was undertaken. This was then followed by external capital, and lastly internal capital. As can be seen in Figure 4.3, the number of internal capital disclosures as a percentage of total disclosure for the KI organisations remained relatively stagnant over the three periods. External capital decreased quite dramatically, whereas human capital increased. The reason for these changes is generally because of large increases in human capital disclosure rather than decreases in external capital disclosure. Work-related knowledge and employee relations disclosure items (both human capital disclosures) increased significantly over the three periods. This may suggest that organisations are beginning to recognise how important employees are for the enhancement of organisations performance.

The range of intellectual capital items being disclosed for KI organisations showed an increase over the three periods. The average amount of intellectual capital items disclosed was 6.2 sentences in 2004, 8.8 in 2007 and 9.2 in 2010. This is another indicator that there is an increasing awareness and understanding of the broader meaning of intellectual capital. SKYCITY Entertainment Group Limited consistently disclosed the greatest range of items (14, 14 and 13 in 2004, 2007 and 2010 respectively). This is also consistent with the organisation having the largest market value. Savoy Equities Limited consistently disclosed the smallest range of items (1,3 and 4 in 2004,2007 and 2010 respectively). Again this was matched with this organisation having the lowest market value within the KI organisations.

4.3.2 PB Organisations

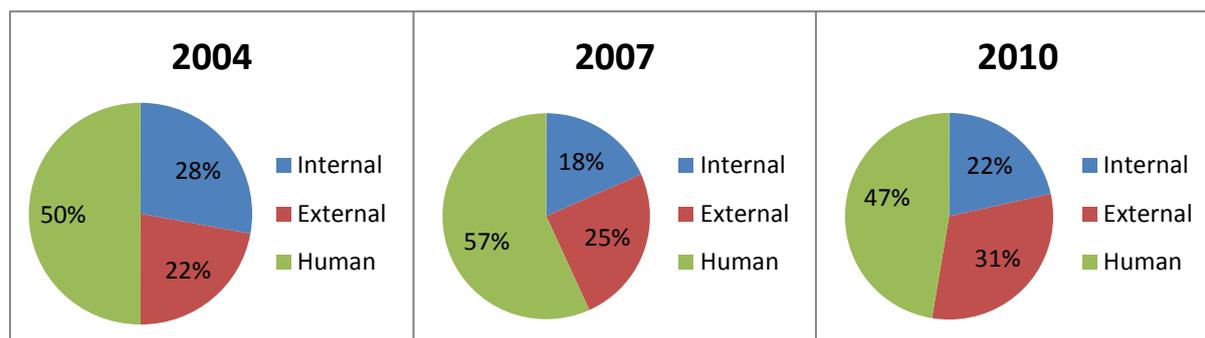
Unlike the KI organisations, the intellectual capital disclosures of each of the PB organisations do not seem to follow any obvious pattern. Figure 4.2 indicated that the intellectual capital disclosures of one organisation increase over time, for another they decrease, one shows a concave pattern and two follow a convex pattern.

However, when looking at the total number of intellectual capital disclosures for the PB organisations, a pattern does appear. In 2004 there were 294 intellectual capital disclosures. This decreased significantly to 213 in 2007, then further decreased in 2010 to 209. This shows an overall decrease in intellectual capital disclosures over time.

Within the PB organisations, the human capital category was again the most reported for all three analysis periods. As can be seen Figure 4.4, internal capital followed a concave pattern over the three periods, whereas human capital follows a convex pattern. External capital followed an increasing trend between 2004 – 2010.

The range of intellectual capital disclosures of the PB organisations remained relatively stagnant over time. The average number of items disclosed was 9 in 2004, 8.6 in 2007 and 9 in 2010. There was no organisation that provided the greatest range of items in consecutive years; however Abano Healthcare Group Limited provided the greatest range of disclosure items in 2007 and 2010 with thirteen each year. The range of intellectual capital disclosures within the annual reports of all other PB organisations fluctuated from period to period.

Figure 4.4: PB Category Percentages



4.3.3 Comparison between KI Organisations and PB Organisations

There is a reoccurring theme that arises when comparing the range of intellectual capital items within the annual reports of both the KI and PB organisations. There seemed to be no pattern or link between the range of items disclosed and the number of disclosures per organisation per period. Neither did there seem to be any pattern or link between the range of items and the organisations hidden value. This suggests that the range of intellectual capital disclosures is not associated with an organisations *hidden value* but is instead associated with an organisations *market value* (which is a reflection of the size of the organisation).

Looking at the three different categories, the PB organisations consistently provided a greater proportion of internal capital disclosures than the KI organisations in all three periods. The pattern also arises that while the proportion of external capital disclosures within the annual reports of the five KI organisations decreases each period, the opposite occurs in the annual reports of the PB organisations.

4.3.4 Summary

Overall, it appears that KI organisations do provide a greater amount of intellectual capital disclosure than PB organisations. Figure 4.2 showed the average number of intellectual capital disclosures for the KI and PB organisations as well as the total intellectual capital disclosure. Although the PB organisations had more intellectual capital disclosures than the KI organisations in 2004, the number of disclosures decreased in 2007 and again in 2010. The number of disclosures within the annual reports of the KI organisations increased substantially in 2007 which meant that they then provided a greater number of disclosures than the PB organisations. Although the number of KI disclosures decreased slightly in 2010, the total was still greater than the number of disclosures within the annual reports of the PB organisations.

These results were unexpected given that the hidden value calculations were undertaken using 2004 book value and market value figures. Therefore, in order for the proposition that KI organisations provide a greater amount of intellectual capital disclosures than PB organisations, to be supported, the proposition must hold in the hidden value calculation year i.e. 2004, and it does not. However, in 2007, the sample of KI organisations still had large hidden value ratios, and the sample of PB organisations still had small hidden value ratios. Therefore the results are inconclusive.

4.4 Proposition 3

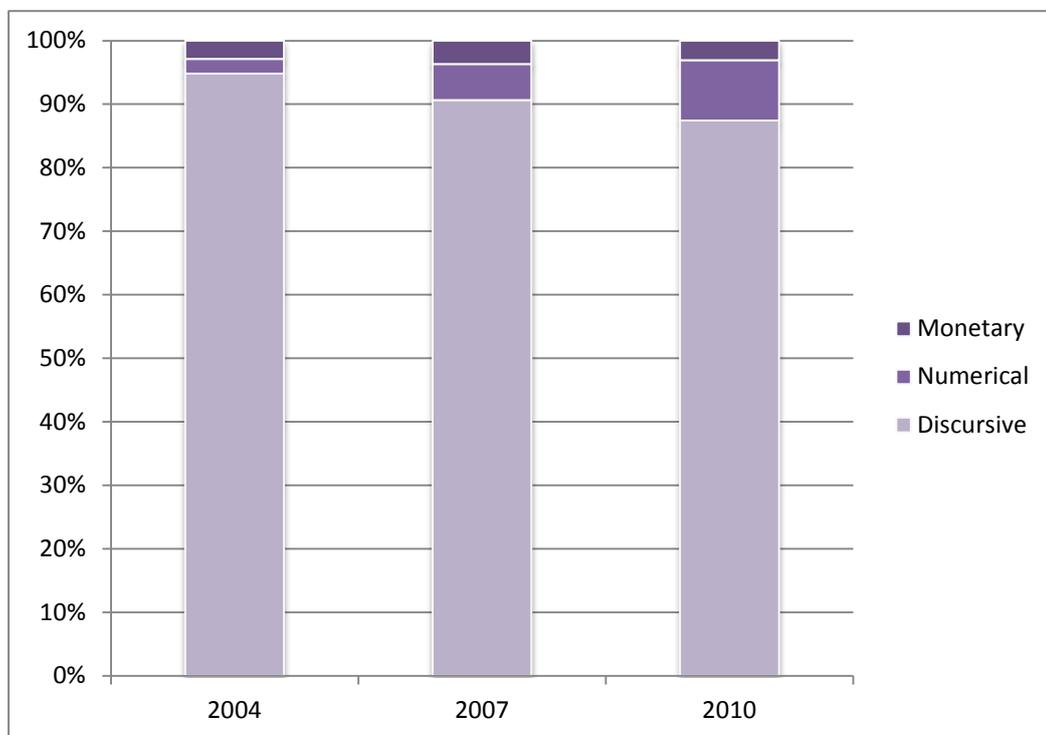
The third proposition of this study was that the majority of intellectual capital disclosures will be in discursive form. To begin with, the proposition is explored for the total sample of organisations. Secondly the KI and PB organisations discussed individually, followed by a

comparison of the two. Lastly, an overall summary of findings for this proposition is presented.

4.4.1 Total

As can be seen by looking at the intellectual capital disclosure patterns in Figure 4.5, disclosures are overwhelmingly provided in discursive form. Both discursive and monetary disclosures follow convex pattern over the three periods, and numerical disclosures show a concave pattern. In 2004, five of the ten organisations provide intellectual capital disclosures in discursive form only. This remains the same in 2007; however, this reduces to only two organisations in 2010. This suggests that organisations are introducing new intellectual capital measurement techniques which are then reflected in numerical disclosures within the annual reports.

Figure 4.5: Proportions of Disclosure



In 2010, there were no numerical or monetary disclosures for any of the items within the internal capital category. However, as the items in this category include areas such as philosophy and culture, processes and systems which are difficult to quantify, this is not surprising. The percentage of discursive disclosures within the external capital category decreased over the three periods. However, there were two items within the category that were disclosed in discursive form only. These were *brands* and *business partnering* which are difficult to disclose in numerical or monetary form due to their nature. In 2004 and 2010 all of the human capital items were disclosed in non-discursive form at least once.

The overall percentage of discursive disclosures for all three periods was 88.97%. Prior intellectual capital disclosure in Australia found that 95% of all disclosures were in discursive form (Guthrie et al., 1999). This research used a similar intellectual capital framework, and was undertaken on the 1998 annual reports of Australian companies. Not only are both percentages comparatively high, but they suggest that intellectual capital disclosures are becoming less discursive and that organisations may be attempting to use new intellectual capital measurement techniques.

4.4.2 KI Organisations

The intellectual capital disclosures for KI organisations were largely discursive. Although the percentage of discursive intellectual capital disclosures decreased over time, they still remained high. Intellectual capital disclosures were 88.7% discursive in 2004. This decreased to 87.7% in 2007 then 85.4% in 2010. As the percentage of discursive disclosures decreased, the percentage of numerical disclosures increased over the three periods, and monetary disclosures followed a convex pattern. This suggests that organisations may be

introducing more intellectual capital measurement techniques in order to enhance organisational value.

SKYCITY Entertainment Group Limited had the greatest number of intellectual capital disclosures which made up 69% of the total disclosures of the KI organisations. Excluding this organisation from the sample of KI organisations finds that the percentage of discursive disclosures is above 90% in all three periods.

Four of the five KI organisations provided at least one non-discursive disclosure over the three periods. Savoy Equities Limited provided no discursive disclosures, and this was most likely associated with this organisation's overall lack of intellectual capital disclosures, as Savoy Equities Limited provided the least amount of intellectual capital disclosures out of all five of the PB organisations (see Table 4.1). There were only two organisations that consistently provided non-discursive disclosures over the time period. These organisations - SKYCITY Entertainment Group Limited and Cavotec MSL Holdings Limited - were the top two organisations within five KI organisations in terms of total intellectual capital disclosures. SKYCITY Entertainment Group Limited is a large multinational organisation, and as such provided an extensive, information-rich annual report. In their 2007 annual report, there were several sections dedicated to intellectual capital information i.e. empowering our people, caring for our customer welfare and connecting with our communities. This suggests that they have an awareness of intellectual capital and have intellectual capital measurement systems in place. The second organisation, Cavotec MSL Holdings Limited, also had numerical and monetary disclosures. This is most likely because at the beginning of 2007, MSL Holdings Limited merged with Cavotec Limited, which is a large organisation from The Netherlands. As organisations from The Netherlands are expected to have a greater

understanding of intellectual capital, it is not surprising that Cavotec MSL Holdings Limited has, not only a greater number of intellectual capital disclosures, but also a higher percentage of non-discursive disclosures (Bounfour, 2003).

Although the percentage of monetary disclosures within the annual reports of the KI organisations did not increase over the three periods, it was found that the range, or number of organisations that provided at least one monetary disclosure did increase. In 2004 only one of the KI organisations provided an intellectual capital disclosure in monetary form. In 2007 this increased to two organisations and in 2010 this increased to three organisations. This is another positive sign that more organisations are becoming aware of the importance of intellectual capital.

It is also useful to consider discursive disclosures from the perspective of the three different intellectual capital categories, i.e. internal, external and human. Within the annual reports of the KI organisations, the internal capital category was disclosed largely in discursive form, and in 2007 and 2010 internal capital disclosures were 100% discursive. The discursive disclosures in the external capital category followed a convex pattern; however, this category also had numerical and monetary disclosures in every year. There was a greater percentage of monetary disclosures than numerical disclosures in all three years, which was largely explained by one item; corporate image building. Organisations often provided monetary values that had been spent on charities or trusts which they supported. The human capital category had an increasing percentage of numerical disclosures over the three periods and had the greatest percentage of numerical disclosures of the three categories. This was due to two significant items within the category; work related knowledge and employee related measurements. Below is an example of a numerical, work

related knowledge disclosure from the 2007 annual report of SKYCITY Entertainment Group Limited (p.19).

“With more than 25 years experience in large-scale hospitality businesses internationally and nationally, Simon brings a wealth of commercial and global tourism experience to the SKYCITY business in New Zealand.”

Employee related measurements were also often disclosed in numerical form. Most disclosures generally referred to the number of staff employed within the organisation.

4.4.3 PB Organisations

Similar to the KI organisations, the intellectual capital disclosures within the annual reports of the PB organisations were largely in discursive form. The percentage of disclosures that were provided in discursive form followed a convex pattern, the percentage of numerical disclosures followed a concave pattern and the percentage of monetary disclosures decreased over the three time periods. In 2010, there were no disclosures in monetary form at all.

Looking at the intellectual capital of the PB organisations from the perspective of the three categories; internal capital, external capital and human capital, makes it possible to understand if any particular category is providing more non-discursive disclosures than the others. The disclosures within the internal capital category were considerably discursive, and the percentage increased over the three time periods so that in 2010 disclosures were 100% discursive. The percentage of discursive disclosures within the external capital category followed a convex pattern over the three years. Although the PB organisations provided a larger percentage of disclosures in numerical form within the external capital category, there were no monetary disclosures in any of the three years. The human capital category followed a similar pattern to external capital in that the percentage of discursive

disclosures increased in 2007, then decreased in 2010. The percentage of disclosures in numerical form followed the opposite pattern over the three periods. With the exception of two disclosures in 2004, there were no monetary disclosures in the human capital category in either 2007 or 2010.

Although all of the PB organisations provided at least one non-discursive disclosure over the three periods, there was one organisation that was ahead of the others. Abano Healthcare Group Limited provided a significant number of numerical disclosures in all three periods. In 2004 this was due to their inclusion of market share and employee related measurement figures, whereas in 2007 and 2010 the disclosures were largely entrepreneurial skills figures. This was most likely due to the nature of the business, which is the acquisition of existing premises in the audiology, dental, diagnostics and rehabilitation markets.

4.4.4 Comparison of KI and PB Organisations

Comparing the KI and PB organisations, it is found that the KI organisations consistently provided a lower percentage of discursive disclosures and higher percentage of monetary disclosures. The KI organisations also provided a higher percentage of numerical disclosures than the PB organisations in 2007 and 2010, but not in 2004. This suggests that KI organisations have a greater understanding of how to measure intellectual capital, and this is reflected in the way in which intellectual capital information is disclosed in the annual reports.

Unlike the KI organisations where the number of organisations providing intellectual capital disclosures in monetary form decreased over the three periods, the PB organisations reflected the opposite pattern, and decreased over time. However, as can be seen in Table 4.2, the PB organisations outperformed the KI organisations when it came to numerical disclosures. Although the KI organisations provided a greater percentage of numerical disclosures in 2007 and 2010, the range or number of organisations responsible for these types of disclosures was less than the PB organisations. In 2010, every PB organisation provided at least one disclosure in numerical form, compared to the KI organisations where there was only three.

Table 4.2: Form of Disclosure – Individual Organisations

Knowledge Intensive Organisations												
	2004				2007				2010			
	Dis	##	\$\$	Total	Dis	##	\$\$	Total	Dis	##	\$\$	Total
WDT	31	0	0	31	28	1	0	29	31	0	0	31
SVY	2	0	0	2	12	0	0	12	8	0	0	8
SKC	135	11	11	157	209	17	16	242	113	21	13	147
CCC	18	3	0	21	24	4	3	31	98	8	1	107
SLG	11	0	0	11	18	0	0	18	13	1	1	15
TOTAL	197	14	11	222	291	22	19	332	263	30	15	308

Product Based Organisations												
	2004				2007				2010			
	Dis	##	\$\$	Total	Dis	##	\$\$	Total	Dis	##	\$\$	Total
SPY	1	0	0	1	21	0	0	21	37	3	0	40
WFD	17	1	1	19	35	0	0	35	18	2	0	20
ABA	108	14	0	122	96	8	1	105	91	12	0	103
MCK	31	0	0	31	34	0	0	34	14	1	0	15
TEN	104	15	2	121	17	1	0	18	30	1	0	31
TOTAL	261	30	3	294	203	9	1	213	190	19	0	209

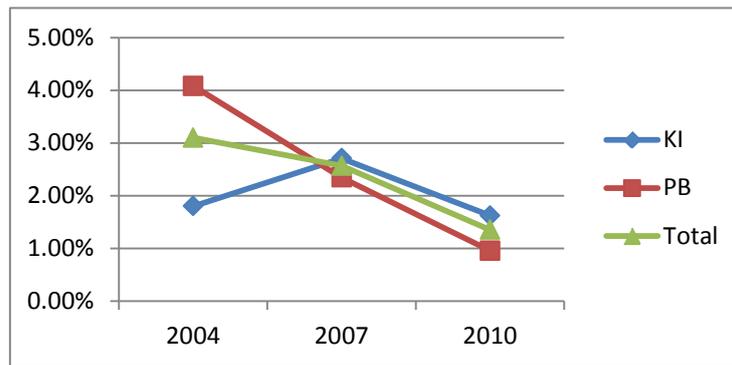
4.4.5 Summary

Overall, it is found that the proposition that the majority of intellectual capital disclosures are provided in discursive form rather than numerical or monetary is valid. This suggests that although intellectual capital can add to organisational value, organisations have not yet responded to this challenge. As the current financial reporting standards do not allow the recognition of most intellectual capital items within the financial statements, there is little incentive for managers to voluntarily provide monetary intellectual capital disclosures. This may explain why the percentage of monetary disclosures was only 3.17% out of all intellectual capital disclosures over all three periods. Like the percentage of monetary disclosures, the percentage of numerical disclosures was also low, with only 7.86% of all intellectual capital disclosures over the three periods being in numerical form. This is another indication that intellectual capital is difficult to quantify.

4.5 Proposition 4

The fourth and final proposition of this research was that intellectual capital disclosure within the annual reports will reflect a greater amount of positive rather than negative news. The results for the KI and the PB organisations are discussed first, followed by a comparison of the two sets of data, and finally a discussion looking at the results of total disclosure.

Figure 4.6: Percentage of Negative Disclosures



The percentage of negative intellectual capital disclosures was very low within the annual reports of the KI organisations and reached only 2.71% at its highest point. As can be seen in Figure 4.6, the percentage of negative intellectual capital disclosures follows a convex pattern. In each of the three years, three of the KI organisations provided at least one negative disclosure. One organisation, Savoy Equities Limited, provided negative disclosures in all three periods, and each year the negative disclosures were for different items. The only KI organisation that did not have any negative disclosures in any of the annual reports was Cavotec MSL Holdings Limited. This is surprising given that this organisation is associated with The Netherlands where there is a high awareness of intellectual capital.

The negative disclosures within the annual reports of the PB organisations showed a declining pattern over the three periods. In 2004, the percentage of negative disclosures within the annual reports of the PB organisations was more than twice that of the KI organisations; however in 2007 and 2010 this was the other way around. However, this is most likely due to one organisation, Tenon Limited, which was undergoing significant changes to its operations. Tenon Limited provided a large number of intellectual capital disclosures in 2004, 9.1% of which were negative. The negative disclosures were generally linked to the laying off of employees as part of its restructuring. The number of intellectual capital disclosures then dropped significantly and the organisation's annual report had no

negative disclosures in 2007 or 2010. When this organisation is excluded from the sample, the pattern of negative intellectual capital disclosures follows a convex pattern. This is very similar to that of the KI organisations, although, the percentages were lower in all three periods and reached only 1.67% at the highest point.

Adding up the total negative intellectual capital disclosures for the KI and PB organisations over all three periods, they are found to be quite similar. The percentage of negative disclosures for the KI organisations is 2.09%, while for the PB organisations it is 2.65%. This shows that, overall the PB organisations have only a slightly larger percentage of negative disclosures than the KI organisations.

After comparing the KI and PB organisations, it is now possible to consider the total negative intellectual capital disclosures. The total number of negative disclosures from all annual reports within the sample over the three periods is only 37 or 2.35% of the total number of intellectual capital disclosures. It is not surprising that the percentage of negative disclosures is lower than the percentage of positive disclosures, however, it was not expected that this percentage would be so low. This finding suggests that as intellectual capital disclosures are voluntary, there is little incentive to provide any negative news. Therefore the annual reports only focus on the positive aspects of intellectual capital and its contribution to organisational value. This suggests that the proposition holds across the sample of KI and PB organisations, and the claim that managers choose to provide good news and withhold the bad is valid.

4.6 Summary

The use of content analysis enabled the identification of numerous voluntary intellectual capital disclosure patterns. The results produced both supported and challenged the propositions that were stated in Chapter 3. Overall, the results suggest that intellectual capital disclosures within New Zealand organisations have not increased significantly between 2004 - 2010, and that disclosures are largely provided in discursive form and convey mainly positive news. There was also no relationship found between the type of organisation (i.e. knowledge intensive and product based) and the level of intellectual capital disclosure provided in the annual report.

CHAPTER 5

Conclusions

5.1 Conclusions and Contributions

The review of the literature in Chapter 2, found that there had been various intellectual capital disclosure studies undertaken around the world (Abeysekera & Guthrie, 2005; Brennan, 2001; Guthrie et al., 2006), including New Zealand (Whiting & Miller, 2008). With the exception of Guthrie et al. (2006), most of the research was static. This research intended to overcome this gap in the existing research by undertaking longitudinal intellectual capital disclosure research using the annual reports of New Zealand companies.

In Chapter 3, content analysis was found to be the most popular intellectual capital disclosure research method, as it was utilised within virtually all of the intellectual capital disclosure literature (see Table II, Whiting & Miller, 2008). The Intellectual Capital Framework developed by Abeysekera (2008) was chosen as the coding framework for this research. Once the content analysis was undertaken, all data was collated in order to provide discussion on the four propositions developed in Chapter 3. The main results found through the analysis and discussed in Chapter 4 are summarised below in order of the four propositions.

The first proposition of the research examined whether intellectual capital disclosure had increased over time. It was found that the number of intellectual capital disclosures had increased between 2004-2010, however the total number of disclosures decreased between 2007-2010, which may be explained by the financial crisis which affected many organisations around the globe. Despite the slight decrease in disclosures, the range of disclosures showed an increasing trend over the three time periods. This suggests that

organisations may be beginning to gain a broader understanding of the components that make up intellectual capital.

The second proposition of the research was to examine whether knowledge intensive organisations provided a greater amount of intellectual capital disclosure than traditional, product based organisations. When the organisations were divided into the five knowledge intensive organisations and five traditional, product based organisations, the figures produced inconclusive results. It was thought that knowledge intensive organisations have the largest hidden value because organisational value is not able to be accurately reflected within the financial statements. It was therefore expected that organisations with large hidden value ratios (market value/book value) would voluntarily provide a greater amount of intellectual capital disclosure. However, this was not the case. In 2004, when the hidden value calculations were undertaken, the traditional, product based organisations had more intellectual capital disclosures than the organisations classified as knowledge intensive. This suggests the connection or link between an organisations reliance on intellectual capital to generate value and the amount of voluntary intellectual capital disclosure within the annual reports is weak or non-existent.

The third proposition of this research sought to find the most common form in which intellectual capital was disclosed, i.e. discursive, numerical or monetary. It was found that intellectual capital information was disclosed largely in discursive form, with very little attempt to provide non-discursive disclosure. 89% of intellectual capital disclosures were in discursive form, however this was not surprising given the non-financial nature of intellectual capital items. Also, there is little incentive for the annual reports to disclose

intellectual capital items in monetary form, as they are unable to be recognised within the financial statements.

Lastly, the fourth proposition of this research was to identify whether the intellectual capital disclosures related to positive or negative news and to test signalling theory which suggests that managers tend to disclose positive news and withhold negative news. It was expected that the disclosures would be largely positive, and this proposition was found to be valid. The overall percentage of negative disclosure was only 2.35% which is extremely low. This suggests that the annual reports only reflect the positive aspects of intellectual capital value to an organisation and not the negative.

The results of the four propositions within this research contribute to the existing voluntary intellectual capital disclosure literature by analysing how intellectual capital information is most commonly being disclosed. This may support accounting bodies in the future development of intellectual capital reporting guidelines.

5.2 Limitations of the Research

This research has two limitations. Firstly, due to time constraints, the research was undertaken on a relatively small sample compared with similar intellectual capital disclosure research (e.g. Guthrie et al., 2006; Whiting & Miller, 2008). While this limits the generalizability of the results, the results still provide useful insights, particularly with respect to the differences between the knowledge intensive and traditional product based organisations, the form of disclosure and the level of negative news. The second limitation was the way in which the knowledge intensive organisations and the traditional, product based organisations were chosen for the non-random sample. Categorisation of the

knowledge intensive and traditional product based organisations was based on 2004 and does not account for possible changes. This means it was possible that organisations that were originally identified as knowledge intensive in 2004, may no longer be considered as knowledge intensive in 2010. This may affect the results for proposition two, but has little impact on the overall results for the propositions 1,3 and 4.

5.3 Future Research

Throughout this research, the intellectual capital disclosure within annual reports has been considered as an indicator for an organisations awareness and understanding of intellectual capital. Further research could undertake case based research within organisations in order to better understand the relationship between what an organisation measures and manages internally and what is disclosed in the annual reports. Interviews with managers will also give a deeper understanding of an organisations awareness of intellectual capital and the reasons for the changing levels of intellectual capital disclosure within the annual reports (e.g recession, change of management).

Further research could also be undertaken that identifies the knowledge intensive and traditional product based organisations each year which would provide a greater comparison between the two types of organisations. The use of a larger sample size may also increase the comparability and generalizability of the results. Lastly, this research technique could be extended to other countries around the world, which would allow the comparison of intellectual capital disclosure between different countries.

6.0 References

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7.0 Appendices

Appendix A - Coding Instructions

Adapted from: Chin (2004) – Appendix 2.2: Decision rules for coding

De Silva (2008) – Appendix B: Annual report coding instructions

1. An intellectual capital disclosure in the annual report refers to any sentence, graphical representation, or numerical data that can be identified as intellectual capital based on the intellectual capital explanations. Pictures must not be coded, but captions belonging to those pictures must be coded.
2. All intellectual capital disclosures must be specifically stated and cannot be implied.
3. Intellectual capital disclosures that can be coded into one or more items should be coded as belonging to all relevant items.
4. Disclosures that are mandatory under financial accounting reporting standards are disregarded.
5. Each intellectual capital item can gain a maximum score of 3. 0 is awarded for no intellectual capital disclosure; 1 if the information is discursive; 2 if the information is numerical; and 3 for financial information.
6. The score of each intellectual capital item should reflect the highest quality disclosure, i.e. a statement that includes both financial and numerical information, should be coded as financial information.
7. Intellectual capital items should be coded according to the type of news; positive, negative and neutral.
8. Several sections of the annual report are omitted from the content analysis. These include:
 - Contents page
 - Statutory Information
 - Corporate Governance
 - Auditors report
 - Financial statements and notes to the financial statements
 - Shareholder information e.g announcements

Appendix B - Intellectual Capital Item Explanations

Adapted from: Abeysekera (2008) – Appendix 5.2: Definitions and examples of intellectual capital items in the coding sheet for content analysis

Guthrie et al. (2004) – Table 1: Intellectual capital elements used in the coding instrument

Internal Capital		
	IC Item	Explanation
1.	Processes	A statement about the company's management processes or technological processes.
2.	Systems	A statement about the systems that a company has in place. This includes both information systems and network systems.
3.	Philosophy and Culture	A statement about the company's management philosophy or corporate culture. Management philosophy is the way the leaders in the organisation think about the organisation and its employees, (Brooking 1996, p. 62) culture is the norms, values and beliefs shared by the employees of the organisation.
4.	Intellectual Property	This is a statement about patents or copyrights that are held by the company. It also includes any non-registered trademarks.
5.	Financial Relations	A statement about the relationships a company has with investors, banks and other financiers.
External Capital		
	IC Item	Explanation
6.	Brands	A statement about the company's brand regarding quality, reliability or value-adding information.
7.	Customer	A statement about a customer that can include customer satisfaction, customer needs, customer loyalty and customer relations.
8.	Corporate Image Building	A statement about the company names or favourable contracts that have been entered into.
9.	Business Partnering	A statement about the company's business collaborations with other organisations, licensing agreements or franchising agreements.
10.	Distribution Channels	A statement about the distribution chain or how the company gets its products to the market.
11.	Market Share	A statement about the share of the market that is held by the company or company product or brand. NB: this does not include disclosure regarding volume.

Human Capital		
	IC Item	Explanation
12.	Work-Related Knowledge	A statement about the knowhow of company employees.
13.	Training and Development	A statement about the education and training undertaken by employees and also opportunities for future development.
14.	Entrepreneurial Skills	A statement about the company's entrepreneurial spirit, innovativeness, proactive and reactive abilities and changeability.
15.	Equity Issues	A statement about the company that shows that they do not discriminate against employees in the form of race, gender, religion or disability.
16.	Employee Safety	A statement regarding safety of employees or safety measures that have been implemented.
17.	Employee Relations	A statement about the involvement of company employees within the community, union activity, the thanking or appreciation of employees, or an employee feature/mention.
18.	Employee Welfare	A statement about executive or employee benefits and compensation plans.
19.	Employee related measurements	A statement about employee numbers, average professional experience of employees, education level, value added per expert etc.