

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

With the advent of the information age, we have entered a knowledge-based, technology-driven, fast-changing economy where intellectual capital (IC) plays a central role in creating and maintaining competitive advantage and shareholder value (Van der Meer-Kooistra and Zijlstra, 2001; Tayles et al., 2007). This gives rise to a particular difficulty in accounting in that financial reports fail to reflect a wide range of value-creating intangible assets (Lev and Zarowin, 1999); and this, in turn, gives rise to increasing information asymmetry between firms and users (Rylander et al., 2000; Barth et al., 2001; Holland, 2003), greater agency problems (Aboody and Lev, 2000), and significant differences between firms' market and book values (Beattie and Thomson, 2005). These gaps, which could foster inefficiencies in the resource allocation process within capital markets and adversely impact the cost of capital, highlight the need for reporting IC information to stakeholders. As Wallman (1995) observed:

'We cannot have financial reporting and disclosure constraints that slow the pace of progress in capital markets, decrease the rate of reduction in the cost of capital, or limit innovation' (p.89)

The increasing importance of IC for business enterprises, together with the need to reduce IC information asymmetries and agency costs through greater disclosure, should lead to more transparent IC communication. A number of research reports (e.g. AICPA, 1994; FASB, 2001; ICAEW, 2003; ASB, 2007) and academic studies (e.g. Wallman, 1995; Cañibano et al., 2000; Lev, 2001; Mouritsen et al., 2001; Holland, 2006a, b) have called for greater disclosure of non-financial indicators of investment in intangible assets. Cañibano et al. (2000) argued for greater voluntary IC disclosure as an enhancement of financial reports. Beattie and Thomson (2007) contend that the

opportunity to report IC in narrative format already exists within corporate annual reports. In response to the calls for increased IC disclosure, a number of studies have investigated the extent of such disclosure in annual reports (e.g. Guthrie and Petty, 2000; Brennan, 2001; Bozzolan et al., 2003). However, the empirical evidence from prior studies is limited and little is known about the main determinants of IC disclosure practices; for example, corporate governance and market factors have been largely unexplored.

The purpose of this chapter is to provide a review of the concept of IC and the limitations of traditional accounting for reporting such assets. This will then be followed by a review of the relevant empirical IC disclosure studies, to help identify, explore and address the perceived research gap.

2.1 THE RISE OF IC

Firms operating in competitive, global markets recognise that the traditional reliance on tangible, hard assets as value drivers, has been supplemented – or even superseded – by a new premium on ‘softer’, intangible asset forms (Lev and Zambon, 2003; Guthrie et al., 2007). Arthur (1996) posits that the economy is shifting from bulk-material manufacturing to design and use of technology (i.e. from processing of resources to processing of information), from application of raw energy to application of ideas. The underlying mechanisms that determine economic behaviour have shifted from ones of diminishing, to ones of increasing, returns.¹ ‘Hard’ assets, such as plant and machinery, are deemed to be subject to diminishing returns, while ‘soft’ assets - such as information technology, distribution networks, employee and customer satisfaction, ideas generated by employees and corporate culture - enjoy increasing returns (Arthur, 1996). Hence, IC is recognised as an integral part of a firm’s value-creating process (Klein and Prusak,

¹ Increasing returns are defined as the tendency for that which is ahead to get farther ahead, for that which loses advantage to lose further advantage. Diminishing return refers to products or firms that get ahead in a market eventually run into limitations, so that a predictable equilibrium of prices and market shares is reached. (see Arthur, 1996)

1994; Bukh, 2003; Holland, 2003). As Klein and Prusak (1994) argue:

‘It is becoming widely recognised that organisations increasingly compete on the basis of their intellectual resources. Just as firms leverage financial, human, and physical capital to create value and wealth, ‘intellectual capital’ likewise has come to present an essential asset ...’

This is supported by the statement made by the Chairman of Shell Brands International that ‘shareholders will place increasing emphasis on a management’s ability to manage intangible assets, rather than tangible assets...’ (IPA, 2006: 5).

2.1.1 IC DEFINITIONS

There is a wide range of definitions for IC, and this section provides an overview of the main ones (see for example, Johanson et al., 1999; Van der Meer-Kooistra and Zijlstra, 2001; and Beattie and Thomson, 2007, for further discussion).

The definitions of IC can be broadly classified into three groups. One group views IC from an asset perspective; another group focuses on its value-creation capacity; and a third group takes a strategic view when defining IC. Examples of the ‘asset’ group include Sullivan (1998) and Itami and Roehl (1987). Sullivan (1998: 20) views IC as ‘knowledge, lore, ideas and innovations’. Itami and Roehl (1987) define ‘invisible assets’ as information-based assets, including technology, consumer trust, brand image, control of distribution, corporate culture and management skills, and are the most important resources for long-term success.

Definitions within the ‘value creation’ group include Hall (1992), who introduces the concept of intangible assets as critical value drivers. Klein and Prusak (1994) propose IC to be ‘intellectual material that has been formalized, captured and leveraged to produce a higher level asset’ (p.2). There are two problems with this definition: 1) it entails the concept of intellectual material which is not clear; and 2) it limits IC to being formalised and captured (i.e. intangibles that are already being documented and made explicit, such

as processes, patents, copyrights), whereas there could also be IC that is not formalised and captured in the form of tacit knowledge and experience (Van der Meer-Kooistra and Zijlstra, 2001). Kennedy (2001) notes that some tacit knowledge, which takes a long time to learn, is not readily transformable into explicit knowledge, but is still an asset of the firm, as the individuals embodied with that tacit knowledge are employees and therefore considered to be 'assets' of the firm. Stewart (1997: 67) characterises IC as 'packaged useful knowledge' including an organisation's processes, technologies, intellectual property,² employees' skills, and information about customers, suppliers, and stakeholders that can be used to create wealth. Robinson and Kleiner (1996) contend that IC can be used to create value and is highly valued in the marketplace. In addition, authors such as Edvinsson and Sullivan (1996) and Edvinsson and Malone (1997) define IC as knowledge that can be converted into value.

Definitions based on a 'strategic view', where IC gives firms competitive advantage include Stewart's (1991), who defines IC as the sum of everything everybody in a company knows that gives a competitive edge to the company in the marketplace; and Marr and Schiuma's (2001), who define IC as 'the group of knowledge assets that are attributed to an organisation and most significantly contribute to an improved competitive position of this organisation by adding value to defined key stakeholders'. One of the most comprehensive definitions of IC within this category is offered by CIMA (2001: 2):

'...the possession of knowledge and experience, professional knowledge and skill, good relationships, and technological capacities, which when applied will give organisations competitive advantage.'

It embraces the main aspects of IC but suggests that it is only regarded as IC if it has the potential to deliver competitive advantage leading to value creation. That is not to say

² Dzinkowski (2000) states that intellectual property is legally defined that assigns property rights to such things as patents, trademarks and copyrights. These assets are the only forms of IC that are regularly recognised for accounting purposes. Intellectual property is much narrower in definition than IC.

that the link between IC and value is necessarily obvious. For example, the literature on real options suggests that IC (e.g. research and development) can offer valuable options to the company that may be exercised in the future (Damadaran, 2003).

Authors that define IC from its value creation capacity perspective and strategic view have set the stage for further research in managing IC effectively. They have pushed the process of bridging theory-practice dichotomy in response to their recognition that organisations are increasingly competing on the basis of IC (Klein and Prusak, 1994).

IC has also been put forward to explain the difference between a firm's market value and its book value (Brooking, 1997; De Pablos, 2003). As a definition of IC, it provoked criticism (e.g. Van der Meer-Kooistra and Zijlstra, 2001; Starovic and Marr, 2003;³ Skinner, 2007), as a firm's share price can fluctuate due to certain sentiments or the issues of the day, when nothing has really changed regarding the value underlying tangible and intangible assets. Mouritsen et al. (2001) and Skinner (2007) also contend market-to-book ratio to be not very informative on the ground that IC would be dependent on book value, which itself depends on accounting rules (e.g. the recognition of pension and other post-employment benefit obligations may have lowered book values). Furthermore, García-Ayuso (2003) posits that many of the tangible assets are recorded on the balance sheet at well below their current market value and, therefore, the gap might not be as large as some of the ratios suggest; plus intangible liabilities⁴ are not captured in the balance sheet, and therefore the gap does not accurately capture the intrinsic value. While the gap between market and book values may not be a good proxy of a firm's IC, it nevertheless gives some indication of its importance and growth

³ For example, it provides a single aggregate measure, not allowing for an analysis of the individual components of IC; it does not entirely comprise intangibles in that the market value of a firm is subject to a number of external variables that do not affect the assets in the same way, such as deregulation, media and political influences and rumours; the right hand side of the equation does not have a single set of units (virtual and real money cannot be added to each other); the current financial accounting model does not attempt to value a firm in its entirety (instead, it records each of its severable assets at an amount in accordance with extant legislation). (see Starovic and Marr, 2003)

⁴ Previous literature has pointed to the existence of both internal (Harvey and Lusch, 1999; Caddy, 2000) and external intellectual liabilities (Dzinkowski, 2000). Examples of intellectual liabilities could be "weak strategic planning processes" and "poor corporate reputation" (Caddy, 2000).

(Brennan, 2001), particularly when based on longer-term stock price movements.

Additionally, given the multidisciplinary nature of IC within the literature, there is a widespread tendency to use the term interchangeably with other terms such as intangibles, intangible assets (e.g. Roos et al., 1997; Lev, 2001; Meritum, 2002; Chaminade and Roberts, 2003) and intellectual assets (Edvinsson and Sullivan, 1996; Petrash, 1996; Sullivan, 1998). The term ‘intellectual capital’ is seen as having originated in the human resources literature, while the term ‘intangible’ has an accounting origin (Chaminade and Roberts, 2003). Cañibano et al. (2000) provide a review of definitions for intangible assets and argue that the emergence of IC has had the effect of increasing the variability of intangible assets. This suggests that traditional accounting definitions of intangibles are narrower than IC.

While there is widespread agreement in the literature on the significance of IC as a resource underpinning organisational performance, the diversity of definitions of IC highlights that there is little consensus on a standard definition (Beattie and Thomson, 2007). Guthrie et al. (2001) argue that the concept of IC is often not, or only poorly, defined. However, most forms of IC have three common characteristics: (1) they lack physical substance,⁵ (2) they are closely related to the knowledge and experiences of employees, and technologies and external relations of an organisation, and (3) they are capable of being leveraged to create competitive advantage and value. The next section provides a brief review of what constitutes IC, i.e. classifications of IC.

2.1.2 IC CLASSIFICATIONS

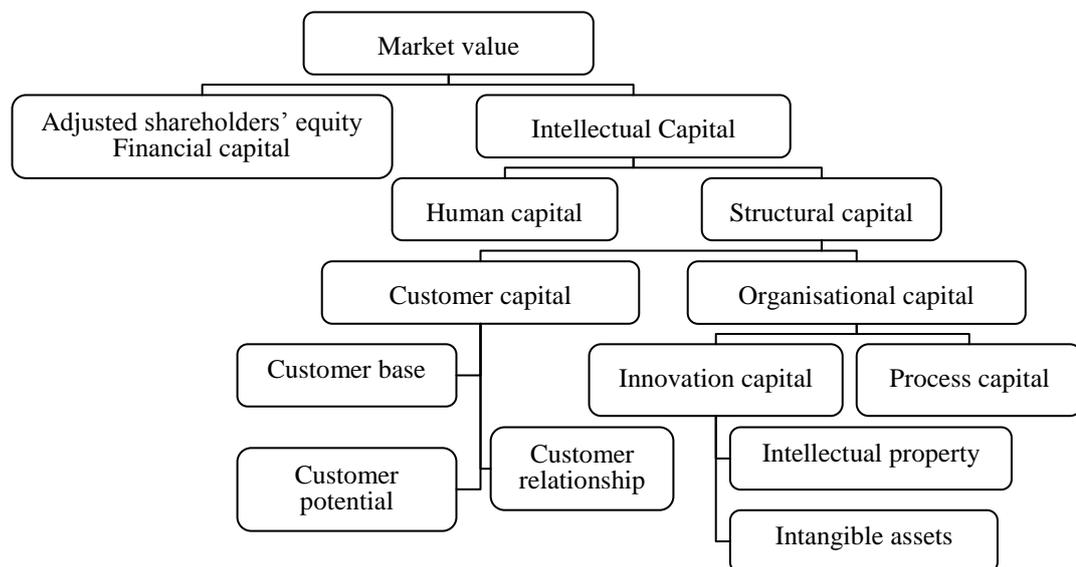
Various authors suggest two sub-categories of IC (e.g. OECD, 1999; Sullivan, 2000;

⁵ As cited in Cañibano et al. (2000), Hendriksen (1982) stressed that the lack of physical substance is not the main difference between tangible and intangible assets, whereas the most important single attribute of intangibles was suggested to be the high degree of uncertainty associated to the future benefits expected from them. This is supported by Arthur (1996) that assets of increasing returns generate not equilibrium but instability.

Roos et al., 1997).⁶ These authors tend to view human capital as resting in the people employed by the organisation (at individual level), whereas structural capital is latent within the firm (at the organisational level).

Edvinsson (1997) adopted the Skandia Value Scheme (shown in Figure 2.1). The scheme captures the varied constitution of IC with human capital and structural capital (initially being sub-divided into customer and organisational capital, which in turn divides into innovation and process capital, with the former being constituted by intellectual property and intangible assets).⁷

Figure 2.1 Skandia Value Scheme



Source: Edvinsson (1997)

All these elements of IC are to be considered as providing the basis of an enterprise's competitive edge or advantage. The author recognises that structural capital is everything else of organisational capability that supports employee productivity, and it

⁶ OECD (1999) classified IC into organisational capital (e.g. hardware, proprietary software systems, databases, organisational structure, distribution networks, supply chains, patents, trademarks and everything else of organisational capability that supports those employees productivity) and human capital (human resources within the organisation and resources external to the organisation comprise the combined knowledge, skill, innovativeness and ability of the company's individual employees, company's values, culture and philosophy). Sullivan (2000) classified IC into human capital and intellectual assets, where human capital refers to people and their knowledge and know-how that are not directly commercialisable; intellectual assets refer to new ideas and innovations that can be transformed into commercialisable assets, in which firms have rights of ownership. Roos et al. (1997) split IC into thinking (i.e. human capital) and non-thinking (i.e. structural capital) parts.

⁷ Human capital comprises the combined knowledge, skills, competencies, expertise, innovativeness and other abilities of the firm's employees; and the values, culture and philosophy of the organisation, both of which have developed over time. Customer capital includes the goodwill that employees have built up over time, customer databases and distribution channels. Process capital includes such issues as organisational structures and operating procedures.

is everything left at the office when the employees go home; whereas human capital, unlike structural capital, cannot be owned by the organisation. Consequently, it is necessary to ensure that an organisation's stock of human capital is managed effectively in order to reproduce, and ideally increase, competitive advantage. This model develops or extends the well-known idea to explain the 'intrinsic' value of a firm that it is necessary to supplement the financial value of the firm with the value of the firm's IC (Edvinsson and Malone, 1997).

In addition, other researchers and reports, such as Bontis (1998), Brooking (1996), Edvinsson and Sullivan (1996), Petrash (1996), Stewart (1991, 1997), Sveiby (1997), Lynn (1998) and Meritum (2002) expanded the two-category framework by adding a third category, variously termed relational, external, or customer capital.

Stewart (1997), for example, classified IC into human capital, structural capital and customer capital. Human capital represents 'what thinks':

'money talks, but it does not think; machines perform, often better than any human being can, but do not invent ... [the] primary purpose of human capital is innovation - whether of new products and services, or of improving business processes.' (p.86)

Of structural capital, Stewart views it as:

'knowledge that doesn't go home at night ... belongs to the organization as a whole. It can be reproduced and shared ... technologies, inventions, data, publications, ... [and] strategy and culture, structures and systems, organizational routines and procedures' (p. 108-9)

The author goes on to comment that, like human capital, customer capital cannot be owned by the firm but is crucial because it is:

'the value of its franchise, its ongoing relationship with the people or organizations to which it sells ... [like] market share, customer retention and defection rates, and per customer profitability.' (p. 143)

Sveiby (1997) divides IC into three similar dimensions: employee competence, internal structure and external structure. The author posits that:

‘employee competence involves capacity to act in a wide variety of situations to create both tangible and intangible assets. ... Internal structure includes patents, concepts, models, and computer and administrative systems ... The external structure includes relationships with customers and suppliers. It also encompasses brand names, trademarks, and the company’s reputation or image.’ (p.10-11)

The components of IC defined by Lynn (1998) are shown in Table 2.1. Human capital is represented in the more restricted sense of the know-how, capabilities, skills and expertise of the human members of an organisation. Relational capital encompasses any of the connections that people outside the organisation have with it, together with, for example, customer loyalty, market share, and the level of backorders. Structural capital embraces the remaining elements of IC, including both systems and networks, and cultures and values, together with elements of intellectual property.

Table 2.1 Tripartite Taxonomy of IC

Human Capital	Relational (Customer) Capital	Organisational (Structural) Capital	
		Intellectual Property	Infrastructure Capital
Know how	Brands	Patents	Management philosophy
Education	Customers (names, purchase history)	Copyrights	Corporate culture
Vocational qualification	Customer loyalty	Design rights	Management process
Work-related knowledge	Customer penetration and breadth	Trade secrets	Information systems
Occupational assessments	Backlog orders	Trademarks	Networking systems
Psychometric assessments	Distribution channels	Service marks	Financial relations
Work-related competencies	Business collaborations (joint ventures)	Trade address	Corporate strategies
Models and frameworks	Licensing agreements		Corporate methods
Cultural diversity	Favourable contracts		Sales tools
	Franchising agreements		Knowledge bases
			Expert networks and teams
			Corporate values

Source: Lynn (1998)

Others have classified IC into more categories, for instance, Brooking (1997) suggests IC to be comprised of four major asset types: market assets, human-centered assets, infrastructure assets, and intellectual property assets.⁸ Van der Meer-Kooistra and

⁸ Market assets comprise the ‘potential an organization has due to market-related intangibles’ (p.13), which consist of such things as brands, customers, distribution channels, customer loyalty, repeat business, and business collaborations that give the firm power in the market place. Human-centred assets ‘comprise the expertise, creative and problem-solving capacity, leadership, entrepreneurial and managerial skill embodied in the employees’ (p.15). Such assets are said to be important because they are expensive to train, hire and sustain, have rights to leave employment, be sick, go on holiday, etc., and possess knowledge important to the firm. Infrastructure assets are ‘those technologies, methodologies and processes which enable the organisation to function’ (p.16) including corporate culture, risk assessment procedures, management systems, databases, communication systems, etc., which represents assets that give the firm internal strength. Intellectual property assets include ‘know-how, trade secrets, copyright, patent, and various design rights’ (p.14) which are legal mechanisms to protect the firm’s assets.

Zijlstra (2001) view IC as comprising of human capital, customer capital, process capital and innovation capital. Roos and Roos (1997) define IC as human, business process, business renewal and development, and customer relationship capital.⁹

Although, as has been shown, IC definitions are not identical, the field is starting to see a convergence of what it encompasses (Bontis et al., 2000). IC is generally recognised to be represented in three categories: human capital, structural capital and relational capital (e.g. Guthrie and Petty, 2000; Meritum, 2002; Beattie and Thomson, 2007; Guthrie et al., 2007), despite the fact that there are differences in the general terms used for each category. For instance, ‘human assets’ (e.g. Likert, 1967), ‘human resources’ (e.g. Brummet et al., 1968; Dalmahoy, 1996), ‘employee competence’ (e.g. Sveiby, 1997), and ‘human-centred asset’ (Brooking, 1997) have been used in place of human capital; structural capital is sometimes referred to as ‘internal structure’ (Sveiby, 1997), ‘organisational capital’ (OECD, 1999), and ‘infrastructure asset (Brooking, 1996); and the terms ‘external capital’ (Sveiby, 1997), ‘customer relationship capital’ (Roos and Roos, 1997), ‘market assets’ (Brooking, 1996), ‘external structure’ (Sveiby, 1997), and ‘customer capital’ (Stewart, 1997) are sometimes used in place of relational capital.

An influential definition of IC has been presented in Meritum (2002), which provides definitions for each of the three IC categories: (1) human capital, which employees take with them when they leave the firm; (2) structural capital, which stays within the firm at the end of work; and (3) relational capital, which are all resources linked to external relationships of the firm. A summary of the definitions for the three IC categories is shown in Table 2.2.

⁹ Human capital includes items such as knowledge, skill, motivational, and task capital. Business process capital refers to, for instance, flow of information, flow of products and services, cash flow, cooperation forms, and strategic processes. Business renewal and development capital covers specialisation, production processes, new concepts, sales and marketing, and new cooperation forms. Customer relationship capital includes customer, supplier, network partner, and investor relationship capital.

Table 2.2 Definition of IC in Three Categories

Human capital	The knowledge that employees take with them when they leave the firm. Includes the knowledge, skills, experiences and abilities of people. Some of this knowledge is unique to the individual, some may be generic.
Structural capital	The knowledge that stays within the firm at the end of the working day. Comprises the organisational routines, procedures, systems, cultures, databases, etc. Some may be legally protected and become Intellectual Property Rights, legally owned by the firm under separate title.
Relational capital	All resources linked to the external relationships of the firm, with customers, suppliers or research and development (R&D) partners. Comprises that part of human and structural capital involved with the company's relations with stakeholders (investors, creditors, customers, suppliers, etc.) plus the perceptions that they hold about the company.

Source: Meritum (2002: 63)

Nevertheless, these writers share a common concern to try to portray the nature of IC and its impact on value creation (Holland, 2006a). They look beyond the conventional cash flow and share price valuation perspectives of finance to a more complex picture of the people, and structural elements of corporate life and their impact on 'value'. The three forms of IC combine and interact with each other and with traditional capital elements (financial and physical assets) in ways unique to individual firms to create competitive advantage and value for stakeholders.

The diversity of IC definitions in the literature is consistent with the notion that the concept is difficult to pin down, thus making its investigation all the more challenging. While the literature moves towards a general consensus that IC is comprised of three main categories covering human, structural and relational capital, the content of each category is still the subject of debate. Beattie and Thomson (2007) observe that there is no consensus or precise definition of the constituents of such categories. Habersam and Piper (2003) argue for a comprehensive representation of IC, including metric and non-metric forms, in order to better discern its different dimensions and degrees of transparency. The field is now at the stage of consolidating the harvest reaped from prior literature and introducing new perspectives, such as intellectual liabilities (Abeysekera, 2006), employee wellness (Roslender et al., 2006) and a fourth category of 'connectivity

capital' (Habersam and Piper, 2003). While the economy, technology, and research itself continue to evolve, the concept of IC will also evolve, and a search for a definition that satisfies both management and the academic community will remain elusive.

The review of definitions and classifications of IC in this section provides a useful foundation for understanding the concept. This study uses the CIMA (2001) definition which considers IC as comprised of human capital (the possession of knowledge and experience, professional knowledge and skills), structural capital (technological capacities) and relational capital (good relationships), and gives organisations competitive advantage when applied. The next section reviews the limitations of traditional accounting for IC reporting.

2.2 LIMITATIONS OF TRADITIONAL ACCOUNTING

A few hundred years ago, accounting reports were far simpler than they are today, and were considered a private matter between the owner-manager of the business entity (as a borrower of funds) and outsiders (as providers of loan capital). The formation of large corporations, the divorce of ownership from management, the growth of multinational business enterprises, and the wide spread of public ownership has created far greater demand for disclosure.

Accounting is not an end in itself (El-Issa, 1988: 46). As an information system, the justification for accounting can be found only in how well it serves those who use it. Therefore, the underlying purpose of accounting is to provide decision useful information about the economic entity to those who need such information. Global markets have shifted from capital-intensive industries to knowledge-based industries, which have much more intangible resources. However, the accounting for many intangible assets is biased due to the predominant use of historical cost accounting that does not reflect some assets or fair values (Kohlbeck and Warfield, 2007: 23). Although

capitalisation of software costs, movie rights, and mortgage servicing rights is permitted in specific situations (Lev, 2001), the future benefits of the vast majority of internally generated intangible assets are considered uncertain and are not recognised in financial statements (FASB, 2001). Conventional financial reports, failing to reflect a wide range of value-creating intangible assets, have become of limited relevance to investors (Johnson and Kaplan, 1987; Francis and Schipper, 1999; Lev and Zarowin, 1999). Thus the book values of firms appear unrelated to their market values (e.g. Amir and Lev, 1996; Francis and Schipper, 1999; Holland, 2003), creating ‘hidden value’. This section first reviews the phenomenon of the growing ‘hidden value’ of firms, which leads on to a discussion of the limitations of traditional accounting systems to account for IC.

2.2.1 ‘HIDDEN VALUE’

Various studies have documented increases in market-to-book ratios over time (e.g. Amir and Lev, 1996; Gu and Lev, 2004; Beattie and Thomson, 2005). Amir and Lev (1996) estimated that nearly forty per cent of the market valuations of firms are, on average, not shown in their balance sheets, and it is fifty per cent for high-technology firms. Gu and Lev (2004) observed that the S&P 500’s average market-to-book ratio surpassed 4.5 in September 2003, indicating that the value of intangible assets proxied by the difference between market and book values, substantially exceeds the value of physical and financial assets. In a UK context, Beattie and Thomson (2005) documented an average market-to-book ratio of 2.52 for 92 of the FTSE 100 firms for 2002/2003, suggesting that over sixty per cent of a firm’s value was not reflected on the balance sheet. Brand Finance’s Invisible Business report of 2005 (IPA, 2006: 5) suggests that 78% of the market value of the Fortune 500, and 72% of the value of the FTSE 350 firms is intangible. These unexplained disparities between market and book values are sometimes called the ‘hidden value’.

Lev (2001) contends that the increasing gap between the two estimates of firm value is caused by the value-creating source termed IC. Non-financial information is increasingly evidenced to be significantly related to market value. Barth et al. (2001) observed that analyst coverage is significantly greater for firms with intensive R&D and advertising expenses relative to their industry. Other studies (e.g. Chan et al., 1990; Chauvin and Hirschey, 1993; Amir and Lev, 1996; Lev and Sougiannis, 1996; Aboody and Lev, 1998; Abrahams and Sidhu, 1998; Barth et al., 1998; Ittner and Larcker, 1998; Ballester et al., 2003; Fornell et al., 2006; Givoly and Shi, 2007; Matolcsy and Wyatt, 2008) show that specific IC indicators, such as R&D expenditure, capitalisation of software development costs, customer satisfaction, market size, market penetration, brand values, and patent metrics have an impact on share prices and market values.

However, most intangibles are only revealed indirectly by incremental economic performance that is not accounted for by tangible investments (Cañibano et al., 2000). Hence, the traditional financial accounting framework (i.e. book valuations) inadequately reflects the value and impact of intangibles and has become less useful in terms of what is reported (AICPA, 1994; Beattie, 1999; Francis and Schipper, 1999; Lev and Zarowin, 1999; Dzinkowski, 2000; FASB, 2001; Upton Jr., 2001; ICAEW, 2003), although financial statements still appear reliable. DiPiazza (2006: 16) states that:

'[the] large discrepancies between the 'book' and 'market' values of many, if not most, public companies ... provide strong evidence of the limited usefulness of statements of assets and liabilities that are based on historical costs. Clearly, a range of 'intangibles' that are not well measured, or not measured at all, under current accounting conventions are driving company performance. Investors and other stakeholders in business information want to know what those intangibles are, and how they might possibly affect how businesses perform in the future.'

Beattie (1999: 78) suggests that, as part of their business reporting packages, firms should 'report externally on the measurement and management of intellectual capital'; and the Jenkins Report (AICPA, 1994: 80) suggests that:

'...a large part of the immediate problem ... is the limited usefulness of today's

financial statements. They do not ... reflect information-age assets, such as information, capacity for innovation, and human resources. ... they have been a declining proportion of the information inputs to investors' decision making....'

The disparities between the market and book values create information asymmetries between preparers and users of information and cause concerns within the capital market on the ability and relevance of the accounting numbers reported in the financial reports for making economic decisions (Barth et al., 2001; Nielsen and Madsen, 2005). This is further exacerbated by post-Enron concerns about the veracity of financial statements and the general downturn in the global economy (Roslender and Fincham, 2004). To resolve the problem of increasing intangibility of businesses, stakeholders will demand stronger accountability and more stringent disclosure. Thus, investors seek greater IC information (e.g. Eccles and Mavrinac, 1995; Mavrinac and Boyle, 1996; Beattie and Pratt, 2002), relying on sources of information other than financial statements (e.g. Holland and Doran, 1998; Guthrie, 2001; Holland, 2001, 2003, 2006b).

Efforts need to be made towards incorporating the value of IC into a formalised reporting framework, i.e. 'to make [the] invisible visible' (Roos and Roos, 1997). The research and published literature on measuring and reporting IC is growing rapidly (e.g. Guthrie et al., 2001; Mouritsen et al., 2001). However, firms understand poorly the relevant IC components and therefore are not able to identify, measure and report IC within a consistent framework (Guthrie and Petty, 2000). This could be partly due to limitations of the traditional accounting framework in accommodating IC. It has been suggested that the world of knowledge-intensive intangibles has developed too fast for regulators (Holland, 2006a: 162). The next two sections outline two limitations of the traditional accounting system on measuring and reporting IC.

2.2.2 CLASSIFICATION OF IC - 'ASSETS' AS 'EXPENSES'

One of the limitations of the traditional accounting system is the classification of many

intellectual assets as expenses. The accounting profession has developed a technical framework to measure, record, and report transactions of business entities, based on which, accurate and reliable estimates of the value of business entities in the form of financial statements are produced periodically. Most of these are subject to generally accepted accounting principles and practices (GAAP). However, given the nature of IC, relating primarily to the intangibles and highly mutable assets of firms, the current accounting model does not adequately capture their value nor represent them in a concise, meaningful format (Dzinkowski, 2000). This is because the IC concept has an *ex ante* perspective, whereas the financial accounting framework is grounded in an *ex post* perspective (Van der Meer-Kooistra and Zijlstra, 2001). Thus, most intangible investments are not reflected on the balance sheet, but immediately expensed in the income statement, according to regulations issued by most accounting standards setting bodies, despite the fact that they contribute to generate future income. Therefore, financial statements fail to provide a true and fair view of a firm's (non-physical) position; both earnings and book value of equity are typically understated by the accounting model (Cañibano et al., 2000). The authors contend that investors are provided with biased (conservative) estimates of a firm's current value and of its future wealth creation capability. This potentially leads to systematic under-valuations, adverse effects on firms' liquidity (Ronen, 2001), and short-termism (Dunk and Kilgore, 2001).¹⁰ Graham et al. (2005) found that managers are willing to make small or moderate sacrifices in economic value to meet the earnings expectations of analysts and investors to avoid severe market reaction for under-delivering. These reporting deficiencies have also been evidenced to cause serious social harms, such as excessive cost of capital to intangible-intensive enterprises, hindering their investment and growth; high volatility of stock prices, causing undue losses to investors and misallocation of

¹⁰ Dunk and Kilgore (2001: 17) indicate that firms are likely to cut R&D expenditure to focus on short-term financial performance when the emphasis on the marketplace is on cost rather than on product innovation.

resources in capital markets; systematic biases in managerial decisions; large insider gains and financial reports manipulation, eroding investors' confidence (Lev, 2002a).

2.2.3 IC DISCLOSURE

Another limitation of traditional accounting for IC is that the accounting standards in most countries permit only the recognition of purchased goodwill to be reported in their financial statements (Cañibano et al., 2000; Roslender and Fincham, 2004), which represents only a portion of IC (Van der Meer-Kooistra and Zijlstra, 2001). Intangibles developed internally over time are not included.

Traditional accounting rules have changed over the past two decades in acknowledgement of the increasing importance of intellectual resources, with two significant developments, i.e. FRS10 (UK) and IAS 38 (international). ASB (1997) introduced FRS 10 as the main standard for reporting intangibles and goodwill, which defines intangibles as 'non-financial fixed assets that do not have physical substance but are identifiable and controlled by the entity through custody and legal rights' (p.8). IASC (1998) proposed an international standard for reporting intangible assets, IAS 38, later revised in 2004. Its definition of intangible assets is very similar to the one used in FRS 10, except that it adds that intangible assets are held 'in the production or supply of goods and services, for rental to others or for administrative purposes'. IAS 38 specifies that a firm can only recognise an asset if (1) it is identifiable, (2) it is controlled and clearly distinguishable from an enterprise's goodwill, (3) it is probable that the future economic benefits attributable to the asset will flow to the enterprise, and (4) the costs of the asset can be reliably measured. IAS 38 also specifically prohibits the recognition, as assets, of internally generated goodwill, brands, mastheads, publishing titles, customer lists and items similar in substance (IASC, 1998). It is clear that most of the elements of what is commonly regarded as IC would not pass this recognition test. IAS 38 provides

for the disclosure of limited IC elements in the annual report, while most of the IC resources remain undisclosed (Van der Meer-Kooistra and Zijlstra, 2001).

In addition, IASB (2004) introduced IFRS 3, revised in 2008, on business combinations, aiming at increasing the frequency and the number of intangible assets identified in acquisitions, in order to ensure that subsequent accounting treatment is appropriate in an accounting model where goodwill is no longer amortised. IFRS 3 (para. 67) states that:

‘the acquirer shall disclose the following information for each business combination that was affected during the period ... a description of the factors that contributed to the cost that results in the recognition of goodwill – a description of each intangible asset that was not recognised separately from goodwill and an explanation of why the intangible asset’s value could not be measured reliably’.

An implication of IFRS 3 is the likelihood of increased recognition of different intangible assets apart from goodwill; however, it only applies to business combinations.

Like goodwill, IC has a strong intangible asset connotation, and with it the difficulties entailed in being able to be incorporated into the prevailing accounting framework. Despite some IC items being recognised in the form of goodwill and recent changes in the focus of financial accounting regulations toward a greater use of future financial benefits when valuing present assets and liabilities (Deegan and Unerman, 2006), many IC resources are still not captured (Petty and Guthrie, 2000; Beattie et al., 2002, 2004a). If goodwill continues to prove problematic for financial accounting and reporting, IC only serves to multiply the difficulties involved.

These weaknesses of traditional accounting are believed to be partially responsible for the noted gap between the net book value and market value of a firm (Brooking, 1997; Dzinkowski, 2000). This results in greater demand for reporting IC to the market to assist the evaluation of investments and the valuation of firms (Petty and Guthrie, 1999). As such, Beattie et al. (2004b) argue that the business reporting model needs to expand beyond the traditional financial reporting model that emphasises backward-looking,

quantified, financial information in order to accommodate IC and meet the information needs of the market. Some suggest an extension of the balance sheet, or to create complementary balance sheets, or a supplementary set of elements in reporting, in order to recognise IC in financial reports (e.g. Rylander et al., 2000, Lev, 2001). However, Cañibano et al. (2000) argue that the costs associated with a radical change in the accounting system to make it more value relevant are unaffordable and that the sensible approach to the enhancement of financial statements is to encourage voluntary IC disclosure (also see Tasker, 1998; Bushee et al., 2003; Graham et al., 2005; Skinner, 2007). Indeed, it has been evidenced that annual reports are more informative than the basic description of legal requirements (Gray and Roberts, 1993; Roberts et al., 2005).¹¹ Although proprietary theory of disclosure restricts voluntary disclosure by managers, they are more inclined to do so when the accounting model does not permit credible communication of firm value. Disclosure is the means through which financial as well as non-financial information about firms is transmitted to user groups.

Johanson et al. (2001b) suggest that a formal measurement routine is a way to make 'tacit' knowledge of norms (rules) and activities (routines) explicit, which can be then more easily communicated to the stakeholders. The literature in the area of IC measurement and the number of measurement frameworks is continuously growing, as researchers attempt to develop metrics that inform strategy formulation and implementation, improve disclosure, benchmark performance, and predict future business performance (Marr et al., 2003). A range of IC measurement mechanisms include the Balanced Scorecard (Kaplan and Norton, 1992, 1993, 1996), Skandia Navigator (Edvinsson, 1997), Intangible Asset Monitor (Sveiby, 1997), and Value Chain Scoreboard (Lev, 2001), all sharing a similar purpose to provide a mechanism for firms

¹¹ Informants in Holland's (2006a) study suggest they voluntarily provide disclosures to meet 'good' practice. Huddart et al. (1999) promulgate that even in the absence of regulation, firm incentives will result in firms gravitating toward the highest disclosure standards.

to report a greater variety of information about the various IC elements.¹² This study focuses on the issues relating to IC reporting rather than its measurement and the next section provides a review of empirical IC disclosure studies.

2.3 PRIOR IC DISCLOSURE STUDIES

In a recent review of the current state of financial and external reporting research, Parker (2007) identified IC accounting research as being still in its infancy and a major area for further research. One important aspect of this is how IC is communicated externally.

The literature on IC disclosure has expanded tremendously over the last decade, examining the substance or content of the disclosures made by firms with the aim of providing an overview of IC disclosure practices. This section focuses on such studies.

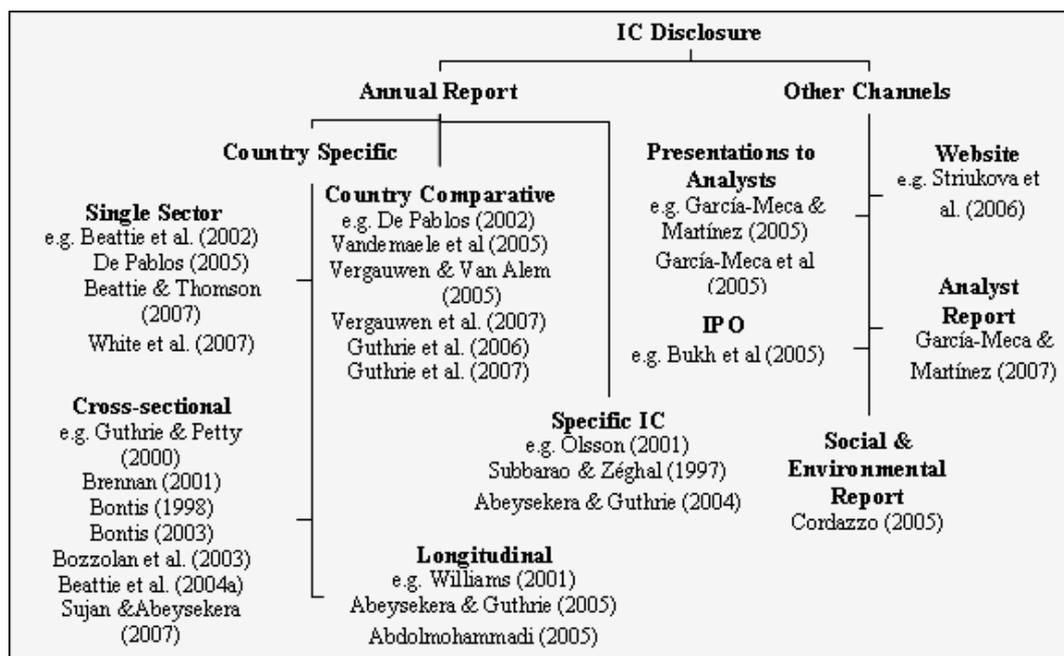
This review of prior empirical IC disclosure studies has been divided into two broad categories: studies of annual reports, and other communication channels. The mainstream of IC disclosure studies has been exploring such disclosure practices in annual reports. IC disclosure studies in annual reports can be subdivided into three broad categories, i.e. country specific studies, international comparative studies and specific IC studies. This categorisation is shown in Figure 2.2.

Country specific studies refer to those studies whose main purpose is to compile the IC disclosure practices of firms of one country either from one industry or in a cross-sectional way at some specific point in time or over a period of time. International comparative studies refer to those studies that attempt to compile the IC disclosure practices of more than one country at some specific point in time or over a period of time and observe the differences or similarities in such practices. Specific IC studies refer to those studies dealing with disclosure of some particular aspects that are deemed to be IC in nature, such as human capital reporting and R&D reporting. Other

¹² Thirty-four known methods of measuring intangible assets are summarised by Sveiby (see Appendix 2-A for a summary figure). Fincham and Roslender (2003) also provide a review of some of these methods. Detailed descriptions of each method are beyond the scope of this thesis.

communication channels refers to studies that attempt to examine IC disclosure practices of firms via media channels other than annual reports, such as IPO prospectuses, corporate websites, and presentations to analysts. Some of these studies are summarised in Appendix 2-B.

Figure 2.2 Summary of Prior Empirical IC Disclosure Studies¹³



2.3.1 COUNTRY SPECIFIC ANNUAL REPORT STUDIES

Most of the IC disclosure studies exploring such disclosure practices in annual reports are cross-sectional and country specific, using content analysis. Examples include studies in Australia (e.g. Guthrie and Petty, 2000; Sujan and Abeysekera, 2007), Ireland (Brennan, 2001), South Africa (April et al., 2003), Italy (e.g. Bozzolan et al., 2003), Malaysia (Goh and Lim, 2004), Hong Kong (Petty and Cuganesan, 2005), the UK (e.g. Williams, 2001; Beattie et al., 2004a), Canada (e.g. Bontis, 1998, 2003), and Sweden (e.g. Beaulieu et al., 2001). Relatively few longitudinal studies have been reported (e.g. Abeysekera and Guthrie, 2005;¹⁴ Williams, 2001).

¹³ The categorisation adopted in this section is not intended to connote any hierarchical relationship. Rather, it is used solely as a means of getting a handle on a fast growing field. At times some of the papers might exhibit traits that belong to more than one class. The main thrust of the paper is then used to allocate it to the most appropriate category.

¹⁴ In Abeysekera and Guthrie (2005), the trends of IC disclosure in the annual reports of top 30 Sri Lankan firms, listed on the Colombo Stock Exchange in the period 1998/1999 and 1999/2000, were investigated. The authors observed an increase in IC disclosure over the years. The research indicated that annual reports lacked a framework and consistent approach for IC disclosure.

One of the earliest studies on examining the extent of IC disclosure in annual reports is Guthrie and Petty (2000). The study reported on the appearance of IC components in the annual reports of twenty cross-sectional listed Australian firms. It adopted Sveiby's (1997) framework, which categorises IC into internal structure, external structure and employee competence, with twenty-four attributes. The IC framework developed allowed replication by other studies (e.g. Bozzolan et al., 2003). It was found that even though there seems to be an awareness of the importance of IC, the reporting practices were far from systematic. The findings suggest that key IC components were poorly understood, inadequately identified, insufficiently managed and not reported within a consistent framework. Where IC disclosures were identified, they were described as discursive and empty rhetoric surrounding the notion of measuring, valuing and reporting on such assets. While this study is able to comment on the lack of meaningful IC disclosure, it provides only limited explanation for the observation of the small non-random sample of Australian firms. The study also lacks transparency in the application of the content analysis. Definitions of IC attributes and the examples of what constitutes each attribute were not provided, which makes the interpretation of results difficult. It is stressed in Beattie and Thomson (2007) that different results can be due to a low level of transparency regarding the detailing coding rules used to allocate information to IC categories and by the absence of an established and comprehensive IC disclosure framework. In addition, there is a lack of consideration in relation to the locations of IC disclosures. No reference is made to where IC disclosures were captured despite an indication in the paper that this information was recorded. Further, the study appears to document only the presence or absence of information pertaining to each IC attribute for a particular company with no reference made to multiple disclosures. Hence, the study does not capture the volume of IC disclosure. In addition, the study excludes disclosures in other forms than text and numbers, such as graphs/pictures. The study also fails to

address any theoretical underpinnings of IC disclosure and the factors that could potentially explain the variations in the level of IC disclosure. Finally, although the coding reliability issue is mentioned in the study by specifying that a second researcher independently confirmed the coding of a first researcher, demonstrating the consistency of coding decisions, no reliability statistics was reported.

Brennan (2001) carried out a similar study and investigated IC disclosure practices in the annual reports of eleven listed Irish technology and people-oriented firms, using content analysis. Manufacturing firms were excluded despite the author having stated that the sector was the one with the most value-added and with the greatest multiplier effect on the economy as a whole. Significant differences between market and book values were identified, suggesting that knowledge-based listed Irish firms had a substantial level of IC. It was found that in the Irish context, IC was rarely referred to in annual reports, and when it was referred to, it was in highly qualitative terms. The findings of the study suggest that there seemed to be little interest in, and demand for, improvements in the measuring and accounting for IC. It was also identified that there was a lack of an established framework when it comes to disclosing IC information in annual reports. However, the results are based on a small, non-random sample of firms and therefore cannot be used to generalise for Irish firms. The author acknowledges the potential impact of size on IC disclosure practice. Probably, one of the main contributions of Brennan's (2001) study is that it reproduced extracts of IC disclosure from annual reports, thus enriching readers' understanding of the nature of the information captured in the study. However, unfortunately, it is still unclear in various instances which IC sub-category the disclosure had been allocated to.¹⁵ As suggested by

¹⁵ For example, the author reproduces an extract in which one company (BCO Technologies plc) states that they acquired ownership of the intellectual rights of their technology and this is classified under intellectual capital, where other researchers might have classified it under Intellectual Property. It is also quoted by the author that the company considers people as their principal assets, however it is unclear which sub-category under Employee Competence did the author allocate the information to. Beattie and Thomson (2007) also reported one of the unclear extracts from Brennan (2001) that a company (SupaRule plc) named five of its major customers. Relational capital includes IC sub-categories of 'customers' and 'company names', both of which could be a logical sub-category for placing this disclosure, leaving the reader unsure as to which sub-category this disclosure was allocated to.

Beattie and Thomson (2007), the explicit linkage of annual report extracts of IC disclosure to IC sub-categories, along with comprehensive coding rules, could substantially reduce such problems. In addition, there are a few limitations in the research method applied in the study, i.e. no reliability testing of the content analysis process was reported; sections of the annual report that have been examined and the locations of IC information captured were unclear; and volume of IC disclosure was not captured (the study appears to have captured the presence/ absence of IC sub-categories). Although the study attempted to explain the variations in IC disclosure practices across the reporting entities, subject to the small sample size, no statistical analysis was conducted.

Bozzolan, et al. (2003) examined voluntary IC disclosures provided in the annual reports of thirty listed non-financial Italian firms, using content analysis. The framework employed in the study was adapted from Guthrie and Petty (2000) with twenty-two IC attributes. Results revealed that Italian firms were aware of the importance of IC and most of the disclosures made were related to external structure. The study is one of the earliest in examining factors that affect IC disclosure practice. Size and industry were found to have significant effects. It also demonstrates an improvement in addressing methodological issues. For instance, it was made clear that sentences were chosen as the unit of analysis for content analysis, repetitive information was only accounted for once, stratified sampling procedure based on industry type and sales was applied, and coding reliability was reported. Coding instrument reliability was acknowledged that explanatory notes on the content of each category and examples of sentences were prepared and discussed before analysis. However, without being privy to these notes and examples, reliability is still difficult to judge. Nonetheless, the study does demonstrate

consistent coding decisions through the use of multiple coders, coding at alternative time periods and by reporting inconsistencies. Statistics were reported on the reproducibility and stability of the content analysis. Similar to Brennan (2001), sections of the annual reports examined and locations of IC information in annual reports were not clear. In addition, Bozzolan et al. (2003) made a direct comparison between the findings of their study with those of Guthrie and Petty (2000) and concluded that, on average, Italian companies disclose more IC information than those in Australia. While both studies used a similar coding framework, their results were obviously different for a number of reasons, including the composition of the sample, different coding approaches (e.g. Bozzolan et al., 2003 appear to have recorded multiple disclosures although not repetitions, whereas Guthrie and Petty, 2000 do not), and potentially different definitions of IC attributes in the framework, which make it difficult to accept the credibility of these comparisons. Different from the previous two studies, Bozzolan et al. (2003) applied an ordinal level of scoring claiming to be measuring the quality of IC disclosure and proposed signalling and agency theories as the theories underpinning IC disclosure practices. Some of the potential limitations are that the study did not consider information disclosed in visual form (e.g. graphs, pictures, diagrams, and figures), the volume of disclosure is not measured, and the small sample size restricts the ability of the study to explore other potential factors that have an impact on IC disclosure practice.

The results in the April et al. (2003) study of IC disclosure practices in South Africa are more encouraging. The research adopted Sveiby's (1997) IC framework, comprising twenty-four attributes, for content analysis and reported a modest level of activity

among the twenty largest listed South African firms. It was found that IC disclosures provided by the sampled firms were also mainly in qualitative terms. External capital was the most disclosed of the three IC categories. Interviews were also conducted and it was found that firms were aware of the importance of IC and knowledge management. The limitations of the study are very much in line with the studies reviewed above that the findings are not generalisable due to the small non-random sample of companies; it is unclear whether the researchers examined the whole annual report or only some sections; no reference was made to the locations of IC information captured; there is a lack of transparency in how the content analysis was conducted;¹⁶ it captured the presence/absence of IC attributes while the quantity of disclosure was not measured;¹⁷ the study precludes information disclosed in forms other than text and number; and no reference was made to the reliability of the content analysis conducted. Similar to Bozzolan et al. (2003), the authors made direct comparisons of their findings with those in Guthrie and Petty (2000). Again, despite both studies applying the same IC framework, such a comparison lacks credibility. In general, the study is purely descriptive with no attempt made to explain IC disclosure from a theoretical perspective or to explore the potential factors that affect IC disclosure practice.

Sujan and Abeysekera (2007) studied IC disclosure in the annual reports of twenty cross-sectional Australian listed firms. The study applied an ordinal level of scoring, similar to Bozzolan et al. (2003), and aimed to capture the quality of the information

¹⁶ It is addressed in the study that a list of definitions of the specific IC attributes was provided to the interview participants, which would also be useful to the reader in understanding IC concept and interpreting the findings of the study. As stressed by the authors, one of the limitations of the study is that the process of content analysis involves a large number of subject 'judgement calls' (April et al., 2003: 169). An example was given as to whether the statement of 'our employees are our greatest asset' contains a specific reference to an IC attribute or it is just a pro forma corporate statement? It is unclear what the authors' opinion was.

¹⁷ The authors explicitly expressed that multiple disclosures were ignored as the majority were considered as repetitions.

disclosed, using a twenty-five attribute IC framework. The results suggest that IC disclosures in Australian firms were largely in qualitative terms, but shifting towards quantitative reporting. IC disclosures identified were unstructured and unsystematic. Relational capital was the most disclosed. Significant industry effects on IC disclosure were found. The study shares similar limitations to the studies reviewed previously, including generalisability, lack of credibility of direct comparison of findings with the previous study (i.e. Guthrie and Petty, 2000), lack of transparency in content analysis approach, quantity of IC disclosure was not considered as multiple disclosure and repetition were not counted, the locations of IC disclosures captured were unclear, IC information disclosed in graph/picture form was not considered, and the small sample size prohibits statistical analysis on factors that potentially affect IC disclosure practice. In addition, the study, like Bozzolan et al. (2003), addressed the reliability of content analysis, i.e. inter- and intra-coder reliability, but without reporting any statistics.

Bontis (2003) differs from the above-reviewed previous IC disclosure studies in that it used a large sample and applied a different research method. The study examined the level of IC disclosure in the annual reports of 10,000 Canadian firms, by performing an electronic keyword search on thirty-nine IC terms. The findings revealed that only seven of the total thirty-nine IC terms were disclosed. It was concluded by the author that there was 'no evidence at all that IC disclosure has garnered any traction for Canadian corporations' (p.16). Although it has been argued that words are more direct and reliable in their coding, and can be more easily categorised and used for large databases (Gray et al., 1995a), there are problems in the keyword search approach. Problems could arise with words that have multiple meanings, synonyms, versions of words for stylistic

reasons (Weber, 1990), and company-specific terms (Beattie and Thomson, 2007). The keyword search approach is questioned on the ground that the meaning of words are frequently context dependent and individual words are unlikely to convey the meaning that could be achieved by consideration of whole sentences (e.g. Stewart and Shamdasani, 1998; Milne and Adler, 1999; and Neuendorf, 2002). Findings in Beattie and Thomson (2007) highlight the inadequacy of electronic keyword searches in the investigation of IC disclosure in annual reports. Moreover, keyword search is limited to text only (Neuendorf, 2002), which prohibits consideration of information reported in other forms, such as graphs/pictures.¹⁸ Therefore, findings of very low IC disclosure from this study, which uses a keyword search approach and a limited item list, appear less surprising.

As can be seen, while the body of IC disclosure literature is growing rapidly, relatively few IC disclosure studies were conducted in the UK context (e.g. Williams, 2001; Beattie et al., 2002, 2004a, b; Beattie and Thomson, 2007) compared to its continental European counterparts. The ones that focused exclusively on UK firms were identified as having typically small sample sizes, which restrict meaningful cross-sectional analyses. For example, Beattie et al. (2002) undertook a study of 11 firms in the food sector; Beattie et al. (2004a) examined 27 listed UK firms in three industry sectors; Beattie et al. (2004b) provided analysis of IC disclosure practice in the annual report of a food processor (Cadbury Schweppes plc) as an example; Beattie and Thomson (2007) provided detailed analysis of the level of IC disclosure in the annual report of a retailing firm (Next plc); Williams (2001) conducted a cross-sectional, longitudinal study covering a 5-year period (1996-2000) of the annual reports of 31 FTSE 100 firms, which

¹⁸ Benefits and disadvantages of the keyword search approach are discussed in Section 4.5.1 of Chapter 4.

indicated a continuous upward trend in the amount of IC disclosure in annual reports amongst the survey sample. All three studies used their own designs of IC checklist.

Overall, these studies suggest that the level of IC disclosure is generally low and described in vague and discursive, rather than numerical, terms (e.g. Guthrie and Petty, 2000; Brennan, 2001), although longitudinal studies suggest an increasing trend in such disclosure over time (Williams, 2001; Abeysekera and Guthrie, 2005; Vandemaele et al., 2005; Vergauwen and Van Alem, 2005).¹⁹ Little attempt has been made to translate the rhetoric into measures that enable the evaluation of IC performance in its various forms. The observed 'low' level of IC disclosure has been attributed to the lack of an established IC reporting framework and the general reluctance by firms to report such information externally (Guthrie and Petty, 2000; Brennan, 2001). The abovementioned studies have highlighted an important phenomenon in their respective countries with regard to IC disclosure by firms. However, the findings are subject to small non-random samples, hence may not be generalisable. Most of the studies are purely descriptive and do not attempt to explain the reasons for differing levels of IC disclosure amongst firms. While IC disclosure studies have been quick to taking on content analysis, few have addressed the associated methodological problems that can distort the findings of such analysis and hinder the interpretation and comparison of findings across studies. Some of these issues are summarised in Beattie and Thomson (2007), i.e. concept boundary problems, coding reliability, annual report material analysed, and type and locations of IC disclosures. According to Beattie and Thomson (2007), for the results to be at least transparent and replicable, content analysis requires a description of how to know when a particular category occurs, any qualifications or exclusions, and examples of categorised information. Review of the abovementioned studies provides evidence

¹⁹ A recent ASB (2007) review on narrative reporting concludes that UK firms are generally good at providing descriptions of their business and markets, strategies and objectives, current development and performance, together with environmental, employee and social issues; although very few discuss contractual arrangements and relationships in any depth.

towards Beattie and Thomson's (2007) observation that there is a pervasive lack of explanation in previous studies of the detailed coding rules used to allocate information to IC attributes. This lack of explanation and transparency makes it almost impossible for the reader to judge what IC disclosures have been captured and difficult to interpret findings of these studies. Reliability issues do not appear to be addressed fully in the majority of IC disclosure studies to date. Prior studies are also generally silent or vague about exactly what parts of the annual report are analysed and the type and locations of IC disclosure captured. In addition, volume of disclosure has been ignored by many of the previous studies. Despite some explicitly stated that IC attributes were mentioned multiple times, but the number of occurrences was ignored on the basis of disclosures being mostly repetitions. Hackston and Milne (1996) highlight that a simple presence/absence approach is a very partial analysis of the amount of disclosures and the results generated may be misleading. The extent to which IC disclosures are repeated is also of interest (Beattie and Thomson, 2007). Relatively few IC disclosure studies were conducted in the UK context. Studies focusing exclusively on UK firms were identified to have typically small sample sizes.

2.3.2 INTERNATIONAL COMPARATIVE STUDIES - ANNUAL REPORTS

While many IC disclosure studies are single country focused, an increasing number of researchers have conducted international comparative studies (e.g. Subbarao and Zéghal, 1997; Vandemaele et al., 2005; Vergauwen and Van Alem, 2005; Guthrie et al., 2006, 2007; Vergauwen et al., 2007).

Vandemaele et al. (2005) examined IC disclosure in the annual reports of 60 firms from three countries, i.e. the Netherlands, Sweden and the UK. Content analysis was applied to the annual reports of each sampled firm over three measurement years (1998, 2000 and 2002), i.e. 180 annual reports in total. The study adapted the Bozzolan et al. (2003)

IC framework. Findings revealed country differences in IC disclosure practice and an upward trend in the average amount of such disclosure over the research period. It differs from all previous IC disclosure studies in that it captures graphic information, which has largely been ignored previously.

Vergauwen and Van Alem's (2005) study replicates Bontis' (2003) study, using a word search approach. The study examines IC disclosure practice in the annual reports of 89 listed French, Dutch and German firms for the years 2000 and 2001. The results are more encouraging than the findings in Bontis (2003). 458 hits of the 38 search terms listed were observed, with 23 of the 38 terms being disclosed. It was posited that firms seemed to understand the importance of managing their knowledge stock. Supporting Vandemaele et al.'s (2005) finding, country differences in IC disclosure practice were also identified in the study.

The Guthrie et al. (2007) study examines the voluntary IC disclosure of Hong Kong and Australian firms. The results revealed that the level of IC disclosure was still relatively low and the disclosures were mainly expressed in qualitative, rather than quantitative, forms. Firm size was found to be positively related to the level of IC disclosure.

The abovementioned studies are also subject to the methodological limitations with regard to content analysis identified in the previous section. In addition, the majority of the international comparative IC disclosure studies are mainly descriptive with few of them examining the potential factors that affect IC disclosure practice.

2.3.3 SPECIFIC ASPECTS OF IC

Among IC disclosure studies, there are also some studies focusing on the disclosure of specific aspects of IC, such as human capital reporting (e.g. Subbarao and Zéghal, 1997; Olsson, 2001; Abeysekera and Guthrie, 2004).

Subbarao and Zéghal's (1997) study is international comparative, and focuses on specific aspects of IC disclosure. It analyses the annual reports of a sample of publicly traded firms in six countries, namely the USA, Canada, Germany, the UK, Japan and South Korea, to provide an international comparison of human resource information disclosure. The study analysed annual reports of firms in the manufacturing and financial service sectors of each country, examining 10 reports from each sector in each country, i.e. a total of 120 annual reports. Human resource information was measured by frequency and word count by five areas: training, value added, equity issue, employee relations, and employee and executive compensation. It was found that countries differed in the disclosure practice of employee related information.

Olsson (2001), in a study of 18 of the largest Swedish firms, attempted to ascertain the level of human capital reporting in annual reports. The study analysed the content of annual reports based on five criteria, namely education and development, equality of employment, recruitment, selection of employees, and CEOs' comments about personnel. For reasons not provided, the study excluded various sections of the annual reports.²⁰ The results showed that the percentage of human resources information did not exceed 7% of the total information provided in the annual report of each of the 18 firms. The author concluded that there was an observable absence of transparency in human capital reporting.

Abeysekera and Guthrie (2004) examined human capital reporting practices in the annual reports of Sri Lankan firms and found variations in the extents of disclosure of human capital items among the sampled firms.

It can be observed that the number of research studies on the disclosure of specific aspects of IC is limited. However, an increasing number of studies incorporate analysis

²⁰ Information about the firms' stock, balance sheets and income statements, pictures and information about the board, auditing reports, holding firms, cash flow analyses, proposals for the distribution of profits, the cover pages, addresses and phone numbers, principles for valuation and accounting paragraphs, and definitions of key ratios were excluded.

at IC subcategory level to enhance the reader's understanding of IC disclosure (e.g. Cerbioni and Parbonetti, 2007).

2.3.4 MEDIA OF IC DISCLOSURE

The review so far has focused exclusively on IC disclosure studies in annual reports. Parker (2005) called for further exploration of the burgeoning media of disclosure. Some IC disclosure studies examine other media of disclosure other than the annual report.

García-Meca and Martínez (2005) and García-Meca et al. (2005) are the only studies in the literature which examined IC disclosure in the presentations to analysts. Both studies examined 257 presentations to analysts of listed Spanish firms during the year 2000-2001. The studies have moved a step further from prior IC disclosure studies by examining the determinants of such disclosures beyond firm size and industry, such as type of disclosure meeting, ownership diffusion and international listing status. This will be discussed further in section 2.3.5 (also see Appendix 2-B).

Bukh et al. (2005) examined IC disclosures in 68 Danish IPO prospectuses from 1999 until 2001, which opened up an interesting area for future research. The results revealed an increase in the amount of IC information disclosed during the overall period examined. The study also investigated the determinants of such disclosure practice. It was found that industry ('high-tech' vs. 'low-tech' firms) and managerial ownership (pre-IPO managerial ownership vs. no pre-IPO managerial ownership) were significant in influencing IC disclosure practice in IPO prospectuses, while firm size and age (young vs. old) effects were not significant. Singh and Van der Zahn (2008) followed the steps of Bukh et al. (2005) and explored IC disclosure practice in a large sample of 444 IPOs listing on the Singapore Stock Exchange between 1997 and 2006. Statistical analysis was employed to explore the potential determinants, i.e. ownership retention,

proprietary costs and corporate governance structure, while controlling for auditor type, prestige of underwriter, reputation of solicitor, leverage, existence of executive compensation package, offering size and company age.²¹

Cordazzo (2005) examined the environmental and social reports of Italian firms and found that IC statements overlap with environmental and social reports. In addition, the Internet is increasingly being used by firms to disclose a diverse range of information (Adams and Frost, 2004). Striukova et al. (2008) studied IC disclosure in a wide range of documents available on 15 UK firms' corporate websites. More recently, García-Meca and Martínez (2007) examined the use of IC information in reports of sell-side financial analysts. It was identified in the study that most of the information included in the analyst reports did not appear in traditional financial statements.

These studies extended IC disclosure research beyond annual reports. It can be observed that research in this respect is still at its developmental stage, which has a great deal of future research potential.

2.3.5 DETERMINANTS OF IC DISCLOSURE

The IC disclosure studies reviewed so far could potentially serve two purposes: 1) to measure the extent to which different IC categories are disclosed; 2) to provide valuable examples with an attempt to understand and capture the IC concept and assist in the development of a generally agreed taxonomy (Beattie and Thomson, 2007).

More recently, the IC disclosure literature has begun to investigate the disclosure process and provide insights on such disclosure practices. Such studies to date are mainly case study and interview based (e.g. Holland, 1997, 1998, 2001, 2003, 2004,

²¹ The study found a significant positive association between IC disclosure and ownership retention, prestige of the underwriter, leverage and company age; a negative influence of proprietary costs on the positive IC disclosure and ownership retention association; and a negative association between IC disclosure and the reputation of the solicitor and offering size. However, the impact of corporate governance structure on the negative interaction of proprietary costs on the ownership retention – proprietary cost association is not supported.

2006a, b; Chaminade and Roberts, 2003; Habersam and Piper, 2003; Roslender and Fincham, 2004), which limits the generalisation of the results. Since the 1960s, researchers have sought to explain differences in the amount of information disclosed in annual reports (Guthrie et al., 2004). However, little is known about the main determinants of IC disclosure practice across firms, especially in a UK context. Therefore, the next stage of IC disclosure research is to go beyond quantification of IC disclosure and use empirical data and objective statistical tools of analysis to explore the potential determinants of such disclosure practice and provide further empirical evidence of IC disclosure process identified by prior qualitative studies.

As can be observed from the review provided in the previous sections, the majority of prior IC disclosure studies typically have small sample sizes, prohibiting rigorous statistical analyses of variables that may affect such disclosure practices and external validity. Consequently, few studies adequately explain the observed variations in IC disclosure practice. Studies that did try to provide explanations mainly focused on size and industry effects (e.g. Bozzolan et al., 2003; Striukova et al., 2008; Guthrie et al., 2006; Sujan and Abeysekera, 2007), with an increasing number of them seeking to ascertain, in statistical terms, other determinants of IC disclosure (e.g. García-Meca et al., 2005; Miller and Whiting, 2005; Cerbioni and Parbonetti, 2007; White et al., 2007).

Brennan (2001) and Miller and Whiting (2005) examined the relationship between 'hidden value' and IC disclosure in annual reports, which was found at best weak. Brennan (2001) compared the market value and book value of the eleven sampled Irish firms. Nine were found to have their market value exceeding book value. It is expected in the study that firms with 'hidden value' are more likely to voluntarily disclose IC information in their annual reports. However, little voluntary IC disclosure was revealed. Miller and Whiting (2005) examined IC disclosure practice in the annual

reports of seventy New Zealand listed firms. No relationship between 'hidden value' (market-to-book ratio as a proxy) and level of IC disclosure was found.

Other studies that have examined the relationship between IC disclosure, in reports other than annual reports (presentations to analysts and analyst reports), and market-to-book ratio include García-Meca et al. (2005), and García-Meca and Martínez (2005, 2007), where market-to-book ratio is a proxy for the informativeness of financial statements regarding underlying business and growth opportunities. Statistical analysis was used in all three studies. For example, García-Meca et al. (2005) examined the relationships between IC disclosure in the presentations to financial analysts and nine variables. Size and type of meeting were significant; however, ownership diffusion (measured by IBEX listing), international listing status, leverage, market-to-book ratio, industry type, profitability and existence of investor relations department were not significant. García-Meca and Martínez (2007) examined the association between the use of IC information in analyst reports and nine variables. Profitability and type of report were significant, while the result for market-to-book ratio was only marginal. International listing, firm risk, size and analyst recommendation were all identified as insignificant.

Two recent studies have investigated the determinants of IC disclosure practice of biotechnology firms. White et al. (2007) investigated the key drivers of the level of IC disclosure in the annual reports of 96 Australian biotechnology firms, using content analysis. The relationships between the level of IC disclosure and five variables were examined. Firm size and board independence were found to be significant. The effect of leverage was only marginal. Firm age and share concentration were not significant.

On the other hand, Cerbioni and Parbonetti (2007) examined the effects of corporate governance on IC disclosure in the Operating and Financial Reviews of 54 European biotechnology firms encompassing ten different countries. The study applied content

analysis based on a modified version of the Sveiby (1997) framework, measuring IC disclosure index based on an ordinal level scoring approach. The study brought time and economic dimensions to the measurement of IC disclosure and excluded repeated information and information containing general assumptions (e.g. ‘we strongly believe that...’). One of the disadvantages with such an approach is that it ignores the emphasis given by a firm to a particular content category. Beattie and Thomson (2007) posit that the extent to which IC disclosures are repeated is also of interest. While repetition introduces redundancy, it is a communication strategy used for emphasis and reinforcement and signals the importance placed by management upon these messages (Beattie and Jones, 2001). Variables examined in the study include board size, board composition, role duality, board structure, ownership structure, firm size, age, profitability, leverage, growth opportunities (market-to-book ratio), listing status, and institutional setting. Taking the results for overall IC disclosure as an example, negative associations were found with board size, structure and role duality; positive relationships were identified with firm size, profitability and board composition; and variables such as ownership structure, leverage, market-to-book ratio, listing status, legal enforcement, and firm age were not significant.²²

The foregoing discussion suggests that the literature on the determinants of IC disclosure is still limited and inconclusive. Disclosure practice is a complex process and affected by a broad set of factors (Archambault and Archambault, 2003; Haniffa and Cooke, 2002). Apart from the company characteristics (e.g. firm size and industry type) that may have impact on IC disclosure practice, other factors such as corporate governance structure and market factors could also have impact on such disclosure activity. It can be observed that studies investigating determinants of IC disclosure are still at the early stage of development, especially in the UK context.

²² The study also examined the relations between the level of IC disclosure at the subcategory level and the identified explanatory variables.

2.3.6 RESEARCH METHODS APPLIED - PRIOR IC DISCLOSURE STUDIES

The main research method used in prior IC disclosure studies is content analysis, but some use questionnaire surveys (e.g. Bontis, 1998; De Pablos, 2003; Bozbura, 2004; Gallego and Rodríguez, 2005; Tayles et al., 2007), or case studies and interviews (e.g. Chaminade and Roberts, 2003; Habersam and Piper, 2003; Holland, 2001, 2003, 2006b). De Pablos (2003) examined the IC reporting practices of top Spanish firms using a questionnaire survey approach. The study reported that Spanish firms disclosed less IC information compared to the results of the Danish and Swedish counterparts, where the differences could be due to differences in sample size and research methods applied. Gallego and Rodríguez (2005) examined the significance of intangible assets in Spanish firms using a 25-item questionnaire. Bozbura (2004) used both questionnaire survey and interview techniques for examining the existence of IC measurement in Turkish firms. Tayles et al.' (2007) questionnaire survey shows external IC reporting to be less commonly employed by Malaysian firms. Holland (2001), Holland (2003) and Holland (2006b) interviewed fund managers and concluded that the market demands IC information and has incentives to use such information.

It has been argued that the content analysis research methods applied in prior IC disclosure studies lack specificity, where some studies document only the presence/absence (binary coding scheme) of IC items in a predetermined checklist (e.g. Guthrie and Petty, 2000; Brennan, 2001; Williams, 2001; April et al., 2003; Goh and Lim, 2004; García-Meca et al., 2005; White et al., 2007) without distinguishing the presentational format of the disclosures captured. However, this does enable the comparison of the range of items disclosed in a predetermined checklist across firms.

Others use ordinal level scores to capture the level of IC disclosure (e.g. Bozzolan et al., 2003; Vandemaele et al., 2005; García-Meca and Martínez, 2005; Guthrie et al., 2006;

Cerbioni and Parbonetti, 2007), which distinguishes the type of information captured by assigning different weights based on its perceived importance.²³ An ordinal level score (an extension of weighted scoring approach) is viewed as conveying the importance of IC information disclosed. Text (i.e. qualitative) and numerical (i.e. quantitative) disclosures are often distinguished, with other types of disclosure, such as graphs and pictures, being frequently ignored, hindering the grasp of a comprehensive picture of firms' IC disclosure practices. Vandemaele et al.'s (2005) study is an exception which gives a score of 2 for IC disclosure in graphs. However, such a scoring approach fails to reflect on the volume of IC disclosure.

Some studies search for keywords or keyword combinations (e.g. Bontis, 2003; Vergauwen and Van Alem, 2005; Abdolmohammadi, 2005). The benefits and drawbacks of such approach for content analysis are discussed in Chapter 4.

Few IC disclosure studies (e.g. Subbarao and Zéghal, 1997; Miller and Whiting, 2005; Striukova et al., 2008) capture the volume of disclosures, which requires the counting of the number of times each item on a checklist occurs, length or number of words. Studies such as April et al. (2003), Bozzolan et al. (2003), and Cerbioni and Parbonetti (2007) referred to multiple times of disclosure and explicitly stated that such disclosures were only considered once. Such an approach is criticised as a very partial analysis of the amount of IC disclosure and may lead to misleading results, given that repetition and the volume of information disclosed reflects on the importance placed by management on such messages (Beattie and Jones, 2001; Beattie and Thomson, 2007).

Chaminade and Roberts (2003) identified the need for a common framework and a lack of tools and models to help firms develop their systems for the management and

²³ For example, Guthrie et al. (2006) and Sujana and Abeysekera (2007) assign a score of 1 for qualitative disclosures, a score of 2 for numerical (non-fiscal) form of disclosure and a score of 3 for disclosures in monetary form; García-Meca and Martínez (2005) gives a score of 1 for disclosures in qualitative form and a score of 2 for quantitative disclosures. A score of 0 has been given to non-disclosure in all ordinal level scorings.

reporting of IC. The argument is supported by Beattie and Thomson (2007), that the lack of an established and comprehensive IC reporting framework makes interpretation of results difficult. They argue that the content analysis research method adopted in prior studies lacks transparency, specificity, uniformity and rigour of measurement in IC disclosure and that these deficiencies may give rise to misleading evidence. A detailed discussion of IC disclosure measurements is provided in Chapter 4.

2.3.7 ANALYTICAL DISCLOSURE STUDIES

Within the ‘disclosure literature’, two disparate strands of studies have been summarised in Beattie (2005): one strand is the empirical literature, which covers descriptions of actual disclosure practices, studies of the disclosure decision and the capital market consequences of those decisions; the other is the analytical, seeking to model the disclosure decision, which are rigorous mathematical models based upon a set of simplifying assumptions, designed to highlight one particular aspect of the disclosure decision.

The IC disclosure studies reviewed in the previous sections fall into the former strand. Verrecchia (2001: 97), in his review of the disclosure literature, refers to the latter strand as ‘association-based’, ‘discretionary-based’ and ‘efficiency-based’ disclosure studies. Association-based research addresses the effects of disclosure on investors’ actions, primarily through the behaviour of asset equilibrium prices and trading volume; discretionary-based research examines ‘how managers and/or firms exercise discretion with regard to the disclosure of information about which they may have knowledge’; and efficiency-based research considers which disclosure practices are preferred, given no knowledge of the information that could/would be disclosed.

In the early analytical disclosure literature, two main disclosure theories emerged, which focused on the incentives and disincentives for voluntary disclosure. The analytical research on the extent to which competitive capital market forces do, or do not, affect firms' extent of financial disclosure, predicted that where disclosures were costless, market forces would be sufficient, without the need for disclosure regulations, to cause managers to disclose private information (Grossman, 1981; Milgrom, 1981; Jovanovic, 1982). Milgrom (1981) showed that under conditions where disclosures were costless to the reporting entity and were externally verifiable, outsiders would interpret non-disclosure as implying bad news, and price a firm's assets as if the non-disclosed news were the worst possible. As a result, managers who seek to maximise their firm's value would be induced to disclose, both good and bad news. Jovanovic's (1982) concluded that in a world where false claims cannot occur due to fear of litigation or the loss of future business, the free market offers ample incentives for disclosure. He argues that due to competitive pressure for capital, a firm that has a higher quality reporting reputation can attract more investments at a lower cost of capital due to less uncertainty about the firm because it is reporting more extensive and reliable information. However, as has been specified by the author, the results should be viewed with care, as they are dependent on the special feature of the model used in the study, especially the assumed impossibility of misrepresentation. Akerlof (1970) assumes the opposite that truthful, credible disclosure is prohibitively expensive, and that since all sellers would misrepresent quality, their claims are meaningless. Therefore, despite the strong results of Jovanovic's (1982) study, the specialised nature of the model limits their relevance for policy. Another example of special assumptions made in the model include that the

study stresses ‘brand-specific’ information, i.e. consumers know the distribution of quality (Jovanovic, 1982: 43). Whatever the seller may disclose does not cause demanders to revise their opinions on the quality of the other products sold in the market. However, there will be situations in reality that consumers do not know the distribution of quality, where there would be an externality that the seller’s disclosures would teach consumers not just about his/her product, but about the products of the competitors as well.

Verrecchia (1983) extended Milgrom’s (1981) analytical model by showing that less than full disclosure would result where disclosures engender proprietary costs²⁴ – i.e. proprietary cost theory, which showed that ‘the incentive to disclose information is a decreasing function of the potential proprietary costs attached to disclosure and an increasing function of the favourableness of the news’ (see Beattie, 2005: 101). Verrecchia (1990) subsequently argued that the quality of private information that managers possess may also affect the threshold level for disclosure. In line with signalling theory, the author reasoned that managers will be willing to disclose proprietary information if the information is of higher quality for fear that non-disclosure will result in the market discounting the value of the firm’s assets. In addition, Gigler (1994) argues that even though voluntary disclosure is unaudited and can be manipulated by management; such disclosures are credible since firms incur

²⁴ Lang and Lundholm (1993) and Skinner (2007) consider costs resulting from the disclosure of potentially damaging information (to the firm’s competitors) as proprietary costs. Voluntary disclosures that reveal proprietary information will not only benefit user groups such as shareholders but also competitors who can act on the information disclosed to the competitive disadvantage of the disclosing firm. Gibbins et al. (1990) argue that on the one hand, managers wish to protect proprietary information in order to exploit its potential economic advantages, while on the other hand, they wish to disclose information to enhance the firm’s value. Adams (1997), Healy and Palepu (2001) and Williams (2001) also suggest that firms manage information disclosed to investors in order that they do not disclose information affecting their competitive advantage. Other studies, such as Darrough and Stoughton (1990), Wagenhofer (1990), Feltham and Xie (1992), and Newman and Sansing (1993) suggest that firms withhold private information to avoid proprietary costs.

proprietary costs to voluntarily disclose such information. Verrecchia (2001) illustrates how the selection among disclosure policies may require trading off reductions in the 'cost of capital' obtained by making voluntary disclosures against the costs of unintentionally divulging proprietary information to a competitor through the firm's disclosures. The author calls disclosures that make these trade-offs optimally 'efficient', and the associated theory as one involving the 'information asymmetry component of the cost of capital'.

In considering proprietary cost and signalling theories, Dye (1986) modelled cases where managers are endowed with both proprietary and nonproprietary information, and concluded that mandatory and voluntary disclosures may complement each other. His model established that in situations where a manager's information set consists of two signals, x and y , where the disclosure of y is assumed to produce proprietary costs while the disclosure of x will not, mandating the disclosure of the non-proprietary information x , will affect the voluntary disclosure of y . In such circumstances, he argues that the increase in the mandatory disclosure of non-proprietary information will reduce the benefits of withholding correlated proprietary information. It can also be added that proprietary information that is rendered to be mandatory disclosure for all competitor firms alike, would tend to eliminate its proprietary cost to any particular competitor firm. Therefore, the effect of an increase in mandatory disclosure of information that is, or is rendered, nonproprietary is an increase in incentives to disclose voluntarily the correlated proprietary information. Overall, proprietary information theory suggests that management needs to balance the costs and benefits arising as a result of the disclosure

of proprietary information when deciding to voluntarily provide additional corporate information.

Diamond's (1985) information cost savings theory showed analytically that if a company commits to a policy of disclosing relevant information, it will pre-empt investors' private information search activity, providing an improvement in welfare by reducing overall information production costs. In other words, the additional information production costs of preparers are outweighed by the reduction in information search costs by users (Beattie, 2005).

Walker (1997) provides a useful review of these and subsequent economic theories of financial information supply based on game theory and information economics. The assumptions of these models relate to (i) the manager's objective, (ii) the users of disclosed information (investors only or investors and third parties) and (iii) whether or not mis-representation by management is possible. Walker notes that while these models cannot capture the complexity of real-life disclosure decisions, they do isolate key influences: the objectives of corporate executives, financing requirements of companies, managerial incentives, and how third parties use corporate disclosures. In addition, Dye (2001) argues that the theory of voluntary disclosures is a special case of game theory with the following central premise: any entity contemplating making a disclosure will disclose information that is favourable to the entity, and will not disclose information unfavourable to the entity. In order to interpret sensibly the remarks of the entity making - or not making - a disclosure, one should anticipate the entity's incentives to behave in the preceding fashion (Dye, 2001).

Analytical models predict that disclosure reduces information asymmetries in the capital market, reduces the risk faced by investors when forecasting future payoffs of their investment thereby increases liquidity and reduces the cost of capital (e.g. Verrecchia, 2001; Dye, 2001; Easley and O'Hara, 2004). Kim and Verrecchia (2001) investigate the relationship between overall disclosure, returns, and trading volume. Decreased disclosure is associated with the market participants relying more on trading volume information to draw inferences about better-informed investors' private information on firm value as compared to the firm's disclosure actions. The intuition is that when a firm has greater disclosure, investors rely less on trading volume for information and more on the disclosure (e.g., audited financial statements). Amihud and Mendelson (1986), Diamond and Verrecchia (1991), and Baiman and Verrecchia (1996) all link improved disclosure quality with reduced asymmetric information, improved market liquidity and reduced cost of capital.

Models of disclosures have also been developed based on the idea that different investors may interpret information differently (e.g. Bushman et al., 1996; Dye, 1998): some sellers fail to make nondisclosures because they have not received new information, whereas other sellers are deliberately withholding information. Sophisticated investors know which of these two possible explanations is actually responsible for a firm's nondisclosure, whereas unsophisticated investors cannot distinguish between these sources of nondisclosure. Such models have two primary empirical predictions: 1) as the probability that investors are sophisticated increases, a seller's propensity for making disclosures also increases, and 2) whether there is likely

to be conflict or cooperation between accounting standard-setters and value-maximising managers of firms depends upon the level of investors' sophistication.

Analytical models are able to address questions that are not addressable or extremely difficult to address in empirical studies. For example, it is unlikely that accounting researchers will capture the specific nature of the product market competition responsible for generating proprietary costs accurately.

While the formal analytical models have rigour, they are inevitably based on a set of simplifying assumptions that seldom captures the complexities of the real world. Such questions have been raised in Dye (2001), e.g. the treatment of multi-period trading models discussed in Verrecchia (2001). Verrecchia rationalises the development of two period models (i.e. there is one round of trading in advance of the public disclosure and one round of trading following the public disclosure) because such a separation allows for decoupling the demand for trading derived from investors' portfolio rebalancing concerns from the demand for trading derived from the arrival of new information in the public disclosure. Dye (2001) questions the possibility in separating the economic effects of the two distinct sources of trading on 'real' data. In addition, Dye (2001) stresses the problem of determining the length of a 'period' that most discrete time analytical models are silent about. The length of a period could be of a fiscal year, a month, the length of a trading session, etc. It would be helpful if guidance on how to establish bounds on the length of a period is provided.

Analytical disclosure studies undoubtedly offer significant advantages in sharpening our understanding of key relationships, but the downside is that such papers often have no

immediate policy relevance (Beattie, 2005). The theoretical difficulties presented by the accounting setting of incomplete and imperfect markets limit the number of studies undertaken on this type of research (Dye, 2001; Beattie, 2005).

2.4 SUMMARY

The main objective of this chapter is to outline background issues that help in understanding the overall context of the research. Firstly, it provides a review of definitions and classifications of intellectual capital (IC) and addresses its importance for business enterprises in creating competitive advantage and value in the current business and economic environment. There is no generally accepted definition of IC. Whilst most studies agree that it contains categories relating to human, structural and relational capital, there is little consensus as to what each category includes. The concept of IC is continuously evolving. The field is now at the stage of consolidating the harvest of the prior literature and bringing in new perspectives, such as a fourth category of ‘connectivity capital’ (Habersam and Piper, 2003), and employee wellness as IC (Roslender et al., 2006).

Given the importance of IC, there must be a credible way of reporting such assets to the market to provide the investment community with more comprehensive information and assist in more accurate firm valuations. Therefore, the second objective of the chapter is to provide a review on the limitations of traditional accounting in accommodating IC. The current accounting treatment of IC in financial statements has resulted in a significant loss of relevance, as many businesses have become more and more knowledge-intensive. This has created an increasing gap in estimates of firm value based on market value and book value. The existence of such gaps can be interpreted as being indicative of the fact that goodwill has been superseded by a potent new source of

value creation: IC. The inability of conventional financial statements in reflecting on such value creates greater demand for external value-relevant IC disclosure.

Thirdly, the chapter provides a review of empirical IC disclosure studies and helps in identifying the literature gap. The literature on IC disclosure has expanded tremendously during the last decade. Some of these writings explore the general state of IC disclosure in one or more countries. Some deal with some particular aspects that are deemed to be IC in nature and of relevance to IC disclosure (e.g. human capital reporting); others investigate various communication channels other than annual reports. While findings vary, the level of IC disclosure has typically been found to be low (e.g. Guthrie and Petty, 2000; Brennan, 2001; Bontis, 2003), although increasing with time (e.g. Williams, 2001). The review of empirical IC disclosure studies identified five issues which partly shape the research aims and design for this study:

- 1) Lack of IC disclosure studies within the UK context. As outlined in the previous sections, the majority of country specific research on IC disclosure has focused on non-UK European firms. Although there are a few isolated studies that have been carried out in the UK such as Williams (2001), Beattie et al. (2002, 2004a, b), Beattie and Thomson (2007), and Sujan and Abeysekera (2007), IC disclosure studies that specifically examine UK firms are still underrepresented in the published research;
- 2) Small sample size of prior IC disclosure studies, especially UK studies, which prohibits more rigorous cross-sectional statistical analyses;
- 3) Studies examining the IC disclosure process were mainly case study or interview based, with few studies examining the main determinants of IC disclosure practice across firms in annual reports using statistical analysis, especially from a cross-sectional perspective within the UK context;

4) Lack of transparency in the research methods applied, and specificity and rigour in the measurement of IC disclosure (Beattie and Thomson, 2007). The authors call for greater transparency in IC disclosure studies and more rigorous IC disclosure measurements;

5) Most prior IC disclosure studies have been somewhat superficial, with few providing any theoretical basis for their research findings, despite the literature suggesting a number of theoretical perspectives that may help explain the variation of IC disclosure practices, e.g. information asymmetry, agency, and signalling theories. A discussion of some of the theoretical underpinnings for IC disclosure is provided in Chapter 3.

This literature review suggests that more IC disclosure research is required to address these concerns. Numerous calls have been voiced for data and research that produce measurable outcomes, and have a direct and positive influence on practice (e.g. Petty and Guthrie, 2000; Guthrie et al., 2001). In seeking to address these issues, this thesis aims to: 1) examine current IC disclosure practices in the UK context; 2) explore the main determinants of IC disclosure practice from various theoretical perspectives; and 3) employ a more transparent content analysis approach and more rigorous measurements in IC disclosure. The next chapter explores the motivations for IC disclosure and factors that could potentially affect such disclosure practice.