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INTELLECTUAL CAPITAL REPORTING
BY THE NEW ZEALAND
LOCAL GOVERNMENT SECTOR

A thesis
submitted in fulfilment
of the requirements for the degree
of
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ABSTRACT

Sweeping financial management reforms occurred in New Zealand during the late 1980s and early 1990s which radically changed the face of the New Zealand public sector. These reforms sought to significantly restructure and reorganise local government thereby improving their effectiveness and efficiency and improving their accountability to their stakeholders. The principal vehicle for the discharge of this accountability is the annual report, which must be prepared according to Generally Accepted Accounting Practice (GAAP) and commercial principles.

Organisations in the private sector are beginning to recognise the value of accounting for intellectual capital (IC) (see for example Quinn, 1992; Brooking, 1996; Sveiby, 1997; Edvinsson & Malone, 1997; Bontis, Dragonetti, Jacobsen & Roos, 1999; Guthrie, Petty & Johanson, 2001; Bounfour, 2003). Studies on the measurement, management and reporting of IC have been undertaken internationally in Asia (Abeysekera & Guthrie, 2005; Goh & Lim, 2004; Ordenez de Pablos, 2002), Australia (Guthrie & Petty, 2000), Europe (Bozzolan, Favotto and Ricceri, 2003; Olsson, 2001; Ordenez de Pablos, 2004), United Kingdom (Collier, 2001; Williams, 2001) and Ireland (Brennan, 2001).

Despite the significant research interest in the field of intellectual capital internationally, scant attention has been paid to intellectual capital reporting by commercial organisations in New Zealand. An extensive review of the IC literature yielded only two New Zealand based studies (Miller & Whiting, 2005; Wong & Gardner, 2005). Further, no studies to date have addressed intellectual capital reporting by local governments in either New Zealand or internationally. This study aims to fill this gap through the development of an intellectual capital disclosure model that could be applied to local authorities.

The research describes and explains the development of a disclosure index used to measure the extent and quality of current intellectual capital disclosure by local authorities in New Zealand. The index was developed through a consultative process with a panel of local government stakeholders which was used to establish the weightings for each item. The final index comprised 26 items divided into three

categories: internal capital, external capital and human capital. The 2004/2005 annual reports of 82 New Zealand local authorities were scored for extent and quality of disclosure against the index.

The results indicate that intellectual capital reporting by local authorities is varied. Manukau City Council scored the achieved the highest overall score (76%) out of the 82 reports analysed while Whakatane District Council scored the lowest with 33%. The most reported items were *joint ventures/business collaborations* and *management processes*. The least reported items were *intellectual property* and *licensing agreements*. The most reported category of intellectual capital was internal capital, followed by external capital. The least reported category was human capital. The findings indicate a number of areas of reporting that could be improved in order to meet with stakeholder disclosure expectations. In the internal capital category, intellectual property disclosures could be improved. In the external capital category disclosure concerning ratepayer demographics and licensing agreements could be improved. In the human capital category, disclosure of most items could be improved, in particular, entrepreneurial innovativeness and vocational qualifications.

The study provided an insight into the current level and quality of intellectual capital disclosure by the NZ local government sector. The results indicated that local authorities are disclosing some aspects of intellectual capital in their annual report, however there is no consistent reporting framework, and many areas of IC disclosures are not meeting stakeholder expectations. More research is needed in the area of intellectual capital reporting in the public sector. This study provides a preliminary framework which can be used by local authorities to enhance intellectual capital disclosures in their annual reports.

We do not have any Intellectual Capital and there is therefore none reported in the Annual Reports of the Wairoa District Council.

Comment from a representative of
Wairoa District Council, August 2005.

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LIST OF ABBREVIATIONS

AAAFASC	American Accounting Association Financial Accounting Standards Committee
BSC	Balanced Scorecard
CCO	Council Controlled Organisation
CEO	Chief Executive Officer
DATI	Danish Agency for Trade and Industry
ED	Exposure Draft
FASB	Financial Accounting Standards Board
FASC	Financial Accounting Standards Committee
GAAP	Generally Accepted Accounting Practice
GLC	Government Linked Corporation
IAM	Intangible Assets Monitor
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IC	Intellectual Capital
ICD	Intellectual Capital Disclosure
ICS	Intellectual Capital Statement
IFRS	International Financial Reporting Standard
LGA	Local Government Act 2002
LCG	Local Government Commission
LTCCP	Long Term Council Community Plan
MERITUM	Measuring intangibles to understand and improve innovation management
PAI	Public Accountability Index
SCP	Special Consultative Procedures
SME	Subject-Matter Expert
SSAP	Statement of Standard Accounting Practice

CHAPTER ONE

RESEARCH INTRODUCTION

1.1 INTRODUCTION

Intellectual capital is a discipline that has experienced rapid growth during the last two decades. Like other accounting disciplines such as management accounting, it was not academics that developed the tools and techniques for measuring and managing the value drivers of the discipline, but practitioners themselves that worked at the ‘coal face’. The intellectual capital movement emerged in the late 1980s when a relatively small group of forward thinking practitioners began to seek alternatives to traditional accounting practice. They sought methods that adequately accounted for the value drivers of the ‘new’ economy. This new economy is the ‘information age’ and a key value driver is knowledge (Bontis, Dragonetti, Jacobsen, & Roos 1999; Petty & Guthrie, 2000). By accounting for intellectual capital, accountants seek to capture the value of knowledge that is owned by the organisation and harness its value-creating potential.

The intellectual capital literature published thus far has been concerned with the measurement, management and reporting of intellectual capital in corporate, for-profit organisations. Intellectual capital is disclosed by corporate entities in one of two ways, disclosure in the annual report itself, or as a supplement to the annual report. It is argued that by disclosing information in relation to the intellectual capital of a firm, shareholders and other stakeholders are better able to judge the financial performance and financial position of an organisation.

It is argued in this study that the same applies to the public sector. This research examines whether local government authorities in New Zealand currently disclose intellectual capital information to their stakeholders. The research focuses on the annual report of local government authorities as an important means of communication between local authorities and their stakeholders. The research examines current intellectual capital disclosure levels in local government annual reports, and through a consultative process with local government stakeholders develops a model of intellectual capital disclosure.

This chapter includes a brief background to the local government sector and introduces the local government reforms of the 1980s and 1990s. The chapter provides justification for the research and presents a problem statement and objectives. The research methodology and method is introduced, followed by an outline of the thesis. The chapter concludes by outlining the scope and limitations of the research.

1.2 BACKGROUND

During the late 1980s and early 1990s the local government sector in New Zealand underwent significant reform. The reform was part of the broad central government financial management reforms of the time that aimed to increase the efficiency, effectiveness and accountability of all units of government. These reforms were facilitated by the legislative requirement in the *Public Finance Act 1989* that required all government entities (both central and local government) to adopt the accrual accounting system and Generally Accepted Accounting Practice (GAAP) for financial reporting.

Reform of the local government sector changed the face of local government. The reforms drastically reduced the number of local authorities from over 600 local bodies to 86¹ smaller and more efficient authorities (Wallis & Dollery, 2000). Clear lines of responsibility were set out by the *Public Finance Act 1989*, as well as the requirements to adopt accrual accounting and commercial principles. These changes had the primary goal of increasing the accountability of the local governments to their communities.

Annual reports are considered to be the primary mechanism for the discharge of accountability to stakeholders. This is considered true not only for commercial entities, but also for local governments who must prepare their financial statements according to commercial principles. Increasingly in the corporate sector, entities are recognising the value of intellectual capital reporting for enhancing the transparency and information content of their annual reports. In this study it is posited that local governments should

¹ As of 6th March 2006 Banks Peninsula District Council amalgamated with Christchurch City Council reducing the number of local authorities from 86 to 85. For more detail see <http://www.localcouncils.govt.nz>

be disclosing information on their intellectual capital in their annual reports as part of their accountability obligations to their stakeholders.

To date, limited research has been undertaken regarding intellectual capital reporting and disclosure in the New Zealand context. An extensive literature review identified two studies that investigate intellectual capital disclosure in the New Zealand private sector (Miller & Whiting, 2005; Wong & Gardner, 2005). Most prior research on intellectual capital disclosure has been conducted in other regions including Asia (Abeysekera & Guthrie, 2003; Goh & Lim, 2004; Ordenez de Pablos, 2002), Australia (Guthrie & Petty, 2000), Europe (Bozzolan, Favotto and Ricceri, 2003; Ordenez de Pablos, 2004), United Kingdom (Williams, 2001) and Ireland (Brennan, 2001).

In addition to the lack of New Zealand specific studies on intellectual capital reporting by the private sector, the literature review did not identify any research investigating intellectual capital disclosures by the public sector. The review however, identified one international study on IC in the public sector. Collier (2001) presented a case study of intellectual capital within the UK police force which focused on how IC was acquired, utilized and reported.

This research is important for two reasons. First it aims to fill the gap in the New Zealand literature by providing an exploratory study into the extent of intellectual capital disclosure by the New Zealand local government sector, and second, it contributes to the international intellectual capital and public sector literature.

1.3 PROBLEM STATEMENT

Due to the lack of intellectual capital disclosure studies in the New Zealand public sector, the quality and extent of intellectual capital reporting by the New Zealand local government sector is not known.

This study posits that the level of intellectual capital disclosure by the New Zealand local government sector is relatively low and the discharge of accountability to local government stakeholders is not being fully achieved.

1.4 RESEARCH PURPOSE AND OBJECTIVES

The purpose of this research is to develop and apply an intellectual capital disclosure framework specifically to the annual reports of the local government sector. The framework, created in consultation with local government stakeholders, will be applied to the annual reports of local authorities to measure the current level of intellectual capital reporting in New Zealand. To achieve this, the research has three specific objectives:

- To develop a disclosure index for assessing the extent and quality of intellectual capital disclosures in the annual reports of the New Zealand local government sector;
- To apply the index to the 2004/2005 annual reports of the local government sector in order to determine the level of current intellectual capital reporting; and
- To make recommendations about intellectual capital reporting by the New Zealand local government sector in light of the research findings.

1.5 METHODOLOGY AND METHOD

This research adopts the scientific approach to determine the current level and quality of intellectual capital reporting by the New Zealand local government sector. The research methodology adopted in this research is grounded in Guba & Lincoln's (1989) third dimension of research which seeks to judge a research subject against a pre-determined set of standards.

The research uses a disclosure index as part of a content analysis study of the annual reports of the New Zealand local government sector. The index was constructed with the assistance of a 14-member stakeholder panel that was asked to verify intellectual capital items and indicate the importance of disclosure of the items in the annual report. The index was applied to eighty two 2004/2005 New Zealand local authority annual reports to assess the current extent and quality of intellectual capital disclosure.

1.6 OUTLINE OF THESIS

- Chapter Two Review of the New Zealand Government Sector:** This chapter reviews the New Zealand local government sector with the purpose of providing a background to the study. The reform of the public sector is tracked through the financial management reforms of the late 1980s and early 1990s. The chapter also considers the reform of the local government sector. It investigates how the accountability of local government was increased through the adoption of commercial principles and financial reporting under Generally Accepted Accounting Practice (GAAP).
- Chapter Three Literature Review:** This chapter provides a thorough review of the intellectual capital literature. The chapter defines intellectual capital and reviews the major models that have been developed to measure, manage, and report intellectual capital in the corporate sector. The chapter examines the current New Zealand and international financial reporting requirements for the disclosure of intellectual capital in annual reports. The chapter explores the future direction of intellectual capital research proposed by leading intellectual capital researchers. Finally, the chapter explains how intellectual capital reporting can be applied to the public sector and how the disclosure of intellectual capital in the annual reports of local government can facilitate the discharge of accountability to stakeholders.
- Chapter Four Research Methodology and Method:** This chapter outlines the methodology adopted in this research. A brief overview of the method is presented, which is expanded on in Chapter Five.
- Chapter Five Development of the Intellectual Capital Disclosure Index:** This chapter presents the development of the disclosure index in detail. The stakeholder panel used in the selection of index items and allocation of ‘importance’ weightings for each item is described.

The chapter concludes with a presentation of the final disclosure index.

Chapter Six Results and Discussion: This chapter presents the results obtained through the application of the intellectual capital disclosure index to the annual reports of local authorities, and discusses the findings of the study.

Chapter Seven Summary, Conclusions and Future Research: This final chapter summaries the research findings and concludes the research. Opportunities for future research are presented.

1.7 SCOPE AND LIMITATIONS

1.7.1 Scope

This research does not encompass the New Zealand public sector as a whole. It focuses on the local government sector. At the commencement of this research, the local government sector comprised 85 distinct local authorities.

The research involves a detailed analysis of the annual reports of the local government sector. It does not attempt to determine the level of compliance with annual report disclosure legislation as stated by the *Public Finance Act 1989* and the *Financial Reporting Act 1993*. Rather, it measures the disclosure of certain intellectual capital items in the annual reports of local governments against a framework incorporating stakeholder opinions on the importance of intellectual capital disclosure.

1.7.2 Limitations

The exploratory nature of this research leads to inherent subjectivity in a number of areas of this study. A brief summary of the limitations are presented here which are discussed in further detail in Chapter Seven.

There is a certain amount of subjectivity in:

- Selecting items for disclosure;

- Weighting the disclosure items for their relative importance;
- Developing criteria for assessing the quality of the disclosures; and
- Scoring the annual reports.

Researchers such as Hooks (2000) and Marston and Shrivies (1991) acknowledge subjectivity in, and difficulty of, constructing a disclosure index. This is especially applicable to this study as there is no prior literature relating specifically to intellectual capital disclosure of local government on which to base the disclosure index items. This has been mitigated to some extent by the selection of the disclosure items for the index from relevant literature in the corporate sector and seeking validation and feedback on those items from a panel of relevant local government stakeholders.

Despite the limitations of this study, it offers a valuable contribution to the research on intellectual capital reporting in New Zealand and internationally. In addition it provides a preliminary framework through which intellectual capital disclosures can be made in the annual report of local authorities in New Zealand.

CHAPTER TWO

REVIEW OF THE NEW ZEALAND LOCAL GOVERNMENT SECTOR

2.1 INTRODUCTION

The New Zealand local government sector is the product of the substantial economic reforms carried out in the 1980s. Prior to the reforms, local government comprised over 600 bodies which were inefficient and lacked clear goals (Wallis & Dollery, 2000). The reforms reduced and reorganised the local bodies into 86² smaller and more efficient units of local government. The reporting structure was also overhauled through the introduction of the *Public Finance Act 1989* which had the aim of increasing the accountability of the public sector. This Act introduced commercial principles into the local government sector by requiring adherence to ‘Generally Accepted Accounting Practice’ (GAAP) (Hay, 2001; McCulloch & Ball; 1992; Pallot, 2001). The objective of the legislation was “better management of publicly owned resources and a higher standard of accountability to the public” (Pallot, 2001, p. 647).

This chapter reviews the central and local government reforms of the late 1980s and early 1990s and discusses how they altered the organisation, functions and reporting structure of local government. The chapter provides an examination of the current local government sector including the functions of local authorities, the important legislation governing the activities and management of local authorities, and the structure of councils. Finally, the decision making principles of local government is explained through an examination of special purpose bodies such as committees, community boards and council controlled organisations.

2.2 REFORM OF THE PUBLIC SECTOR

In order to understand the public sector reforms, it is important to place the reforms within the wider context of general economic policy in New Zealand at the time. Prior to the general election in July 1984, the then National government had combined initial

² As of 6th March 2006 Banks Peninsula District Council amalgamated with Christchurch City Council reducing the number of local authorities from 86 to 85. For more detail see <http://www.localcouncils.govt.nz>

moves to liberalise controls in some areas with greatly increased controls in others. Liberalisation strategies included reducing import protection, entering into a free-trade agreement with Australia, permitting road transport to compete with railways for long-haul freight, introducing voluntary unionism and permitting Saturday shopping (Hay, 2001; Scott, Bushnell & Sallee, 1990). However, the economy was still restricted by the various controls on wages, prices, interest rates (including mortgage rates), imports and exports (Lawrence, 1999).

At the time of the general election in July 1984 New Zealand was one of the most regulated economies of the Western World and had earned the title of ‘welfare state’ (Lawrence, 1999). The incoming government faced high fiscal deficits, high debt including substantial liabilities resulting from various guarantees given by previous governments, and an economy with an extended history of slow economic growth (Scott *et al.*, 1990). Reform was desperately needed to alleviate the pressures on the economy caused by a bloated, inefficient and poorly managed public sector (Bale & Dale, 1998; Hay, 2001; Wallis & Dollery, 2000).

Limited reform of the public sector had begun when the National Government was still in power. The 1979 budget focused on market liberalisation through reducing external protection and phasing out some of the domestic protection previously put in place (Easton, 1997). However, it was not until Labour’s victory at the 1984 general election that reforms began in earnest.

The Fourth Labour Government continued with National’s policy of market liberalisation with increased speed and fervour (Wallis & Dollery, 2000). Commercialisation and privatisation was the catch-cry with the aim being to “use the market to regulate resource decisions more and to rely less on government intervention, especially with regard to border protection” (Easton, 1997, p.13). Liberalisation is described by Easton (1997, p.13) as:

The opening of markets to competition by replacing such interventions as barriers to entry, price controls, licences, and restrictions on some activities, compulsion on others. It may also include the removal of advantages, disadvantages, subsidies and taxes which discriminate between different firms, or different related markets.

Treasury saw liberalisation as being the first step towards commercialisation – the organisation of economic and non-economic activity on the private business enterprise model (Easton, 1997). The ultimate goal was of course to ‘corporatise’ the public sector by requiring it to behave as if it were a private corporation, although this objective was not widely publicised at the time (Easton, 1997). The removal of protection policies such as benefit cuts, market rentals for state house tenants, charges for education and health services, and removal of government assistance from voluntary organisations such as Plunket Society and Women’s Refuge was considered by many New Zealanders as harsh (Lawrence, 1999). However the advocates of reform led by Roger Douglas the then Minister of Finance, saw the temporary hardships and suffering as necessary if people were ever to stand on their own feet and overturn a culture of dependency (Lawrence, 1999). The government justified its liberalisation and commercialisation strategy on the basis that it was the only real solution reduce the inefficiency of the public sector and jump-start New Zealand’s failing economy (Bale & Dale, 1998; Scott *et al.*, 1990).

By 1987 the overall strategy direction of corporatisation and privatisation had been settled by the Labour Government. The government then turned its attention to the reorganisation of core government activities (Bale & Dale, 1998; Easton, 1997; Scott & Gorrington, 1989). The five key resulting statutes were the *State Sector Act 1988*, the *State-Owned Enterprises Act 1986*, the *Public Finance Act 1989*, the *Reserve Bank Act 1989*, and the *Fiscal Responsibility Act 1994*. Each piece of legislation addressed a number of issues, but their underlying direction was the shifting of core government departments towards the adoption of commercial practices as far as was possible (Boston, Martin, Pallot & Walsh, 1996; Easton, 1997). According to Scott *et al.* (1990, p.144) the corporatisation and privatisation policy was designed to “allow greater management flexibility and improve the accountability of managers by acting as a proxy for the monitoring regime that applies in the private sector”.

The government also had plans to implement much needed reform of the local government sector as part of the wider economic reforms. Like the reform of central government, local government bodies were required to adopt the commercial principles espoused in the *Public Finance Act 1989*. The local government reform is discussed in the following section.

2.3 REFORM OF THE LOCAL GOVERNMENT SECTOR

The two-tier government structure comprising central and local government was established in New Zealand in 1876. Unstructured growth from the outset had led to a proliferation of small authorities and the *ad hoc* formation of special purpose authorities (Wallis & Dollery, 2000). In the early part of 1987 there were over 600 local authorities, many with overlapping boundaries that blurred the lines of authority and led to financial and operational inefficiencies (Pallot, 2001; Wallis & Dollery, 2000). According to Bale & Dale (1998) legislation was desperately needed to create a more efficient and effective local government sector.

Relief came in the form of the *Local Government Act 1989*, which set in motion radical reforms to the structure and management of local government (Wallis & Dollery, 2000). After the Labour government was re-elected in 1987, a set of briefing papers was prepared by the Treasury and presented to Cabinet. These papers contained the blueprint of reform which was heralded as the answer to the local government sector's problems (Wallis & Dollery, 2000).

Treasury recommended that public management reform be developed from a broad system-wide perspective derived primarily from agency theory, public choice theory, transaction-cost theory, and new public managerialism (Bale & Dale, 1998; Easton, 1997). The reform process continued with the government's theme of commercialisation and focused on the "lack of management incentives that lay at the root of pervasive government failure rather than on the symptoms of dysfunctionality... such as financial waste, excessive rules and poor performance" (Wallis & Dollery, 2000, p.4). The main problem identified by the briefing papers was the lack of incentives for management. The reforms aimed to address this problem, rather than taking a 'band-aid' approach to fixing the symptoms as had been the case in the past.

On consideration of the briefing papers, Cabinet gave Michael Bassett, the then Minister of Local Government, the "opportunity to highlight those aspects of local government structure and management that were inconsistent with the model that the Treasury was seeking to apply to core government departments" (Wallis & Dollery,

2000, p.4). According to McKinlay (1994, p.6) Bassett had identified a number of weaknesses of the local government sector at the time. He found there was:

- a) Confusion between councillors and senior management about their roles;*
- b) a built-in bias towards inefficiency resulting from the absence of contestability in the provision of council services, most of which were provided 'in-house';*
- c) Confusion between the commercial and non-commercial objectives in the management of council trading activities;*
- d) A lack of appropriate incentives and accountability arrangements to enable elected representatives to hold managers accountable for resource use; and*
- e) Diseconomies of scale – in resource use and recruitment of quality management – of too many small authorities.*

By rationalising the number of local government bodies and managing the local government sector according to commercial principles, it was claimed that the inefficiencies that had plagued the local government sector would disappear (Wallis & Dollery, 2000). The aim of this change was increased accountability of managers (chief executives) of the local bodies to their stakeholders. Following the reforms, managers of local bodies would be accountable not only to parliament but also to their respective local communities.

Various attempts at local government sector reform prior to 1984 had failed (Scott *et al.*, 1990; Wallis & Dollery, 2000). This was primarily due to the pressures of parochialism, but also because the functions of local government were so limited by central government that there was little benefit from a more rational structure (Bush, 1995; Easton, 1997). The golden opportunity for a successful reform arose with the release of Cabinet's urgent reform package in December 1987 in response to the share market crash. The crash further highlighted need for system-wide public sector reforms, and provided the perfect opportunity for the commencement of the local government reform process. Bassett was able to highlight and promote the need for local government reform, and his proposal to address the problems he identified was included in the broad reform package released by Cabinet (Wallis & Dollery, 2000).

2.3.1 Structural Reform

The local government reforms continued with the theme of economic liberalisation being espoused by central government. The reforms focused on rationalisation, community involvement, preference for markets and a limited role of the state (Alam &

Lawrence, 1994; Lawrence, 1999). According to Wallis & Dollery (2000) from 1989 the number of regional councils was reduced from 22 to 13, with provision being made for the direct election local body members. By enabling direct election of members the accountability of local authorities to citizens and community constituents became an integral part of the system. The number of city and district councils (designated 'territorial authorities') was reduced from 200 to 74 and the number of *ad hoc* or special purpose bodies was reduced from over 400 to just 7. The structure of the local government that emerged from the reforms was one "in which regional councils and territorial authorities have separate but complementary functions rather than as two levels of sub-national government where one is subordinate to the other" (Boston *et al.*, 1996, p.184).

In order to promote community input and ensure the 'localness' of each new authority was not lost, while at the same time strengthening the democratic accountability of the new bodies, the reformers established 'community boards'. These advisory boards were designed to give smaller communities a voice in local government. The community boards combined with a system of postal voting, ward elections and 'open government' (public access to meetings and committees with council responses to public consultations), to provide the public with "a greater opportunity to participate in local decision-making and in making officeholders more accountable for their performance" (Wallis & Dollery, 2000, p.8).

2.3.2 Financial and managerial changes

The 1989 reforms also brought about changes in managerial and financial management of local government. The reform process could be encapsulated by the phrase 'management by contract'. Its general aim was to "specify as precisely as possible the resources that one side will provide and the performance the other side will produce" (Wallis & Dollery, 2000, p.9).

Under this contractualist approach, the senior administrators became 'chief executives' who were accountable to their principals, which in the case of local government are members of the elected council (Wallis & Dollery, 2000). However, changing the job

titles of senior management was not enough to enhance accountability between the agents and principals in the public sector. The right conditions were needed.

The conditions under which formal contracts between principals and agents could be most readily negotiated and enforced were provided through the comprehensive “overhaul of budgetary and accounting systems and a radical process of organizational restructuring” (Wallis & Dollery, 2000, p.10). This restructuring was undertaken at both central and local government level after 1989 through the reform process. The *Public Finance Act 1989* played a central role in this, and accounted for the shift to an accrual basis for financial statements, the budgeting process and governmental appropriations. This shift enabled the generation of the information and incentives required to control and monitor spending by output class and created a performance-based system (Bale & Dale, 1998). Previously the financial statements were prepared on a cash basis for the entity at a whole and did not provide any meaningful information on a council’s activities. It was expected that the shift to accrual basis accounting would provide more meaningful information which would allow councils to better match resources with tasks.

The emphasis of the *Public Finance Act 1989* is on clear objectives and clear lines of responsibility for government entities, greater freedom to manage, and a corresponding expectation of greater accountability for results (Treasury, 2005). The *Public Finance Act 1989* attempts to meet these objectives in the area of financial reporting, budgeting and budget controls, by requiring the government and all public sector entities (including the local government sector) to prepare financial information that:

- Uses accrual accounting concepts and statements;
 - Is in accordance with financial reporting standards approved by an independent standard setter; and
 - In the case of annual financial statements, is audited by an independent auditor.
- (Treasury, 2005)

It was hoped that these legal requirements would improve the accountability of local governments to both central government and their respective communities.

The radical reform of both central and local government from 1989 has attracted much criticism. However, it can be inferred from studies such as McDermott and Forgie (1999) that the 1989 reforms enhanced the capacity of local governments in a way that enabled them to play a more activist role in the social and economic development of their communities.

Following on from the reforms of the 1980s and early 1990s, legislation pertaining to local governments was revisited by government in the early 2000s. In 2001 and 2002 the cornerstone statutes underpinning local government were revised when Parliament passed the *Local Electoral Act 2001*, the *Local Government (Rating) Act 2002* and the *Local Government Act 2002*. These acts provide local government bodies with the structure and processes to manage the affairs of their communities and further enhance the accountability of local government to central government, ministers and communities.

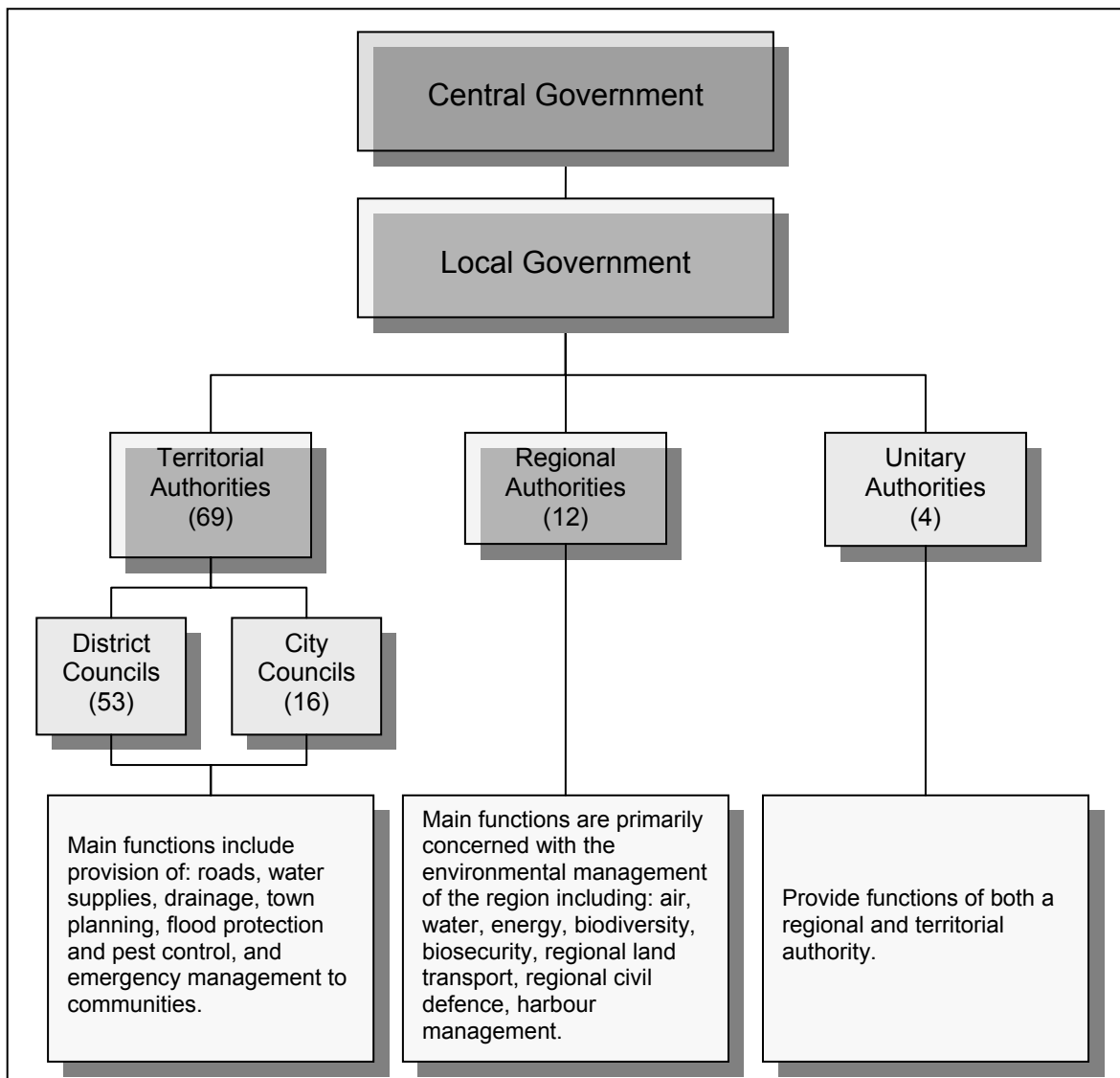
2.4 THE LOCAL GOVERNMENT SECTOR

This section presents an overview of the present local government sector. The section will begin with the presentation of the structure and functions of the present-day local government sector. Next, the important legislation governing the management and functions of local authorities will be reviewed, followed by an examination of the council structure. Finally, the decision making principles of local government will be explained.

2.4.1 Structure and Function

There are 85 local authorities that constitute New Zealand's local government sector. The local government sector is structured into two principal forms, regional councils and territorial authorities. Figure 2.1 on the next page depicts the structure of the local government sector.

Figure 2.1 Structure of the New Zealand government



Source: Author.

According to Pallot (2001, p.658) “local government in New Zealand should be regarded as an entity in which regional councils and territorial authorities have separate but complementary functions, rather than as two levels of sub-national government where one is subordinate to the other”.

The 69 territorial authorities, comprising 16 city councils and 53 district councils deal with the day-to-day issues that “contribute to the well-being of the people that live in their community” (Local Government New Zealand, 2004, p.2). Their functions include:

- Community well-being and development;

- Environmental health and safety including building control, civil defence, public health inspections and other environmental health matters;
- Provision of local infrastructure including roads, sewerage, water, stormwater;
- Recreation and culture; and
- Controlling the effects of land use including hazardous substances, natural hazards and indigenous biodiversity, noise and the effects of activities on the surface of lakes and rivers.

There is no difference in the powers and responsibilities of city and district councils – both are territorial authorities. The difference only indicates that the population of a city is greater than 50,000 and the area is a predominantly urban centre of regional significance.

In addition to the territorial authorities, there are 12 regional councils throughout New Zealand. Regional councils are responsible for “managing the broad-spectrum well-being of the entire region they cover” (Local Government New Zealand, 2004, p.2) primarily in the area of environmental management. Regional Councils are responsible for:

- Management of the effects of use of land, freshwater, coastal waters and air by developing regional policy and the issuing of consents;
- Biosecurity control or regional animal and plant pests;
- Catchment control: river management, flood control and mitigation of erosion;
- Harbour administration: harbour navigation and safety, marine pollution and oil spills;
- Regional emergency management and civil defence preparedness; and
- Regional land transport planning and contracting of passenger services.

The four unitary authorities provide the functions of both a regional and a territorial authority. These are Nelson City Council, and Gisborne, Tasman and Marlborough District Councils (Peren, 2005, p.2). Table 2.1 below shows the territorial and regional councils. Appendix A shows the council boundary maps.

Table 2.1 Territorial authorities within regional boundaries

North Island	South Island
Northland Region	Canterbury Region
Far North District Council	Kaikoura District Council
Whangarei District Council	Hurunui District Council
Kaipara District Council	Waimakariri District Council
Auckland Region	Selwyn District Council
Rodney District Council	Christchurch City Council
North Shore City Council	Banks Peninsula District Council *
Waitakere City Council	Ashburton District Council
Auckland City Council	Timaru District Council
Manukau City Council	Mackenzie District Council
Papakura District Council	Waimate District Council
Franklin District Council	West Coast Region
Bay of Plenty Region (Environment BOP)	Buller District Council
Tauranga City Council	Grey District Council
Western Bay Of Plenty District Council	Westland District Council
Rotorua District Council	Otago Region
Whakatane District Council	Waitaki District Council
Kawerau District Council	Central Otago District Council
Opotiki District Council	Queenstown Lakes District Council
Waikato Region (Environment Waikato)	Dunedin City Council
Hamilton City Council	Clutha District Council
Waikato District Council	Southland (Environment Southland)
Waipa District Council	Invercargill City Council
Otorohanga District Council	Gore District Council
Waitomo District Council	Southland District Council
Thames- Coromandel District Council	Not Included in Other Regional Councils
Hauraki District Council	Chatham Islands Council
Matamata-Piako District Council	
South Waikato District Council	Unitary Authorities
Taupo District Council	Gisborne District Council
Taranaki Region	Nelson City Council
New Plymouth District Council	Marlborough District Council
Stratford District Council	Tasman District Council

North Island	South Island
South Taranaki District Council	
Hawke's Bay Region	
Wairoa District Council	
Napier City Council	
Hastings District Council	
Central Hawke's Bay District Council	
Manawatu/Wanganui (Horizons Regional Council)	
Tararua District Council	
Horowhenua District Council	
Palmerston North City Council	
Manawatu District Council	
Rangitikei District Council	
Wanganui District Council	
Ruapehu District Council	
Wellington Region	
Wellington City Council	
Porirua City Council	
Kapiti Coast District Council	
Hutt City	
Upper Hutt City Council	
Masterton District Council	
Carterton District Council	
South Wairarapa District Council	

* On 6 March 2006 Banks Peninsula District Council amalgamated with Christchurch City Council.

Local councils communicate with central government agencies on behalf of their communities. This ensures that communities are able to identify well-being outcomes and to build realistic expectations of what government can and should do to help (Peren, 2005). In turn, all central government agencies have opportunities to communicate government's roles and priorities, and to provide information they may have about communities and their agencies' activities (Peren, 2005).

Population and Physical Size

Local authorities vary considerably in size, both by population and physical size. The largest regional council at the last Census of Population and Dwellings (Statistics New Zealand, March 2001) was Auckland Region with a population of 1,173,639 and the smallest was West Coast region with a population of just 34,464. Territorial and unitary authorities ranged from Auckland City (population 380,154) to Chatham Islands (population 714) (See Appendix B for population tables).

Regional councils cover the greatest area, ranging in size from Canterbury (5,661,187 hectares) to Taranaki (1,263,982 hectares). In terms of districts, Tasman District council covers the greatest area (1,453,799 hectares or 14,538 square kilometres) while Kawerau District Council covers the smallest area of just 2,194 hectares or 22 square kilometres. City councils range in size from Dunedin City Council (334,184 hectares or 3,342 square kilometres) to Hamilton City Council of just 9,420 hectares or 94 square kilometres. (Appendix C shows the physical size of local authorities.)

2.4.2 Legislation

The Department of Internal Affairs administers three key acts under which councils operate. These are the *Local Electoral Act 2001*, the *Local Government (Rating) Act 2002* and the *Local Government Act 2002*.

The *Local Government Act 2002* (LGA) sets out the general powers of councils, the community outcome process and planning and accountability requirements. The Act states that the purpose of local government is to:

- enable democratic local decision-making and action by, and on behalf of, communities; and
- Promote the social, economic, environmental and cultural well-being of communities, in the present and for the future.

For local authorities, this purpose encompasses their span of activities. Their roles involve both leading and representing their communities. This means engaging with their communities and encouraging community participation in decision-making, while

thinking about the needs of not only the people currently living in communities but also of those people that will live there in the future (Local Councils New Zealand, 2005a).

Under Section 12(2) of the LGA empowers a council to carry on and undertake any activity or business, do any act, or enter into transactions in considers appropriate in the context of the purpose of local government.

The LGA requires councils to:

- As far as possible, separate the setting of policy from operational functions;
- Prepare long-term council community plans (LTCCPs), annual plans and budgets in consultation with their communities;
- Report annually on performance in relation to their plans; and
- Prepare long-term financial strategies including funding, borrowing management and investment policies.

The key component of accountability between local government and its stakeholders is the requirement in the *Local Government Act 2002* for the publication of an annual plan (Hay, 2001). The draft plan is published which allows the public to make submissions on it prior to it being formally adopted by the local authority. The plan then becomes “a compact on which citizens are entitled to rely” (Gray, 1992, p.38) or “a contract” (Pallot, 1995, p.4). At the end of each financial year, the local authority is required to report on its achievements against the annual plan in a detailed annual report. According to Wood (1989) the publication of the annual plan, consultation over the annual plan and annual report on performance provides a very strong degree of accountability.

The *Local Electoral Act 2001* sets out the processes for the conduct of council elections, while the *Local Government (Rating) Act 2002* sets out the powers councils have to raise revenue by way of various rating tools.

As well as the three key acts relating to local government, there is a wide array of legislation under which local authorities operate (Local Councils New Zealand, 2005e). These are shown in Table 2.2 below.

Table 2.2 Key legislation governing local authorities

Legislation	Purpose	Administered by
<i>Biosecurity Act 1993</i>	Enables Pest Management Strategies (PMS) to be developed and implemented by local authorities for each of the important pests.	Ministry of Agriculture and Fisheries
<i>Building Act 2004</i>	Controls the building of new houses and alterations to existing ones.	Department of Building and Housing.
<i>Civil Defence Emergency Management Act 2002</i>	Updates and refines the duties, functions and powers of central and local government, emergency services, lifeline utilities and the general public.	Ministry of Civil Defence and Emergency Management
<i>Dog Control Amendment Act 2003</i>	Sets out the responsibilities of Territorial authorities regarding dog control in their district	Department of Internal Affairs
<i>Fencing of Swimming Pools Act 1987</i>	Sets out the responsibilities of Territorial authorities Regarding the fencing of swimming pools in their district.	
<i>Forest and Rural Fires Act 1977 (and subsequent updates and amendments)</i>	Sets out the powers and duties of rural fire authorities.	Department of Conservation
<i>Gambling Act 2003</i>	Lets out the duties of local authorities with regard to the growth and control of gambling and the prevention and minimisation of harm cause by gambling.	Department of Internal Affairs
<i>Hazardous Substances and New Organisms Act 1996</i>	Established the Environmental Risk Management Agency (ERMA New Zealand) to assess and make decisions relating to applications to introduce hazardous substances or new organisms into New Zealand (including genetic modification).	Ministry for the Environment
<i>Health Act 1956</i>	Powers of medical officers to require notification, examination and intervention in cases of infectious diseases.	Ministry of Health
<i>Land Transport Act 1998</i>	Promotion of safe road usage and vehicle behaviour.	Land Transport New Zealand
<i>Land Transport Management Act 2003</i>	Promotion and contribution towards achieving an integrated, safe, responsible and sustainable land transport system.	Land Transport New Zealand
<i>Maritime Transport Act 1994</i>	Control of maritime activities to ensure safe operation.	Maritime Safety Authority
<i>Prostitution Reform Act 2003</i>	Regulation of legal prostitution services in local areas. Promotes health and safety for workers.	Ministry of Justice
<i>Public Works Act 1981</i>	Empowers local authorities to acquire and maintain property that is necessary for the efficient and effective performance of their functions.	
<i>Reserves Act 1977</i>	Provides for the acquisition of land for reserves, and the classification and management of reserves including leases and licences, as well as setting out the aims for the setting aside of reserves.	Department of Conservation
<i>Resource Management Act 1991</i>	Provides for the protection and sustainable use of resources.	Ministry for the Environment
<i>Soil Conservation and Rivers Control Act 1941</i>	Provides for the conservation of soil resources, the prevention of damage by erosion and to make better provision for the protection of property damage by floods. Establishment of Catchment Boards.	Ministry for the Environment

Legislation	Purpose	Administered by
<i>Transit New Zealand Act 1989</i>	Creation of the crown entity Transit new Zealand. Requires regional councils to prepare a regional land transport strategy.	
<i>Transport Act 1962 and Land Transport Amendment Act 2005</i>	Consolidates and amends certain enactments of the Parliament of New Zealand relating to motor vehicles, road traffic, and commercial transport services carried on by means of motor vehicles or harbour ferries. Entitles councils to make Bylaws regulating traffic and parking.	

Another statutory body established by the *Local Government Act 2002* is the Local Government Commission (LGC). The LGC is an independent statutory body which is required to report to the Minister of Local Government on key issues after the 2007 triennial local government elections (Local Government Commission, 2005). The LGC is required to review the operation of the *Local Government Act 2002* and the *Local Electoral Act 2001* to determine and assess:

- The impact of conferring on local authorities' full capacity, rights, powers and privileges;
- The cost effectiveness of consultation and planning procedures; and
- The impact of increasing participation in local government and improving representation on local authorities.

The Commission comprises three members appointed by the Minister and has the powers of a Commission of Inquiry (Peren, 2005). It is hoped that the review will provide useful information to assess and streamline the functioning of local government.

2.4.3 Council Structure

Each council can make its own decisions about how it will organise or structure itself to make decisions for and on behalf of the community (Local Councils New Zealand, 2005b). There are a number of activities that a council that must only be decided by the full council. These include:

- Setting rates and making bylaws;
- Borrowing money, or buying or selling land, unless already approved under the long-term council community plan (LTCCP);
- Adopting a LTCCP, annual plan or annual report;

- Adopting policies required to be adopted in response to LTCCP or by the local governance statement; and
- Appointing a chief executive.

Outside these key areas, councils can make decisions either as a full council, or by delegating some matters to a committee of the council, a community board, or a council organisation. While this delegation is supported by the LGA, the Act specifies that ultimately, the council is always responsible for the decision that has been delegated.

Committees

Councils can set up committees, subcommittees and other decision-making bodies that it considers appropriate. These bodies usually take the form of a standing committee which is appointed for the term of the council (Local Councils New Zealand, 2005b). Boards such as district health boards are joint committees which can be set up by councils with other local authorities or public boards.

A committee must have at least three members, a sub-committee at least two. At least one of the members of a committee or sub-committee must be a councillor. Non-council members of committees are appointed if they have a special skill or knowledge that will assist the work of the committee.

Community Boards

Many territorial authorities have one or more community boards. These boards reinforce local accountability and provide local input to decision making by representing community views at the neighbourhood level. Positions on community boards are filled largely by election however territorial authorities have the right to appoint a minority of the members of the boards and many do exercise this right (Local Councils New Zealand, 2005d).

Community boards assist with the wider territorial authority governance and representation of the community, but are neither a local authority themselves, nor are they a sub-district level of government. Community boards are unincorporated bodies which are directly funded by the council. While the boards cannot employ staff, own property, raise local taxes or borrow money, they can be very influential particularly in

relation to decisions affecting their area (Local Councils New Zealand, 2005d). They provide a voice for communities to get involved in local government decision making.

The roles of Community Boards, according to Section 52 of the LGA, can include:

- Representing and advocating the interests of particular communities within the territorial authorities;
- Considering and reporting on matters referred to it by council, or of interest or concern;
- Maintaining an overview of council services to the community;
- Preparing and annual submission to council for expenditure;
- Communicating with community organisations and special interest groups; and
- Undertaking any other responsibilities delegated to it by the territorial authority.

Some councils have delegated significant service delivery and regulatory responsibilities to their community boards, such as the power to make roading construction changes, hearing applications for the sale of liquor licences, making submissions on behalf of the council on the *Resource Management Act 1991*, and setting aside of land for reserves and parks. This demonstrates the importance of community boards in local government and communities.

Council Organisations, Council Controlled Organisations (CCO) and Council Controlled Trading Organisations

Councils are able to set up their own organisations to undertake particular activities on their behalf, or to acquire voting interests in organisations outside the council. These organisations can take the form of companies, partnerships, trusts, and arrangements for sharing profit, unions of interest, cooperatives or joint ventures. Different reporting requirements may apply to the different entities, depending on their trading nature.

2.4.4 Decision-making

As mentioned previously, councils have broad powers under the *Local Government Act 2002* to act “on behalf of their communities and to promote their well-being now and for the future” (Local Councils New Zealand, 2005c, p.1). The *Local Government*

Act 2002 balances these powers with requirements to take into account the principles set out in the Act.

Section 14 of the LGA requires all councils to take a consistent approach to their activities by adhering to a series of general principles. These are:

- Conducting their business in a clear, transparent and democratically accountable way;
- Operating in an efficient and effective manner;
- Making themselves aware of and having regard to the views of all their communities;
- Taking account of the diversity of their community's interests, both the current and the future communities;
- Providing opportunities for Maori to contribute to council decision-making processes;
- Collaborating and co-operating with other local authorities and bodies appropriate to promoting or achieving the council's priorities and desired outcomes;
- Conducting commercial transactions according to sound business practice;
- Ensuring prudent stewardship and the efficient and effective use of their resources, in the interests of the district or region the councils represents; and
- Taking a sustainable development approach.

The general principles are supported by a series of more specific principles which guide the decisions and actions of the council. These higher level principles "allow a council to apply the principles in a way that it thinks will be most effective for its communities" (Local Councils New Zealand, 2005c, p.1). The principles are:

- Governance principles;
- Decision-making principles;
- Consultation principles;
- Special Consultative principles;
- Financial management principles; and
- Accountability and transparency/reporting principles.

The Governance Principles

According to Local Councils New Zealand (2005c, p.1), governance is “the means for collective action in a society, responding to and guiding change”. There are five principles of governance under the LGA that local councils must adhere to. These are:

- Clarity in governance roles – the governance role should be clearly understood by elected members and by their communities;
- Effective, open and transparent processes – processes must be open to the public and understandable by the public;
- Separation of regulatory and non-regulatory functions – councils should ensure that responsibility and decision-making processes for regulatory activities are separated from those for non-regulatory or operating activities;
- Good employer – each council must operate a personnel policy containing conditions generally accepted as necessary for fair and proper treatment of employees; and
- Effective and clearly understood relationships exist between elected members and management.

The Decision-Making Principles

The LGA defines a ‘decision’ as an agreement to follow a particular course of action and includes an agreement not to take action on a particular issue. The degree of compliance with the principles regarding decision-making is in proportion with the importance of the decision being made. Councils must evaluate the significance of the decision, with the concept of ‘significance’ being one of the most important concepts in the LGA.

The degree of significance of any decision is important because it determines the nature, extent and degree of compliance that is required, as well as whether or not a separate round of consultation on the issue is required. Significance also determines the extent and the detail of information to be disclosed by the local authority when reporting to the district or region.

The LGA requires councils to adopt a policy on significance that will allow them to “identify, with their community, the more important decision needed” (Local Councils

New Zealand, 2005c, p.3). This helps improve the decision-making process and ensures the local community is involved in, and able to contribute to the process.

The Consultation Principles

Following on from decision-making is consultation. For significant decisions, the council must consult with the community. This is to enable effective participation of individuals and communities in the decision-making of local authorities (Local Councils New Zealand, 2002c) and to ensure citizens and their communities have the opportunity to engage with their local authorities. It also enables better-informed decisions being made by elected representatives on behalf of those they represent.

The six guiding consultation principles contained in the Act centre mainly around transparency. They are about people knowing and understanding what decisions councils are making and why.

The Special Consultative Procedures (SCPs)

In some circumstances, a council may be required or choose to use Special Consultative Procedures (SCPs) when consulting on decision-making. SCPs ensure fair and effective presentation of the issue related to the decisions being made and they ensure that wide and open consultation processes are followed. SCPs are made up of a statement of proposal, the summary statement of proposal, the public notice, and the public submissions.

SCPs are most likely used when the councils is adopting or amending LTCCPs, adopting an annual plan, making, amending or reviewing bylaws, or making other decisions relating to levels of service provision, transfer of ownership of a strategic asset, building or abandoning or replacing a strategic asset.

The Financial Management Principles

According to Local Councils New Zealand (2005c, p.3) financial management “is and will remain one of the most visible activities of local authorities”. The LGA sets out important obligations for local authorities that promote internal consistency in local government.

The requirement to act prudently and in a manner that promotes the current and future interests of its community is the most important principle. Additionally, councils must also adequately and effectively provide for expenditure that is outlined in the LTCCPs and the annual plans. This expenditure must be met from those mechanisms the council considers appropriate after consideration of the promotion of community outcomes. These are the user/beneficiary pays principle, the intergenerational equity principle, and the exacerbator pays principle. The councils must also bear in mind the costs and benefits of the activity and the overall impact of the selection of the funding mechanism on the community (Local Councils New Zealand, 2005c).

The financial management principles that are set out in the LGA aim to help local authorities recognise that revenue and funding decisions “do not occur in a vacuum and that funding decisions can impact on well-being” (Local Councils New Zealand, 2005c, p.3).

2.5 SUMMARY

The local government sector was substantially reformed in the 1980s as part of wider economic reforms by the Fourth Labour Government following their election in 1984. Prior to the reforms, the 600 local bodies that constituted the local government sector were inefficient and lacked clear objectives. The reforms aimed to increase the accountability and performance of local government, and began by reducing the large number of bodies to 86 smaller and more efficient local authorities. Commercial principles and results-oriented management were introduced to the sector by the *Public Finance Act 1989* which required local government authorities to adhere to ‘Generally Accepted Accounting Practice’ (GAAP).

This chapter reviewed the central and local government reforms of the late 1980s and early 1990s and discussed how these reforms altered the organisation, functions and reporting structure of local government in New Zealand. The chapter also discussed how the reforms aimed to increase the accountability of the New Zealand local government sector to its stakeholders through the introduction of commercial principles espoused by the *Public Finance Act 1989* and the requirement of annual reporting of performance against the annual plan. The chapter concluded with an

overview of the current structure and functions of the New Zealand local government sector.

The next chapter will investigate the current literature pertaining to intellectual capital. It will discuss and compare the different measurement, management and reporting models that are available to practitioners. The chapter will discuss issues of accountability of local governments to their stakeholders and explain how this accountability is discharged through the annual report. Finally, the chapter will look at how intellectual capital reporting incorporated into the annual report of local governments can enhance the discharge of accountability to stakeholders.

CHAPTER THREE

LITERATURE REVIEW

3.1 INTRODUCTION

There is a general consensus among researchers and accounting practitioners that firms are leaving the industrial world and entering a new age driven by information and the knowledge economy (Bontis, Dragonetti, Jacobsen & Roos, 1999; Chatterji, 2000; Clawson, 1996; Guthrie, 2001; Sveiby, 1997). A key driver in this new world is knowledge (Bontis *et al.*, 1999; Petty & Guthrie, 2000). It has been suggested by Clawson (1996) and Bontis (2001) that a paradigm shift is occurring, bringing with it a new way of seeing the world and that the ‘knowledge organisation’ is the key to future financial success in the ‘Information Age’. Authors such as Brooking (1996) and Bontis (2001) attribute the shift in thinking to information-age technology, the media and communications which have provided tools with enormous intangible benefits to organisations.

Organisations began to realise that the key to success in the new strategic environment was the careful management of information and knowledge (Quinn, 1992). Greater emphasis was placed upon the intangible assets of an organisation. Particular attention was directed towards a specific group of intangible assets called intellectual capital (IC). The proliferation of conferences on IC, the myriad of books, working papers and journal articles that deal with the topic and the large number of consulting firms offering products and services centred around IC are testament to this (Petty & Guthrie, 2000).

IC reporting began as an accounting/management practitioner-created concept. In the early 1990s organisations such as Skandia, Rambøll and GrandVision realised that existing financial accounting frameworks were unable to adequately address the measurement and recognition of the new value drivers in the economy. These organisations developed their own frameworks and methods for measuring and managing intellectual capital. It has only been more recently that scholarly contributions appeared to analyse and use the potential offered by IC reporting (Bontis,

et al., 1999; Bounfour, 2003; Brooking, 1996; Edvinsson & Malone, 1997; Guthrie, Petty & Johanson, 2001; Sveiby, 1997).

Researchers and analysts have not yet reached unanimous agreement on the definition of intellectual capital and its components (Bounfour, 2003; Kaufmann & Schneider, 2004; Petty & Guthrie, 2000). This has led to the development of a plethora of alternative IC disclosure, measurement and reporting models. While each model is different, each inherently recognises that organisational stakeholders require diverse types of information, extending beyond that delivered by traditional accounting practice (Collier, 2001; Guthrie & Petty, 2000; Guthrie *et al.*, 2001). Skandia's Navigator Scheme and the Balanced Scorecard are just two of the many models developed for the recognition and measurement of IC.

Current disclosure of IC by organisations worldwide is voluntary. In New Zealand, intangible asset disclosure is governed by NZ IAS 38 *Intangible Assets*. This standard, based on the international accounting standard of the same name, provides for the recognition of intangible assets in the balance sheet of reporting entities when strict recognition criteria are met. This leads to the vast majority of intellectual capital items remaining undisclosed.

The next section presents a review of the current intellectual capital literature. The definition known as the 'Intellectual Capital Approach' used in this research is explained, followed by a review of the three 'waves' of IC model development that has occurred since the 1980s. The section explores how these models have been used as intellectual capital measurement, management and reporting tools by organisations. The mandatory disclosure requirements contained in the current accounting standards including NZ IAS 38 *Intangible assets* is reviewed. The relationship of intellectual capital to accountability and stakeholder theory is explored. Finally, the section explains how the annual report is used by organisations as a mechanism for discharging accountability to stakeholders.

3.2 DEFINING INTELLECTUAL CAPITAL

The IC literature yields many interchangeable terms for intellectual capital. The most widely used terms are: intangibles, intangible assets, intangible resources, intellectual capital, and intellectual property. The variety of terms is accompanied by a spectrum of definitions for each term. A review of current literature by Kaufmann and Schneider (2004) shows that there is no consensus on any one set of terms and definitions. Bounfour (2003) agrees that researchers and analysts have not reached unanimous agreement on the definition of intangible investment and its components. This makes defining intellectual capital for the purpose of this research difficult. Table 3.1 details a number of definitions that have been proposed by leading researchers.

Table 3.1 Definitions of intellectual and human capital

Author	Definition
Roos, Roos, Dragonetti and Edvinsson (1997)	Intellectual capital is classified as structural and human capital, thinking and non-thinking assets. The authors make the distinction primarily on the premise that human capital requires different management approaches than other types of capital.
Sveiby (1997)	Intellectual capital consists of the invisible assets of the organisation which include: employee competence (skills, education and experience) and their capacity to act in a wide variety of situations; internal structure (management, structure patents, concepts, models, research and development capability, software); and external structure (image, brands, customers and supplier relations).
Stewart (1997)	Intellectual capital is defined as intellectual material - knowledge, information, intellectual property and experience - that can be put to use to create wealth.
Brooking (1996)	Intellectual capital consists of four components: market assets, human-centred assets, intellectual property assets, and infrastructural assets.
Edvinsson and Malone (1997)	Intellectual capital consists of human, system and market components. Employees and managers in the organisation represent human capital. Human capital refers to what people can do individually and collectively. The system component represents the knowledge in the firm which is independent of people and includes patents, contracts, databases, and information and production technology. The market component consists of the relationships between the organisation and outsiders, e.g. suppliers, distributors and customers.
Kaplan and Norton (1992)	The intellectual capital component of the balanced scorecard consists of three linked perspectives: customers, internal business processes, learning and growth.
Sullivan (1999)	Intellectual capital is knowledge that can be converted into profits. It comprises two elements: human capital and intellectual assets. Human capital consists of the firm's individual employees who possess skills, abilities, knowledge and know-how. The employee is an individual 'unit' of human capital that must be positioned where these attributes can be used effectively. Within each employee resides the tacit (uncodified) knowledge the firm seeks to utilise. Intellectual assets are created whenever human capital is codified. At this point the firm can move the intellectual asset rather than the individual to wherever it is needed.

Author	Definition
Mayo (2000)	This author focuses on a definition of <i>human capital</i> and defines it as: a capability, knowledge, skill, experience, and networking, with the ability to achieve results and the potential for growth; individual motivation in the form of aspirations, ambition, drives, work motivations and productivity; work group effectiveness in the form of supportiveness, mutual respect sharing and values; leadership in the form of clarity of vision and ability to communicate that vision; organisational climate in the form of culture particularly the freedom to innovate, openness, flexibility and respect for the individual.
Haanes and Lowendahl (1997)	A distinction is made between the intangible resources of competence and relationships. Competencies are conceptualised as the ability to perform. They are manifested at the individual and organisational levels. Relationship-type intellectual capital is manifested in the reputation of the company and customer loyalty. Both exist in an individual and collective fashion.

Source: Garavan, Morley, Gunnigle & Collins (2001).

Most definitions of IC tend towards including the knowledge of the firm and the recognition that intangibles can constitute claims to future benefits. This is consistent with the generally accepted definition of an asset. In this context, “intellectual capital is the value generated from resources not conventionally found on the balance sheet” (Mouritsen, Bukh & Bang, 2005, p.2). This notion is supported by Sveiby (1997, p.18) who states that “the difference between the market value of a publicly held company and its official net book value is the value of its intangible assets”.

One of the most workable definitions of intellectual capital according to Guthrie and Petty (2000) is that which is offered by the Organisation for Economic Co-operation and Development (OECD, 1999). The OECD describes IC as “the economic value of two categories of intangible assets of a company: (a) organisational (‘structural’) capital and (b) human capital”. Structural capital can be further disaggregated into internal and external capital. This definition recognises that IC is a distinct subset of, rather than the same as, the overall intangible asset base of an organisation.

The definition adopted by the OECD is supported by a number of authors in the IC literature. They have also divided intellectual capital into three dimensions: external capital, internal capital, and human capital (see for example Edvinsson and Malone, 1997; Kaplan & Norton, 1992; Rodgers, 2003; Roos, Roos, Dragonetti & Edvinsson, 1997; Stewart, 1997; Sveiby, 1997). This classification of intellectual capital has become commonly known as the *Intellectual Capital Approach* and has been highly

influential in contributing to the popularisation of intellectual capital thematics. The Intellectual Capital Approach is used by many organisations in measuring and reporting their intellectual capital. Firms such as Skandia, Rambøll, GrandVision, and Sys-Com use this basic framework as a foundation for their intellectual capital reporting.

Mouritsen *et al.* (2005) recognise that by describing an organisation using the three dimensions of IC: human capital, internal capital and external capital, the three categories are separated from each other and boundaries for a framework are established. The three dimensions of the Intellectual Capital Approach are explored in further detail in Table 3.2.

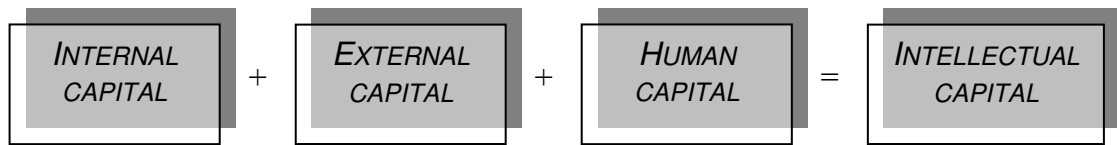
Table 3.2 Intellectual Capital Approach alternative labels

Intellectual Capital Approach	Alternative label(s)	Description
Internal capital	Organisational capital Structural capital Internal relations	Refers to the knowledge embedded in organisational structures and processes, and includes patents, research and development, technology and systems.
External Capital	Customer capital Relational capital External relations	Comprises elements of an organisation's patrimony-related customer relations: relationships with customers and suppliers, brand names, trademarks and reputations.
Human Capital	Employee competence	Refers to the set of all the knowledge and routines carried within the minds of the members of the organisation and includes skills/competencies, training and education, and experience and value characteristics of an organisation's workforce/employees.

Source: Adapted from Petty & Guthrie (2000).

For the purposes of this research, IC will be defined using the Intellectual Capital Approach. This will form the foundation of the Intellectual Capital Disclosure (ICD) index that will be developed to measure intellectual capital disclosure by the New Zealand local government sector. A working definition of IC summarised from the literature is presented in Figure 3.1.

Figure 3.1 The intellectual capital approach



Source: Author.

Defining intellectual capital is the first step in the process of measuring, managing and reporting IC. The next section will track the development of the IC movement, and review some of the more popular models developed in accounting for IC. It will also review the current financial reporting requirements in place for IC reporting.

3.3 MEASURING, MANAGING AND REPORTING INTELLECTUAL CAPITAL

3.3.1 Intellectual Capital Measurement Models

Interest in IC reporting gained momentum with practitioners in the late 1980s to early 1990s. Petty and Guthrie (2000) identify two stages in the development of IC frameworks and models. They categorise activity during the 1980s and prior to the mid-1990s as ‘first-stage’ which was primarily concerned with raising consciousness and creating mass awareness of the relevance of IC. The ‘second-stage’ saw IC research become a discipline in itself. Ideas relating to the influence of firm-specific conceptualisations of the value of IC were being investigated, as well as the refinement and further development of multi-dimensional tools for the measurement and management of IC. Petty and Guthrie (2000) recognised that most of the ideas being vetted by researchers in the second-stage were formulated, or at least alluded to, during the first-stage process. Petty and Guthrie (2000) state that second-stage intellectual capital related activity is still in its infancy which provides researchers with countless opportunities to explore hypotheses that have already been developed. Table 3.3 shows a simplified timeline of major intellectual capital milestones identified by Petty & Guthrie (2000).

Table 3.3 Significant contributions to IC identification, measurement and reporting

Period	Progress
Early 1980s	General notion of intangible value (often generically labelled “goodwill”).
Mid 1980s	The “information age” takes hold and the gap between book value and market value widens noticeably for many companies.
Late 1980s	Early attempts by practitioner consultants to construct statements/accounts that measure intellectual capital (Sveiby, 1988).
Early 1990s	Initiatives systematically measure and report on company stocks of intellectual capital to external parties (e.g. Celemi in 1995 and Skandia in 1994). In 1990 Skandia AFS appoints Leif Edvinsson as Director of intellectual capital. This is the first time that the role of managing IC is elevated to a formal position given an air of corporate legitimacy. In 1992 Kaplan and Norton introduce the concept of a balanced scorecard (Kaplan & Norton, 1992). The scorecard evolved around the premise that “what you measure is what you get”.
Mid 1990s	Nonaka and Takeuchi (1995) present their highly influential work on “the knowledge creating company”. Although the book concentrates on ‘knowledge’, the distinction between knowledge and intellectual capital is sufficiently fine as to make the book relevant to those with a pure focus on IC. Celemi’s Tango simulation tool is launched in 1994. Tango is the first widely marketed product to enable executive education on the importance of intangibles. Also in 1994, a supplement to Skandia’s annual report is produced which focuses on presenting an evaluation of the company’s stock of IC. “Visualising intellectual capital” generates a great deal of interest from other companies seeking to follow Skandia’s lead (Edvinsson, 1997). Another sensation is caused by Celemi in 1995 when the company uses a “knowledge audit” to offer a detailed assessment of the state of its intellectual capital. Pioneers of the intellectual capital movement publish best selling books on the topic (Kaplan & Norton, 1996a, 1996b; Edvinsson & Malone, 1997; Sveiby, 1997). Edvinsson and Malone’s (1997) work, in particular, is very much about the process and the “how” of measuring intellectual capital.
Late 1990s	Intellectual capital becomes a popular topic with researchers and academic conferences, working papers, and other publications find an audience An increasing number of large-scale projects (e.g. the MERITUM project; Danish Agency for Trade and Industry (DATI), Stockholm) commence which aim, in part, to introduce some academic rigour into research on intellectual capital. In 1999, the OECD convenes an international symposium in Amsterdam on intellectual capital.

Source: Petty & Guthrie (2000, p.161).

Within the second-stage of IC progress and expansion, the development of IC reporting models showed three distinct ‘waves’ (Fincham & Roslender, 2003). The next section investigates the waves of IC model development and details a number of popular models.

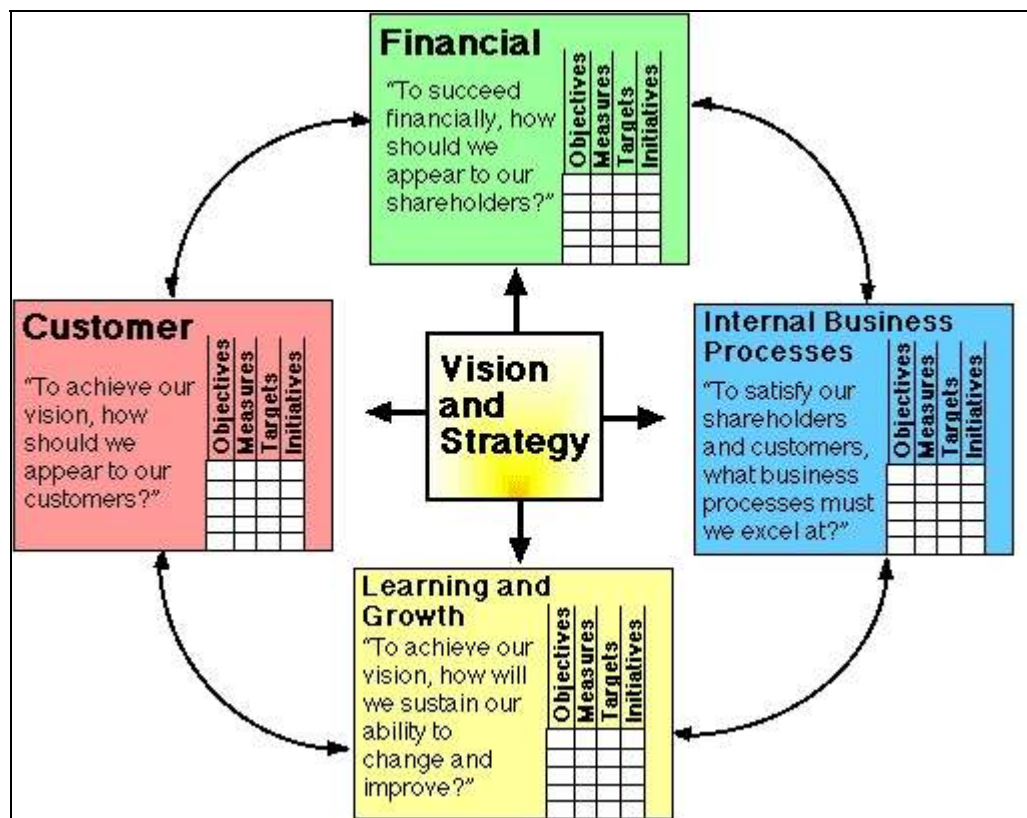
3.3.1.1 First Wave Intellectual Capital Reporting

The first wave of IC reporting consists of 'scorecard' type reporting mechanisms. The most well known are the Skandia Navigator (Edvinsson, 1997), the Balanced Scorecard (Kaplan & Norton, 1992) and the Intangible Assets Monitor (Sveiby, 1997).

The Balanced Scorecard

The Balanced Scorecard (BSC) was developed by Kaplan and Norton in the early 1990s (Kaplan & Norton, 1992). It was seen as an attempt to develop a comprehensive approach to management reporting and was used almost exclusively as an internally-focused management accounting tool (Fincham & Roslender, 2003). The balanced scorecard relied heavily on management accounting techniques that had emerged in the intense activity in the field of management accounting during the 1980s. The balanced scorecard is shown in Figure 3.2 below.

Figure 3.2 The Balanced Scorecard



Source: Arveson (1998).

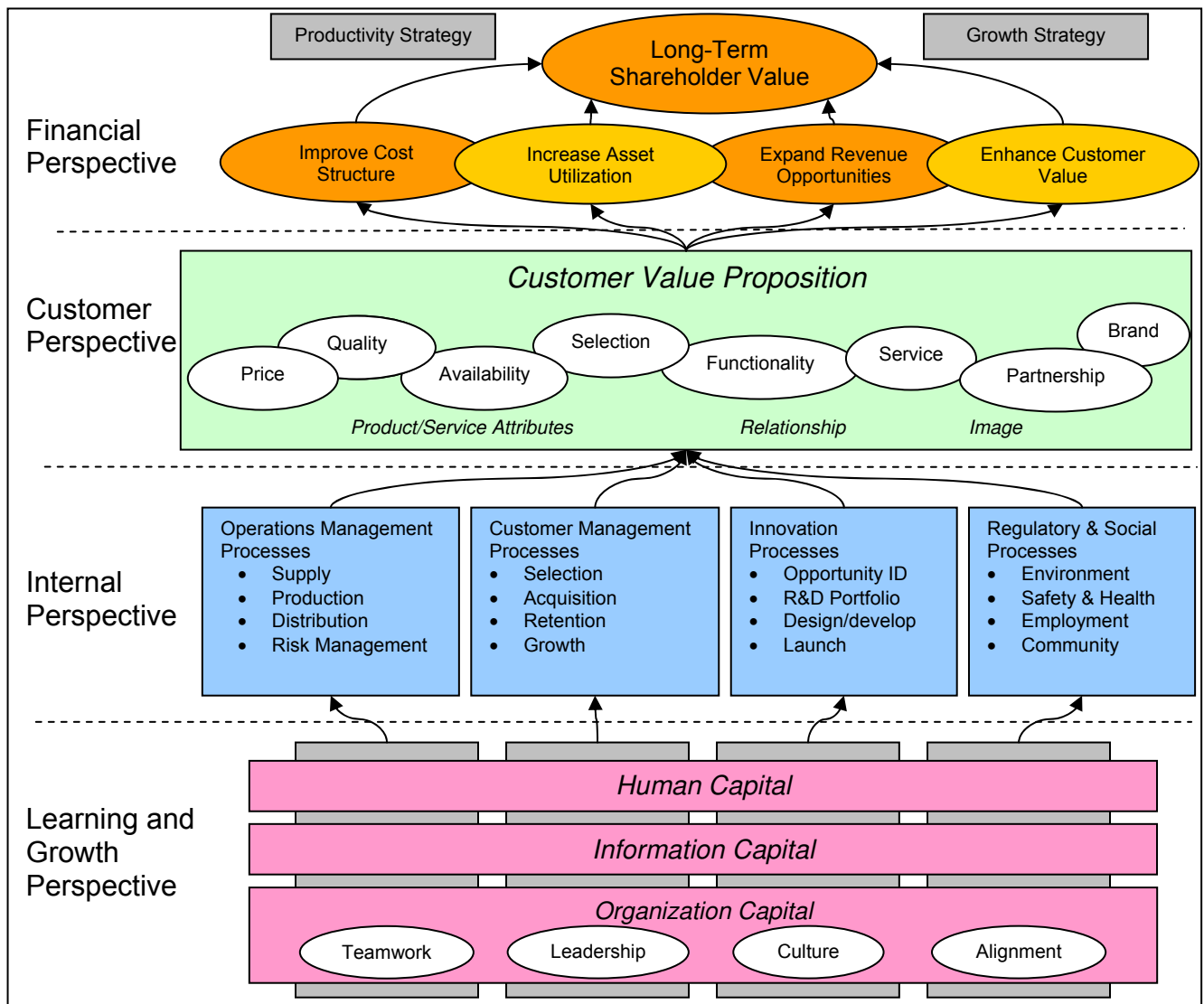
The BSC combines financial measures with performance measurements from four perspectives. Information on customers, internal business and learning and growth

measures are combined and analysed to provide a more robust analysis of an organisation's performance instead of focusing solely on financial results.

While the term 'intellectual capital' was not used by Kaplan and Norton at the time the BSC was first developed, the authors later acknowledged a link between the BSC and reporting on intangible assets. Describing the BSC in 1996, Kaplan and Norton (1996a, p.75) added "it therefore enabled companies to track financial results while simultaneously monitoring progress in building the capabilities and acquiring the intangible assets they would need for future growth".

In 2004, Kaplan and Norton redeveloped the BSC in light of the continuing development of IC reporting. The learning and growth perspective of the BSC was specifically modified to include indicators of human capital, information capital and organisation capital. Kaplan and Norton (2004) state that by using the BSC, executives can align and integrate their intangible assets with their organisational strategy in order to create organisational wealth. Figure 3.3 presents the updated BSC strategy map that according to Kaplan & Norton (2004) can be used by firms to create value.

Figure 3.3 The Balanced Scorecard strategy map



Source: Kaplan & Norton (2004).

Skandia Navigator System

In the early 1990s, a number of pioneering firms took particular interest in reconstructing corporate annual reporting to include IC indicators. Among them were the Swedish insurance company Skandia, the Danish consulting company Rambøll, the Canadian Imperial Bank of Commerce, and the American Dow Chemical Company (Bontis *et al.*, 1999). The resulting models tended to be either internally focused, that is they helped manage intangibles within a company, or externally focused, which included the visualisation of intangibles to make the information more accessible to external stakeholders, primarily investors (Kaufmann & Schneider, 2004). One organisation, Skandia, created an IC measurement and reporting system which was

designed to synthesise both financial and non-financial information into one report that could be presented externally.

Skandia is cited in the intellectual capital literature as being the world leader in intellectual capital reporting (Bontis, 2001; Mouritsen, Larsen & Bukh, 2001). It is used as a benchmark by other organisations wishing to prepare intellectual capital reports. Skandia is considered to be the first large company to have made a truly coherent effort at measuring knowledge assets (Bontis, 2001; Huseman & Goodman, 1999). Skandia first developed its IC report internally in 1985, and in 1994 presented their first external intellectual capital statement *Visualising Intellectual Capital in Skandia* as a supplement to their annual report. Kaplan and Norton (1996b) identified Skandia's early IC supplements as examples of Balanced Scorecard activity in action. Table 3.4 details the IC reports that Skandia has produced since its inaugural 1994 IC supplement. No IC reports have been produced by Skandia since 1998.

Table 3.4 Intellectual capital reporting at Skandia

Year	Report	Type
1994	Visualising Intellectual Capital at Skandia	Supplement to Skandia's 1994 Annual Report
1995	Value Creating Processes: Intellectual Capital, and Renewal and Development: Intellectual Capital	Supplement to Skandia's 1995 Annual Report Supplement to Skandia's 1995 Interim Report
1996	Power of Innovation: Intellectual Capital	Supplement to Skandia's 1996 Interim Report
1997	Intelligent Enterprising: Intellectual Capital	Supplement to Skandia's 6-Month Interim Report
1998	Human Capital in Transformation	Intellectual Capital Prototype report

Source: Skandia (<http://www.skandia.com/en/ir/annualreports.shtml>)

Skandia's IC supplements were prepared by using the Skandia Navigator System, developed by Leif Edvinsson, former Corporate Director of Intellectual Capital for Skandia. Skandia has taken the basic intellectual capital approach outlined by Sveiby (1997), with its concepts of human capital, structural capital and customer capital, and refined it through the incorporation of ideas from the Balanced Scorecard (Kaplan & Norton, 1996b). This has led to the creation of the Navigator System.

The Navigator System was designed to synthesise financial and non-financial reporting through "identify[ing] the roots of a company's value by measuring hidden dynamic factors that underlie the visible company of buildings and products" (Bontis, 2001,

p.44). The Navigator system can be used by other organisations as a universal template for IC reporting, and provides organisations with “a multi-dimensional conceptualisation of organisational value” (Bontis, 2001, p.46).

On their Navigator System Skandia says:

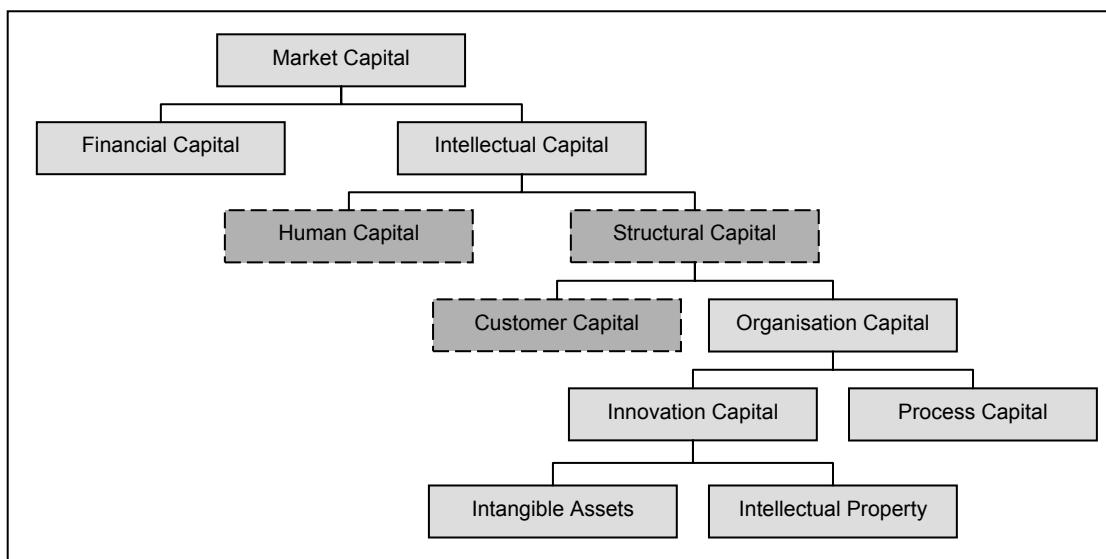
This process aims to highlight indicators and intellectual capital ratios that will describe the company’s strategic development and value creation. The ambition is to visualise critical success factors and make them more tangible as quantifiable ratios. These indicators can then be grouped into major focus areas for a balanced overview (Skandia, 1994, p.7).

For Skandia (1994, p.5) the intellectual capital element includes three types of intangible resources:

- *Human capital*, which represents the knowledge, aptitudes and competences of individuals to provide solutions to their customers;
- *Structural capital*, which represents “all that remains when the employees return to their premises: databases, files, customers, software, handbooks, trademarks, organisational structures;
- *Customer capital*, namely ‘relations with customers’, who constitute a significant share of the structural capital.

Figure 3.4 shows the relationship between the elements of intellectual capital at Skandia. The elements of intellectual capital are highlighted with a dashed line.

Figure 3.4 Skandia's forms of capital



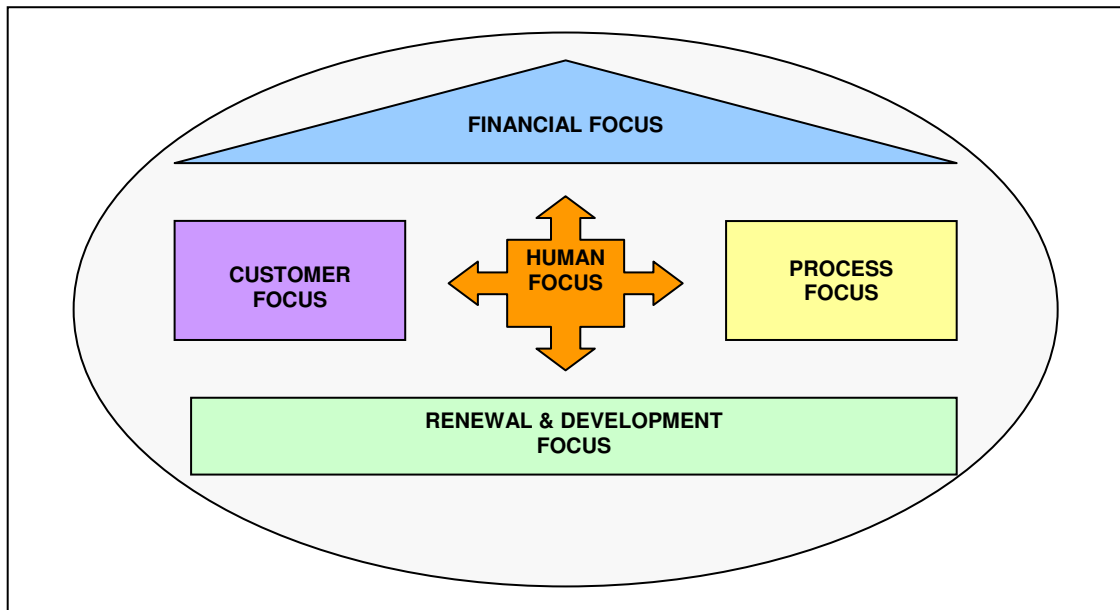
Source: Edvinsson (1997).

The Navigator System is characterised by the use of key indicators (ratios), an approach that owes its roots to the Balanced Scorecard. The components of intellectual capital are measured and presented through the use of five different ‘focuses’, each with their own set of indicators:

- *Financial focus:* its indicators are aimed at measuring income generated by the committed intangible investment: fund assets, fund assets/employee; income/employee; income/management assets.
- *Customer focus:* its indicators are aimed at translating the quality of the relationship to customers and its evolution: numbers of new customers, numbers of new contracts, customers lost, and index of satisfaction, and committed services of support.
- *Process focus:* indicators are mainly concerned with the productivity of information technologies, the level of equipment of the personnel and the technical staff management. Ratios such as administrative expenses/total revenues, average volatility-shares, average volatility-interest rates, total yield compared with index etc are employed in this focus.
- *Renewal and development focus:* indicators are centred on the development of the organisation’s capabilities, including its human resources dimensions. Indicators include: competence development expense/employee; satisfied employee index; marketing expense/managed assets; marketing expense/customer.
- *Human focus:* indicators relation to the measurement of the performance of human resources, including terms of time allowance.

The Navigator System’s five areas of focus are depicted in Figure 3.5 on the next page:

Figure 3.5 The Skandia Navigator



Source: Bounfour (2003).

In total, there are about thirty key indicators that span the entire business. They are monitored internally on a yearly basis, and aim to make the invisible assets visible, that is, to present a complete picture on the intellectual capital at Skandia. The results of The Navigator System are used to prepare an Intellectual Capital Report, which is presented as a supplement to the annual report. The aim of the report is to highlight the value creating processes at Skandia and forms a basis for both business planning and management as well as for outside reporting.

This approach explains Bounfour's (2003, p.64) view that "the experience of Skandia is now largely integrated into the intangibles literature. It [the Navigator] is also referred to as a benchmark by other organisations around the world". This is an important achievement by Skandia, and has encouraged the continuing development of intellectual capital reporting. However, Fincham and Roslender (2003) identify that on balance, the BSC developed by Kaplan and Norton is more widely understood than the Navigator System.

Intangible Assets Monitor

The Intangible Assets Monitor (IAM) was developed in Sweden by Karl Eric Sveiby. The roots of the IAM can be traced back to the work of Conrad Group in the mid 1980s and is based on the notion that both financial and non-financial indicators should be

used to monitor organisational performance (Fincham & Roslender, 2003). The two main outcomes of Sveiby's work on IC was the development of a theoretical framework for external reporting of intangible assets, and the identification of the 'family of three' elements of IC: individual, customer and structural capital (Sveiby, 1997; Fincham & Roslender, 2003).

The IAM consists of a three-by-three matrix. There are three foci in the model, referred to as external structure, internal structure and employee competence. The IAM is presented in Table 3.5. In describing the IAM, Fincham and Roslender (2003, p.30) state:

External structure is concerned with matters such as relationships with customers and suppliers, brand names, trade marks, company image and reputation. Internal structure embraces a variety of elements, ranging from those already familiar with accountants such as patents and know-how, through such things as administrative and computer systems, to rather intangible assets such as the culture or 'spirit' of the company. The third focus, employee competence, is regarded as the most important by Sveiby, giving rise to both internal and external structure. Together with internal structure, the people with whom the employee competence resides constitute what is usually referred to as the organisation.

Table 3.5 The Intangible Asset Monitor

The Intangible Assets Monitor		
External Structure	Internal Structure	Employee Competence
Indicators of growth/renewal	Indicators of growth/renewal	Indicators of growth/renewal
Indicators of efficiency	Indicators of efficiency	Indicators of efficiency
Indicators of stability	Indicators of stability	Indicators of stability

Growth and renewal and stability indicators constitute two different types of 'input measures'. Together with efficiency indicators, they report the health of the business as a value creating entity (Fincham & Roslender, 2003). Sveiby (1997) suggests that for each of the nine 'indicator cells' of the model, it is sufficient to identify only one or two indicators. These indicators may or may not be of a financial nature (Sveiby, 1997).

Celemi, a Swedish education consultancy, has incorporated a modified version of the IAM in its annual reports since 1995 (Celemi, 1998). They use 23 indicators as well as a colour-coded system for reporting actual numbers which compares whether their

performance to standards they have previously set. This allows them to judge whether their performance is normal, too high, too low, very good, or excellent but not sustainable in the long term. On the IAM Celemi (2000, p.24) states:

While our traditional financial statements provide us with a snapshot of past performance, we use the Monitor to assess our current situation. It is a tool to help us gauge whether or not we are growing in line with our strategic plan. It is an effective lead indicator, and alerts us to any untapped business potential... the benefit of the Monitor is not so much the values we calculate as it is the understanding of what is driving the future performance of our company.

3.3.1.2 Second Wave Intellectual Capital Reporting

The second wave of IC reporting models attempted to link IC more explicitly with innovation and the value creation process (Fincham & Roslender, 2003). These models, developed in North America, attempted to determine where value was being created so it could be better managed. Models included in this wave were the Value Chain Scoreboard (Lev, 2001), The Value Creation Index (Low, 2000; Cohen Kalafut & Low, 2001) and the Value Creation Pyramid (CPRI, 2000; Fincham & Roslender, 2003). These models are less well known than the previous IC reporting models. As work on these models has been largely discontinued by their creators they will not be considered.

3.3.1.3 Third Wave Intellectual Capital Reporting

The third wave of IC reporting saw the development of a more narrative-based format for IC reporting and include Intellectual Capital Statements and Intellectual Capital Self-Accounts (Fincham & Roslender, 2003). The Danish Agency for Trade and Industry (DATI) and the MERITUM project are the leaders in this wave of IC reporting (Petty & Guthrie, 2000). Intellectual capital statements and intellectual capital reports provided organisations with the opportunity to express in narrative terms the IC of an organisation. These models saw a return to the narrative concepts explored in the first wave of IC reporting.

The Danish Guideline

The Danish Agency for Trade and Industry (DATI, head office of The Danish Ministry of Science, Technology and Innovation) issued *A Guideline for Intellectual Capital*

Statements in 2003 (see also Bukh, Larsen & Mouritsen, 2001; Larsen, Mouritsen, & Bukh, 1999; Mouritsen, Larsen & Bukh, 2001; Mouritsen, Larsen, Bukh, & Johansen, 2001). The guideline was developed on the basis of experiences from 17 Danish firms as a result of a government initiative into IC reporting (Bukh & Johansen, 2003). The guideline provides a general framework for the development of an Intellectual Capital Statement (ICS) for external publication (Bukh & Johanson, 2003). The intention behind an ICS is the perceived need that companies need to systematically and actively manage their knowledge resources. Through its preparation, the ICS enables firms to develop an internal knowledge management strategy. It also allows firms to report externally its efforts to obtain, develop, share and anchor the knowledge resources required to ensure future results. The ICS provides a status of the company's efforts to develop its knowledge resources through knowledge management in text, figures, and illustrations.

The ICS consists of four interrelated elements: a knowledge narrative, management challenges, reporting efforts and indicators. Table 3.6 below details the elements of an intellectual capital statement.

Table 3.6 Elements of an Intellectual Capital Statement

Knowledge narrative	A narrative about the firm's ambition to create use-value for its customers and the types of knowledge resources required to accomplish this.	<ul style="list-style-type: none"> ▪ What product or service does the company provide? ▪ How does it make a difference for the user? ▪ What knowledge resources are necessary to be able to supply the product or service? ▪ How does the constellation of knowledge resources product the service/product?
Management challenges	The challenge posed by the role of knowledge resources in the firm's business model.	<ul style="list-style-type: none"> ▪ How are the knowledge resources related? ▪ Which existing knowledge resources should be strengthened? ▪ What new knowledge resources are needed?
Efforts	The initiatives to compose, develop, and procure knowledge resources.	<ul style="list-style-type: none"> ▪ What initiatives, actual and potential, can be identified? ▪ What initiatives should be given priority?
Indicators	The mechanisms of monitoring the portfolio, development and the effects of knowledge resources.	<ul style="list-style-type: none"> ▪ Effects – how do activities work? ▪ Activities – what does the firm do to upgrade knowledge resources? ▪ Resource mix – what is the composition of knowledge resource?

Source: Mouritsen *et al.* (2005).

The ‘knowledge narrative’ explains the flow between the firm’s products/services and knowledge resources through a storyline about how it creates value to users. The ‘management challenges’ element identifies a business model of knowledge where patterns of relations between knowledge resources found in customers, employees and processes are identified. Efforts are concrete initiatives and plans through which knowledge resources are development, acquired and combined, and indicators focus on monitoring the efforts. According to Mouritsen *et al.* (2005, p.32):

These elements function together: the indicators illustrate the development and effects of efforts; efforts make changes to the constellation of knowledge resources; management challenges identify and explain the efforts and initiatives undertaken; the knowledge narrative summaries, communicates and points to what the company’s know-how and capabilities do – or have to do – for the users.

The MERITUM Guideline

A variant of the intellectual capital statement, known as an intellectual capital report, has subsequently been commended in the MERITUM Report (2002). The MERITUM (Measuring intangibles to understand and improve innovation management) project was started in 1998 as a collaboration of 40 researchers from six countries (Denmark, Finland, France, Norway, Spain and Sweden). The project was organised around four key themes: classification of intangibles, management and control of intangibles, capital market analysis, and publication of a guideline for managing and reporting intangible assets. The MERITUM guideline is divided into three sections (Table 3.7).

Table 3.7 The MERITUM guideline

Section of Guideline	Contains
Conceptual Framework	Definition of basic concepts: Intangible resources, IC, human capital, structural capital, relational capital
Management of intangibles	Relationship between measurement and reporting and management is addressed through: 1) steps to be followed (formulating the vision of the firm, identifying critical intangibles, measuring the critical intangibles) 2) supporting processes to transform measurement and reporting into managerial action
IC report model	Elements contained in the report: 1) vision of the firm 2) summary of intangible resources and activities 3) a system of indicators

Source: Bukh & Johanson (2003).

The guidelines developed by the MERITUM project were not widely available to those outside the project nor were they as fully developed as they could be (Bukh & Johanson, 2003). The work by the researchers involved in the MERITUM project was carried over into another project titled E*KNOW-NET in 2001. The purpose of the project was to improve and disseminate the MERITUM guidelines, and encourage European research and communication in the field of intangibles.

3.3.2 Financial Reporting Standard Disclosure Requirements

This section examines the IASB's International Accounting Standard IAS 38 *Intangible Assets* and its New Zealand equivalent of the same name, NZ IAS 38 *Intangible Assets*. The FASB's Statement of Financial Accounting Standards No. 141 *Business Combinations* and SFAS 142 *Goodwill and Other Intangible Assets* are also examined to provide an international comparison.

3.3.2.1 International Financial Reporting Standards

The Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) (formerly the International Accounting Standards Committee, IASC) are standard setting bodies that both take a conservative approach to measuring and reporting intangible capital. Intellectual capital is not dealt with specifically by accounting standards. It is however addressed as part of 'intangible assets'.

International Accounting Standards Board

The IASB, an independent, privately-funded accounting standard-setter based in London, UK, is perhaps the more conservative of the two standard setting bodies. IAS 38 *Intangible Assets* was released in 1998. This standard applies, among other things, to expenditure on advertising, training, start-up, research and development (R&D) activities. IAS 38 superseded the previous accounting standard IAS 9 *Research and Development Costs* which had a very narrow focus on research and development. Gélard (then Chairman of the IASC Steering Committee), stated that "IAS 38 is a step forward towards the separate recognition of intangible assets for the better understanding by users of financial statements of investments in intangible assets" (www.iasb.org).

The introduction of IAS 38 was controversial in two respects. First, the standard setters considered whether internally generated intangible assets should be capitalised and recognised in the statement of financial position. The standard confirmed previous positions that they should be, but only when very strict recognition criteria are met. Second, the standard setters considered the issue of whether there should be an arbitrary upper limit on the useful life of intangible assets for amortisation purposes. The standard includes a rebuttable presumption that the useful life of intangible assets will not exceed 20 years, but it confirms that intangible assets should be amortised over the best estimate of their useful life. It also stated that if a longer period of amortisation is chosen, the enterprise is required to perform a rigorous impairment test (test for loss of value) annually and disclose reasons that justify the longer amortisation period.

Response to the issue of IAS 38 was not positive. Many observers argued that IAS 38 restricted rather than extended the possibility of capitalising intangibles, thereby creating an even larger gap between the market value and book value of an organisation. They also criticised the IASB for being too conservative. However, in defence of the IASB, Johanson and Gröjer (1999, www.iasb.org) stated that:

It is important to note that IASC has never approached the issue of how to separate and label expenses on intangibles; nor has it dealt with the issue of qualitative information about intangibles (...). The conservative approach of the IASC and other national standard setting authorities is not very surprising. The standard setting bodies are not expected to take the lead in the issue of accounting for intangibles; in complex matters they are supposed to take the position of codifying best practice.

The IASB acknowledges the limitations of accounting for intangibles under IAS 38. Carsberg, Secretary-General of the former IASC states “knowledge about intangible assets, particularly how to value them, is still in its early days. IAS 38 reflects the current limits of this knowledge, focusing on reporting the cost of intangible assets” (www.iasb.org).

Financial Accounting Standards Board

The Financial Accounting Standards Board (FASB), a private sector organisation that establishes financial accounting and reporting standards in the US, has adopted a similar stance to the IASB on accounting for intangibles. They have made some

progress towards closing the information gap, and aligning market and book values of organisations. According to Daum (2001), under the new FASB regulations (Statement of Financial Accounting Standards No. 141 *Business Combinations*, and SFAS 142 *Goodwill and Other Intangible Assets*), “companies obliged to report under US GAAP are required now to stop amortizing goodwill at the start of their fiscal year and perform instead a complex impairment test to check the value of their goodwill and intangibles against market value.” A similar requirement is contained in the New Zealand financial reporting requirements under NZ IAS 38 *Intangible Assets*. This treatment enables companies whose goodwill is not impaired to report it as an asset on their balance sheet. The treatment also prevents corporate earnings being diluted by amortisation of assets with an infinite life, without economic reason (Daum, 2001). However, as most intangibles are not reflected in purchased goodwill, and the majority of investments in intangibles are required to be expensed as they are undertaken, both earnings and book value of equity remain understated by the accounting model (Cañibano, García-Ayuso & Sánchez, 2000).

In August 2001, the FASB called for comments in response to the prospectus entitled “Disclosure of Information about Intangible Assets Not Recognized in Financial Statements”. This prospectus examined among other things, the current direction being taken by the FASB in the field of intangible assets. The FASB received 62 responses to the prospectus³. A majority of the respondents agreed there was a need for more and higher quality information on intangibles in the financial statements of business companies.

In their comment letter, MERITUM (2001) stated that according to their research, the lack of information about intangibles in the annual reports of organisations may lead to inefficient resource allocation decisions from the view of managers, and difficult investment decisions from the perspective of creditors and investors. They also urged the FASB to encourage voluntary disclosure of intangible assets, citing its usefulness to users of financial statements as a reason for inclusion in the annual report. Goldman Sachs shared the view of the MERITUM project. They believe financial statement users would benefit from improved disclosures about *all* intangibles (Smith, 2001). They also

³ The responses are available to view and download on the FASB website:
<http://www.fasb.org/oc/fasb-getletters.php?project=1123-001>

stated that the current financial accounting model does not capture a significant portion of enterprise value drivers perceived by the capital markets (Smith, 2001).

Most respondents agreed with the requirement to subject intangibles to an annual impairment test rather than periodic amortisation. According to Smith (2001), Principal Accounting Officer at Goldman Sachs, amortising acquired intangible assets ignores a company's ability to create new intangible assets and to sustain, and in most cases increase, the value of the enterprise.

However, Harrington of IBM does not agree with mandatory reporting requirements of intangible assets. He states in his comment letter to the FASB that "if information in these areas is valuable to financial statement users, companies that voluntarily report such data will be rewarded" (Harrington, 2001). He recognises that there is an undesirable inconsistency in current GAAP for intangibles. However he states that the costs of achieving parity far outweigh the benefits. The American Accounting Association Financial Accounting Standards Committee (AAAFASC) agrees. They state that the lack of voluntary disclosure of intangibles to date may suggest that the benefits of these disclosures are not very large, or not relevant to investors (AAAFASC, 2001). Despite the dissenting comments by a few authors, the majority of respondents to the FASB's proposal were in favour of continuing work on disclosure standards relating to intangible assets.

3.3.2.2 Intellectual Capital Disclosure Requirements in New Zealand

NZ IAS 38 *Intangible Assets* was first released in New Zealand as Exposure Draft No. 87 (ED-87) in 1999. NZ IAS 38 is taken directly from IAS 38 *Intangible Assets* released by the IASC in 1998, bar some minor amendments by the Financial Reporting Standards Board (FRSB) to the terminology and format to ensure consistency with other New Zealand pronouncements.

Prior to the release of NZ IAS 38, there was no single accounting standard which dealt solely with intangible assets. Research and development activities were previously covered under FRS-13 *Accounting for Research and Development Activities*, purchased goodwill in FRS-36 *Accounting for Acquisitions Resulting in Combinations of Entities*

or Operations, and depreciation of depreciable intangible assets (other than research and development and goodwill) under SSAP-3 *Accounting for Depreciation*.

NZ IAS 1 *Presentation of Financial Statements* paragraph 68(c) requires intangible assets, as a category, to be separately disclosed in an entity's balance sheet. There is no specific requirement to distinguish between goodwill and other intangible assets, however NZ IAS 1 paragraph 69, requires entities to provide additional line items, heading and subtotal on the balance sheet where this presentation is relevant to an understanding of the entity's financial position.

Accounting for intangibles is governed by NZ IAS 38. Under this standard intangibles are classified as *identifiable* or *unidentifiable*. Identifiable intangible assets can be considered such because a specific value can be placed upon each individual asset, and they can be separately identified and sold. Identifiable intangibles include patents, trademarks, licences, research and development, brand names, copyrights and mastheads. Unidentifiable intangible assets cannot be separately identified and measured with acceptable levels of reliability. They include loyal customers, good employees and established reputation. They are treated as a composite asset termed 'goodwill'.

NZ IAS 38 prohibits the capitalisation of any internally generated intangibles. Only identifiable intangible assets and purchased goodwill may be recognised in the financial statements. Internally generated intangibles (other than those relating to R&D expenditure) must be expensed as incurred.

Recognition of internally generated intangibles was permitted in New Zealand prior to the adoption of International Financial Reporting Standards (IFRSs). Deegan & Samkin (2005) state that since any expenditure on internally generated intangibles must be expensed under NZ IAS 38, the information in the balance sheet available to financial statement users will be reduced. They question whether the prohibition of recognition of internally generated intangible assets will 'improve' the information available to financial statement users.

Van der Meer-Kooistra & Zijlstra (2001) recognise that while [NZ] IAS 38 provides for the disclosure of some IC elements in the annual report, most of the IC resources that are valuable to entities still remain undisclosed.

3.3.2.3 Future Directions

The FASB and the IASB are currently involved in a convergence project to determine whether any major differences exist between their respective financial reporting standards and whether these differences should be eliminated. As at the 22 April 2006, the FASB state regarding the convergence project:

This potential short-term convergence project is currently in the staff research phase. The staff research consists of identifying existing differences between IFRS and U.S. GAAP relating to the accounting for research and development and evaluating the feasibility of one or more narrowly scoped projects that would improve financial reporting in the United States while eliminating differences between IFRS and U.S. GAAP

(http://www.fasb.org/project/short-term_intl_convergence_r&d.shtml)

A number of authors have identified the need for a framework for reporting on intangible assets and intellectual capital (see for example Bontis, 2001; Petty & Guthrie, 2000). Moore (as cited in Bontis, 2001 p.43), research director for the Canadian Institute for Chartered Accountants recognises the need for new measures that incorporate the key value drivers of the knowledge economy. He states:

Financial performance measures derived from information in financial statements or other financial sources have been used by publicly listed companies for many years. They highlight specific aspects of a company's profitability, solvency, liquidity, productivity or market strength. Such performance measures are however based on historical and transaction based information that does not take into account changes in values or internally generated intangibles. There is the growing view that financial performance measures by themselves are inadequate for strategic decision making. They need to be supplemented or even to some extent, replaced by non-financial measures that cover such matters as, for example, customer satisfaction and operating efficiency [emphasis in original].

However, there does not seem any urgency for undertaking such a project from either the IASB or the FASB. The IASB is content to bide their time. The IASC's Secretary-General, Carsberg recognises that:

There is growing demand for further information on the value of intangible assets using financial and non-financial indicators, maybe not as part of the financial

statements. Debates on the subject are very much alive. The IASC will watch the developments in this area and may do more work in the future when preparers and users have gained more experience on the value of intangible assets (www.iasb.org).

The next section discusses the accountability relationship between entities and their stakeholders. This relationship is extended to local governments and their stakeholders, and it is demonstrated how annual report disclosure of IC can facilitate the discharge of accountability.

3.4 ACCOUNTING, ACCOUNTABILITY AND STAKEHOLDERS

Accountability is perhaps the single most important concept in accounting. Traditionally, the accountability relationship exists between managers and shareholders; however it has broadened over time to include various stakeholders. According to Deegan and Samkin (2004, p.1074) “many organisations are currently making public statements to the effect that they consider they do have responsibilities to parties other than just shareholders”.

Accountability in local governments is equally important. The public sector reforms of the 1980s and 1990s aimed to increase transparency and accountability in the local government sector. The most common method of discharging accountability to stakeholders is through the annual report. This section explores the accountability relationship within local government and how intellectual capital disclosures can be made within the framework of accountability and transparency.

3.4.1 Accountability and Transparency

Transparency in policy making and accountability for the use of tax payers funds are fundamental principles of democratic government (Pallot, 2001). Accountability is described by Gray, Owen and Adams (1996, p.38) as “the duty to provide an account (by no means a financial account) or reckoning of actions for which one is held responsible”. In order for the accountability relationship to exist, one party (the accountant) must be accountable to another party (the accountee) for an action, process, output or outcome (Steccolini, 2004). Accountability involves being “obliged to explain one’s actions, to justify what one does” (GASB, 1987 in Steccolini, 2004, p.330) and is

vitaly important in a situation where one party has stewardship or control of another party's assets.

Transparency is described by Pallot (2001) as referring to the availability of information to the public on the transactions of the government and the transparency of the decision making process. Transparency is fundamental to expenditure management across all democracies (Premchand, 1993). The New Zealand local government reforms of the 1980s and 1990s (see Chapter Two) aimed to increase the transparency and accountability of local government to its constituents. The reforms were based primarily on agency theory and public choice theory, and as such, there is an accountability element to the public at large. According to Coy and Dixon (2004), since the reforms of the 1980s, public sector annual reports have been produced with public sector accountability as an important espoused objective of reporting. Indeed, it could be argued that local governments are even more accountable to their stakeholders than their corporate counterparts, as they are in the powerful position to tax, rate and levy.

This research draws on the ideas of Scott (1941), Normanton (1971), Chen (1975) and Coy, Tower and Dixon (1994), who argue for open disclosure to all citizens who have the opportunity to make criticism. Accountability of local government is owed not only to central government and its ministers, but also to stakeholders such as ratepayers, employees, businesses and the wider community. Steccolini (2004, p.331) agrees that the accountability relationship does exist in the public sector, and "the prevailing idea of public accountability changes over time as a consequence of changes in the social, cultural, political context". According to Coy & Dixon (2004) this accountability is discharged through reporting of comprehensive information about the condition, performance, activities and progress of the local government in the changing context within which it operates. The idea of open reporting of local governments can be extended to include intellectual capital disclosures. It is contended in this research, that the discharge of accountability to stakeholders is facilitated through the inclusion of intellectual capital information in the annual reports of local government.

3.4.2 Intellectual Capital and Stakeholder Theory

Given that organisations are not required by accounting standards or by law to report on most of their intellectual capital, the majority of organisations that elect to disclose or report on their intellectual capital are doing so voluntarily (Petty & Cuganesan, 2005). Most of the literature focuses on IC reporting and disclosure by corporate entities. It can be argued that this literature applies equally to the public sector organisation due to the high level of accountability between the public sector and its stakeholders.

The primary incentive for most organisations to disclose their IC is to render the invisible visible (Cooper & Sherer, 1984). By identifying and valuing their intellectual capital, managers of organisations are better able to manage their IC. According to Guthrie and Petty (2000), if IC is not reported, then there is a risk that it is not receiving sufficient management attention.

Stakeholder theory has an ethical (moral) branch, and a positive (managerial) branch. The ethical branch argues that all stakeholders have the right to be treated fairly by an organisation and the managers of an organisation should manage it for the benefit of all stakeholders. (Deegan, 2000; Guthrie, Petty & Ricceri, 2004). The positive branch argues that a stakeholder's power to influence corporate management is viewed as a function of the stakeholder's degree of control required by the organisations (Guthrie, Petty & Ricceri, 2004; Ullmann, 1979). The positive branch of stakeholder theory predicts management is more likely to focus on the expectations of powerful stakeholders; those that control the resources (Deegan, 2000).

Stakeholder theory has been posited to explain the voluntary disclosure of intellectual capital by organisations. This theory considers the importance for organisational survival of satisfying the demands (sometimes conflicting) of its various stakeholders (Deegan & Samkin, 2004). It is a natural progression from the broad accountability relationship, and recognises that all stakeholders have a right to be provided with information about how organisational activities impact them (Deegan, 2000; Deegan & Samkin, 2004; Guthrie, Petty, Yongvanich & Ricceri, 2004). Stakeholder theory attaches organisational accountability to organisations which extends beyond their

financial and economic performance and assumes that environmental and social information is material to the users of annual reports (Guthrie *et al.*, 2004).

Stakeholder theory postulates that managers will elect to voluntarily disclose information about their intellectual, social and environmental performance, over and above mandatory requirements in order to satisfy their stakeholders. According to stakeholder theory “an organisation’s management is expected to take on activities expected by their stakeholders and report on those activities to the stakeholders” (Guthrie *et al.*, 2004, p.283). The reporting of this information is achieved through the annual report.

This much wider view of accountability has attracted its fair share of criticism from opposing factions. Opponents of stakeholder theory such as Jensen (2001) argue that by increasing the accountability relationship to include stakeholders, managers actually become unaccountable for their actions. He argues that “because stakeholder theory provides no definition of ‘better’, it leaves managers and directors unaccountable for their stewardship of the firm’s resources. With no criteria for performance, managers cannot be evaluated in any principled way” (Jensen, 2001, p.305). He also argues that “stakeholder theory plays into the hands of special interests who wish to use the resources of firms for their own ends” (Jensen, 2001, p.306). Burritt and Welch (1997) identify that the links between corporate accountability based on competition and public interest are less than obvious.

While accountability of managers to stakeholders is a contentious issue, the accountability of the government to the general public is an integral part of democratic society. Accountability of government departments is first and foremost to shareholding ministers, and then to Parliament. Ultimately however, the public is the most important stakeholder. In a democratic society the public is entitled to demand accountability from the government and local government authorities. Hyndman and Anderson (1991, p.51) state that “public-sector organisations must be held accountable not only for the money entrusted to them, but also for results”.

In the public sector, the relationship between accountant and accountee is much broader than the conventional shareholder-manager relationship. It extends to complex web of

interrelationships with government and non-government groups (Burritt & Welch, 1997). The reason for this is that there are “multiple stakeholders with an interest in the accountability of government, and hence, a number of accountees, each with a different interest in the outcomes of public sector activities” (Burritt & Welch, 1997, p.533). Five key stakeholder groups can be attributed to having an interest in the accountability of public sector organisations. These are shown in Table 3.8 below.

Table 3.8: Stakeholders with an interest in government activities

Stakeholder Group	Examples
The regulators	Parliament and bodies that advise parliament, parliamentary committees and consulting organisations
The agencies of Parliament	Groups that implement, monitor and enforce regulation
Those who undertake activities that affect the environment	Industry groups, manager and natural resource planners in government departments.
Those affected by the activity	Local, national and international communities, including the general public and associated government bodies
Non-government organisations and specific community interest groups	Charities, organisations and academics

Source: Burritt & Welch (1997).

The stakeholders identified by Burritt and Welch (1997) are all users or potential users of the local government annual report. The annual report is the statutory formal communication vehicle between an entity and its interested constituencies (Stanton, Stanton & Pires, 2004) but it is seen as more than just a formal requirement. Many organisations use the annual report as communication tool to discharge accountability to their stakeholders (Steccolini, 2004). This is discussed in the next section.

3.4.3 Annual Reports

The annual report is generally considered as being the primary medium for the discharge of accountability by an organisation to its stakeholders (Steccolini, 2004). All forms of data reaching the public domain can be considered to be part of the accountability-discharge activity of an organisation. Monitoring all communications by an organisation is the ideal standard and should be studied in order to capture all IC reporting. However, it is impossible to be certain that all communications have been identified. The annual report is often a useful and relevant proxy (Guthrie *et al.*, 2004).

The annual report has been established as a major medium for communicating social and environmental information to the public (Cowen, Ferreri & Parker, 1987; Guthrie & Parker, 1989; 1990; Neu, Warsame & Pedwell, 1998; Roberts, 1992). For this reason, annual reports can be considered an appropriate barometer of an organisation's attitude towards social reporting and more specifically, intellectual capital reporting. Guthrie *et al.* (2004) identify two reasons for this. First, the company has complete editorial control over the document (excluding the audited financial sections). Second, it is usually the most widely available public document distributed by the organisation.

In New Zealand, as a result of the extensive financial reforms of the 1980's, New Zealand government accounts are prepared like those of commercial businesses, using Generally Accepted Accounting Practice (GAAP) (Lawrence, Davey & Low, 1998). All local authorities are required under the *Public Finance Act 1989* to prepare annual reports according to current GAAP which makes comparisons between public and private sector organisations relatively easy. As seen earlier in this chapter, many corporate firms are beginning to recognise the value of intellectual capital measurement and disclosure (Bozzolan *et al.*, 2003; Brennan, 2001; Guthrie & Petty, 2000; Sveiby, 1997). Since local government annual reports are prepared along the same lines as corporate annual reports, it follows that local governments would also benefit from incorporating intellectual capital reporting into their annual reports.

It is argued in this study that disclosure of IC in the annual reports of local government would enhance the information value of the reports, as well as facilitating the discharge of accountability. Local governments are to large extent service organisations, which are characterised by a high level of human capital, related to employees' knowledge, and external capital related to their citizens and constituents. By providing this information in the annual reports, stakeholders are better able to judge whether the local governments are performing satisfactorily and discharging their accountability.

3.5 SUMMARY

The worldwide economy is in the midst of a paradigm shift (Bontis, 2000). In this new paradigm, value is placed on intangible assets including intellectual capital. Traditional historical cost-based accounting systems inadequately capture the value drivers of the

new economy, and often intellectual capital is not recognised at all. Intellectual capital reporting, while still in its infancy, has developed as a response to organisations requiring systems to define, measure, and manage their knowledge-based assets.

This chapter reviewed the major models that have been developed in the field of intellectual capital reporting. The development of IC reporting can be viewed as being either first-stage or second-stage. Within these stages, waves of models appeared. The first wave models were considered to be ‘scorecard’ type approaches and include the Balanced Scorecard (Kaplan & Norton, 1992), Skandia’s Navigator System (Edvinsson, 1997), and the Intangible Assets Monitor (Sveiby, 1997). The second wave included three models developed in North America: the Value Chain Scoreboard (Lev, 2001), the Value Creation Index (Low, 2000; Cohen Kalafut & Low, 2001), and the Value Creation Pyramid (CPRI, 2000; Fincham & Roslender, 2003). Work on these models has since been discontinued. Third wave models saw a return to narrative-based models in the form of intellectual capital statements. These models include the Danish Guideline (DATI, 2003) and the MERITUM Guideline (MERITUM, 2002). While many of these models focus on different aspects of IC, they aim to a greater or lesser extent, to synthesise the financial and non-financial value-generating aspects of the organisation into one report (Guthrie, 2001).

Currently the majority of intellectual capital reporting worldwide is voluntary. In New Zealand, disclosure of intangible assets is governed by the reporting standard NZ IAS 38 *Intangible Assets*. This standard provides for the recognition of *identifiable* intangible assets and purchased goodwill in the statement of financial position of reporting organisations. Intangible assets that are not separately identifiable, or that have been internally generated are not permitted to be recognised in the financial statements. This standard results in the vast majority of intellectual capital remaining undisclosed.

Accountability is a fundamental concept in accounting. The New Zealand local government reforms of the 1980s and 1990s aimed to increase accountability and transparency of the sector through the introduction of commercial financial reporting principles. The annual report is the primary vehicle for the discharge of this

accountability and is used the by the public sector to provide information to its stakeholders.

It was argued that the discharge of accountability can be further enhanced through the inclusion of intellectual capital reporting in the annual reports of local government. By including information on intellectual capital, transparency in decision making is enhanced and stakeholders can assess whether organisations are meeting their accountability requirements. It is suggested in this research that local government bodies should voluntarily disclose information on their intellectual capital in order to discharge their accountability to their stakeholders. The relationship between local government and its stakeholders is characterised by a high level of accountability and transparency in financial reporting which could be enhanced through the disclosure of IC in the annual reports of the local government authorities.

The next chapter describes the methodology and method that underpins this research.

CHAPTER FOUR

RESEARCH METHODOLOGY AND METHOD

4.1 INTRODUCTION

Research is defined by Lincoln & Guba (1986, p.549) as “a type of disciplined inquiry undertaken to resolve some problem in order to achieve understanding or facilitate action”. This definition makes three assertions. First, research is *disciplined inquiry* which commits publicly examinable and verifiable data to “compression and rearrangement processes” (Lincoln & Guba, 1986). Second, the focus of the research is on a problem to which the outcome of the research seeks a resolution. Finally, the outcome of research is the achievement of understanding or the facilitation of action, or both (Lincoln & Guba, 1986).

Each research project is grounded on a set of methodological principles which influences and guides the research method. Methodology refers to the principles by which adherents to any discipline learn to accept or reject knowledge (Hooks, 2000). The methodology is the guiding strategy which underlies the research (Aitken, 1980). Method refers to the research process – the way in which data is collected. This chapter describes both the methodology and the method that underpins this research to determine the extent and quality of intellectual capital reporting by local authorities in New Zealand. The chapter is structured as follows. First, an overview of the scientific approach which underpins third generation research is presented, including a consideration of the underlying ontological and epistemological assumptions of this type of research. This is followed by an outline of the methodology adopted in this research. Second, the development of a disclosure index through a consultative process with local government stakeholders is described. Finally, the results of the stakeholder consultation exercise and the final disclosure index is presented.

4.2 RESEARCH METHODOLOGY

Research in the social sciences, including accounting, can be characterised as belonging to one of a number of paradigms. Each research paradigm has its own set of underlying principles and assumptions. A paradigm is defined by Burrell and Morgan (1979 p.25)

as “the very basic meta-theoretical assumptions which underwrite the frame of reference, mode of theorising and *modus operandi* of the social theorists who operate within them” [emphasis in original]. They state that a group of theorists working within a paradigm approach social theory in the same way.

Paradigms are differentiated on the basis of their epistemology, ontology and view on human nature (Morgan & Smircich, 1980). Ontology refers to the beliefs about the nature of reality. Reality can be seen as objective, singular, and separate from the researcher, or reality can be seen as subjective and multiple as seen by participants in a study (Collis & Hussey, 2003). Epistemology refers to the relationship between the researcher and the researched – the viewing the researcher as separate from the researched, or the researcher being submersed in the world of the research subjects.

Burrell and Morgan (1979) consider all research to be contained within two key dimensions: the subjective-objective dimension, and the regulation-radical change dimension. This leads to four key paradigms for the analysis of social theory: functionalist, interpretive, radical humanist and radical structuralist. This framework of accounting research has been criticised in the literature (see Chua, 1988 for an in-depth discussion). However, it still forms the basis for many later works.

Morgan and Smircich (1980, p.491) agree with Burrell and Morgan’s (1979) view that “all approaches to social science are based on interrelated sets of assumptions regarding ontology, human nature and epistemology”. They posit that every paradigm in social science research lies somewhere on a continuum which ranges from subjectivist approaches on the far left, to objectivist approaches on the far right. They identify six key points on the continuum, as a way in which to view accounting research. They argue that the transition from one approach to another should be gradual. Often researchers incorporate insights from other perspectives into their own research. Ultimately, Morgan and Smircich (1980) recognise that the approach to research should reflect the assumptions about the underlying nature of the phenomena to be studied. Figure 4.1 identifies the basic assumptions on the subjective-objective continuum identified by Morgan and Smircich (1980).

Table 4.1: Network of basic assumptions characterising the subjective-objective debate

	← Subjectivist Approaches to Social Science					Objectivist Approaches to Social Science →
Core Ontological Assumptions	Reality as a projection of human imagination	Reality as a social construction	Reality as a realm o' symbolic discourse	Reality as a contextual field of information	Reality as a concrete process	Reality as a concrete structure
Assumptions about Human Nature	Man as pure spirit, consciousness, being	Man as a social constructor, the symbol creator	Man as an actor, the symbol user	Man as an information processor	Man as an adaptor	Man as a responder
Basic Epistemological Stance	To obtain phenomenological insight, revelation	To understand how social reality is constructed	To understand patters of symbolic discourse	To map contents	To study systems, process, change	To construct a positivist science
Some Favoured Metaphors	Transcendental	Language game, accomplishment, text	Theatre, culture	Cybernetic	Organism	Machine
Research Methods	Exploration of pure subjectivity	Hermeneutics	Symbolic analysis	Contextual analysis of Gestalten	Historical analysis	Lab experiments, surveys

Source: Morgan & Smircich (1980).

Chua (1986) extends the work done by Morgan and Smircich (1980) and applies it specifically to accounting research. She classifies knowledge into three perspectives: mainstream accounting, the interpretive perspective, and the critical perspective and offers a discussion on the basic assumptions of each of the three paradigms. Chua's (1986) three-paradigm construct has been widely adopted as a framework for identifying paradigms within accounting research. Table 4.2 on the next page shows the assumptions about ontology, epistemology and human nature in the three paradigms: mainstream (functionalist, scientific), interpretive (naturalistic) and critical.

Table 4.2 Dominant assumptions of accounting paradigms

	Mainstream	Interpretive	Critical
Beliefs about knowledge (epistemology)	Theory is separate from observations that may be used to verify or falsify a theory.	Explanations of human intention sought. Their adequacy is addressed via the criteria of logical consistency, subjective interpretation and agreement with actor's common-sense interpretation.	Criteria for judging theories are temporal and context-bound.
Beliefs about physical and social reality (ontology)	Empirical reality is objective and external to the subject. Human beings are passive objects: not seen as makers of social reality. Societies and organisations are stable – dysfunctional conflict may be managed through accounting control.	Social reality is emergent, subjectively created and objectified through human interaction. Social order is assumed. Conflict is mediated through common schemes of social meanings.	Human beings have inner potentialities which are prevented from full emergence through restrictive mechanisms. Fundamental conflict is endemic to society. Conflict arises because of injustice and ideology in the social, economic, and political domains which obscure the creative dimension in people.
Relationship between theory and practice	Accounting specifies means, not ends. Acceptance of extant institutional structures.	Theory seeks to explain action and understand how social order is produced and reproduced.	Theory has a critical imperative: the identification and removal of domination and ideological practices.

Source: Adapted from Chua (1986).

Guba and Lincoln (1989) suggest that the scientific (mainstream) research and evaluation paradigm has moved through four evolutionary stages, driven by changes in the social context over time. The ‘first generation’ of evaluation concerned individual performance measurement which emerged in response to the development of mass education and large scale industry at the beginning of the twentieth century (Carpenter, 2004). This generation became known as the ‘measurement generation’ of research and is firmly grounded in traditional scientific methodology (Guba & Lincoln, 1989). The role of the researcher was purely technical, and it was expected that the researcher was well-versed in the use of a wide range of instruments so that any variable for an investigation could be measured.

Second generation evaluation shifted to a more formative type of assessment which evaluated programs to determine if they needed modifying (Carpenter, 2004). According to Guba & Lincoln (1989, p.28) second generation research was characterised “by *description* of patterns of strengths and weaknesses with respect to certain stated objectives” [emphasis in original]. Guba and Lincoln (1989) state the role of the researcher was primarily to describe, however the earlier technical aspects of the role was retained. In second generation evaluation, measurement was no longer

considered as being equivalent to evaluation, but became one of several tools that could be used in research (Guba & Lincoln, 1989).

Third generation research sought to “assert the role of the independent and neutral professional evaluator as someone who focused on both objectives and outcomes and decided in ‘summative’ terms whether or not they had been successful” (Carpenter, 2004, p.306). According to Guba & Lincoln (1989, p.30) the third generation of research was “characterised by efforts to reach *judgements*, and in which the evaluator assumed the role of the *judge*, while retaining the earlier technical and descriptive functions”. The third generation evaluator required a set of standards against which to judge the research subject, and these standards were provided by scientific processes (Guba & Lincoln, 1989).

Fourth generation research moved towards the reconciliation of diverse stakeholder interests. According to Lincoln and Guba (1989, p.50) it is a form of evaluation in which “the claims, concerns, and issues of stakeholders serve as organisational foci (the basis for determining what information is needed), that is implemented within the methodological precepts of the constructivist inquiry paradigm”. This stage of research is characterised by a high level of interaction, and involves a hermeneutic dialectic circle process during which stakeholder groups attempt to negotiate a resolution between unresolved claims, concerns and issues (Guba & Lincoln, 1989; France, 2001). The fourth generation of research moves away from the scientific paradigm towards the constructionist paradigm in which the researcher becomes an integral part of the research. Fourth generation research is also referred to as naturalistic, hermeneutic, subjective or interpretive research (Guba & Lincoln, 1989).

This research primarily adopts the scientific methodology. It is positioned in Guba & Lincoln’s (1989) third generation of research, where the independent researcher focuses on the objectives and outcomes of the research to determine the success or failure of the research question. In the third generation of research, the researcher assumes the role of a judge who assesses the research subject against a set of standards. In this research, the disclosure of intellectual capital items in the annual reports of local authorities is judged against disclosure index designed to measure the extent and quality of the disclosures.

4.2.1 The Scientific Approach

The scientific approach is considered to be the dominant research methodology adopted in accounting research (Morgan, 1983; Chua, 1986; Ryan, Scapens & Theobald, 2002). This approach sees reality as objective, singular and concrete, where the researcher and the observed are divorced from each other. The researcher can uncover reality through direct experience or observation, and the aim is to develop universal laws that can be used to test hypotheses (Robson, 2002). These ontological and epistemological assumptions lead to a highly structured research approach which begins with a theory or conceptual structure from which number of hypotheses are developed. Dependent and independent variables are identified, followed by the collection of data. The data are subjected to mathematical techniques (often including statistical techniques) to validate or refute the hypotheses. A set of controls provides strength to the verification of causality (Abdel-khalik & Ajinkya, 1979).

Abdel-khalik and Ajinkya (1983) identify the objectives of accounting research as describing, explaining or predicting phenomena. These objectives fit comfortably with the scientific research approach, which is concerned with explanations and predictions. This research is based on the development and application of a disclosure index for measuring the extent and quality of intellectual capital annual report disclosures. Research concerning disclosure indices and annual report disclosure has commonly supported a positivistic (scientific) methodology with the intention of the studies being to explain reasons for voluntary reporting of information (Shareef, 2003; Hooks, 2000).

This study focuses particularly on the level of intellectual capital disclosures in the annual reports of local government and how this disclosure can facilitate the discharge of accountability to local government stakeholders. The intention of the research is to identify stakeholder information needs as they relate to intellectual capital, and compare those needs to the extent of annual report disclosure by local authorities. The aim is to identify an information gap between what stakeholders deem important and what local governments deliver in their annual reports.

4.1.2 Research and Evaluation

Lincoln and Guba (1986) make a distinction between research and evaluation. However, they highlight the similarities and state that both research and evaluation are variants of ‘disciplined inquiry’. To qualify as disciplined inquiry, the report of an inquiry must inform the reader, in ways that are publicly confirmable, what the nature of the data is, the sources of the data, and the context in which they were collected (Lincoln & Guba, 1986).

Evaluation has been defined by a number of authors in various ways:

- It is as a process for determining congruence of performance with objectives or intent (Popham, 1975; Tyler, 1949);
- A process of delineating, obtaining and providing useful information for judging decision alternatives (Stufflebeam, 1971);
- A process for comparing actual effects to a profile of demonstrated needs (Scriven, 1973); and
- A process for critically describing and appraising an evaluand through connoisseurship and criticism (Eisner, 1979).

Lincoln and Guba (1986) suggest four different types of evaluation created by combining four dimensions: formative/summative and merit/worth. Merit refers to the intrinsic, context free value of the evaluation which is relatively consistent across different contexts. Worth refers to an extrinsic, context determined value which varies greatly from context to context. Formative evaluation provides descriptive and judgemental information, which leads to refinement, improvement, alterations and/or modification of the evaluand. In contrast, the aim of summative evaluation is to determine the impacts, outcomes or results of the evaluation. Table 4.3 below illustrates the four types of evaluation.

Table 4.3 Types of evaluation

	Merit	Worth
Formative	Formative Merit	Formative Worth
Summative	Summative Merit	Summative Worth

Source: Adapted from Lincoln & Guba (1986).

Lincoln & Guba (1986, p.550) describe each of these four types of evaluation in turn:

- *Formative merit*: evaluation that is performed to modify or improve some evaluand while it is in the process of development.
- *Summative merit*: evaluation is performed in order to certify or warrant its merit against some set of standards, after the evaluand has been developed into its putatively final form.
- *Formative worth*: evaluation is performed to facilitate the adoption, adaptation, or fitting of the evaluation to some local context of use.
- *Summative worth*: evaluation is performed to warrant or certify an evaluand for permanent local (situational) use.

Lincoln & Guba (1986, p. 550) summarise their position with the following definition of evaluation:

*Evaluation is a type of **disciplined inquiry** undertaken to determine the **value (merit and/or worth)** of some entity – the **evaluand** – such as a **treatment, program, facility, performance** and the like – in order to **improve or refine** the evaluand (**formative evaluation**) or to **assess its impact** (**summative evaluation**) [emphasis in original].*

This research can be considered as belonging to the *summative* dimension of evaluation. Summative evaluation determines the impacts, outcomes or results of an evaluand (Lincoln & Guba, 1986). The objective of the research is to determine the extent and quality of intellectual capital (IC) reporting as measured against a set of disclosure standards, and as a result of the evaluation, offer improvements that can be made to intellectual capital reporting in the annual reports of local governments. Further classification into *summative merit* evaluation is possible, which is performed in order to certify or warrant its merit against some set of standards (Lincoln & Guba, 1986). A corporate intellectual capital disclosure index based on Sveiby's (1997) framework provided the foundation for the research, which was modified to render it applicable to the local government sector. The disclosure index was used as a 'standard' against which the level of intellectual capital reporting by the local government sector was judged. Finally, the disclosure index can be used by local authorities as a framework for future intellectual capital reporting.

The *formative* dimension of evaluation can also be applied to this research. Formative evaluation provides descriptive information which leads to the alteration, refinement, improvement or modification of that which is being evaluated (Lincoln & Guba, 1986). This research seeks to determine the extent and quality of IC reporting, and as a result of the evaluation, offer improvements that can be made to intellectual capital reporting in the annual reports of local governments. Further classification of the research as *formative worth* evaluation is possible, which is performed to facilitate the adoption, adaptation or fitting of the evaluation to a local context of use. The intellectual capital disclosure index used in this research is based on Sveiby's (1997) framework for intellectual capital disclosure by corporate entities. The framework was modified so that it could be applied to the local government sector.

4.2.2 The Approach Taken in This Research

The scientific approach forms the basis of the research methodology for this study. The research is grounded in third dimension evaluation (Guba & Lincoln, 1989) which uses basic scientific principles to investigate whether particular pre-defined standards have been met.

The first objective of the research is to develop a disclosure index that can be used to determine the extent and quality of intellectual capital disclosures in the annual reports of the New Zealand local government sector.

This objective represents *summative evaluation* (Lincoln & Guba, 1986). The disclosure index represents the standard against which to judge the actual level of intellectual capital reporting by the local government sector. The second objective of the research is to measure the current level of intellectual capital disclosure against a pre-defined disclosure index. This objective characterises the research as *third generation evaluation* (Guba & Lincoln, 1989).

The final objective of the research is to make recommendations regarding intellectual capital reporting to the local government sector in light of the research findings. This objective characterises the research as *formative merit evaluation* according to Lincoln & Guba's (1986) four dimensions of evaluation. In this case, it is hoped that the

recommendations made in light of the research findings will improve areas of intellectual capital reporting by the local government sector that were considered poor by stakeholders.

Abdel-khalik and Ajinkya (1979, p 10) outline the followings steps that would result in an ideal scientific design:

- Develop the conceptual and theoretical structures, including causal links and chains;
- Operationalise the theoretical constructs and relationships to state the specific hypothesis to be tested;
- Construct the research design;
- Implement this design by sampling and gathering data;
- Analyse observations in order to test hypothesis;
- Evaluate the results; and
- Consider and specify limitations and constraints.

This research posits that the level of intellectual capital disclosure by the New Zealand local government sector is relatively low which results in only partial discharge of accountability to local government stakeholders. This problem statement provides a guide for the research into the quality and extent of intellectual capital reporting by the New Zealand local government sector.

The preliminary list of IC items for the disclosure index (the standard against which IC disclosure is measured) was initially drawn from extant literature in the field of IC reporting. However, since no previous research had focused on local governments, or indeed, the public sector, stakeholders from the local government sector were consulted to provide opinions on what they thought would be important items to include in the disclosure index. This stakeholder feedback process was supported by the third generation approach to research (Guba & Lincoln, 1989), whereby the researcher judges the research subject (the local government sector) against a set of pre-determined standards (the disclosure index). This type of inquiry is understood to be value-bound (as opposed to value-free) (Lincoln & Guba, 1985; Hooks, 2000) which enhances its potential as a knowledge gathering process.

In this research, quantitative aspects of the research design included the development of the disclosure index, the calculation of the individual item weightings, the scoring of the intellectual capital annual report disclosures, and the reporting of those results by way of numerical tables, graphs and statistical analysis. Qualitative aspects involved the analysis of descriptive questions in the survey instrument which allowed stakeholder panel members to express their opinions on the level of importance of IC disclosure by local authorities. The use of a stakeholder panel was considered more appropriate than a large sample survey. It facilitated a deeper understanding of the topic of IC reporting by local government authorities by enabling information to be obtained from a purposely selected group of stakeholders. This research is also *formative* to the extent that it aims to provide local governments with a guide for intellectual capital reporting based on the items proposed by the local government stakeholder panel for the disclosure index. This ‘best practice’ model can be used by local governments to identify important aspects of intellectual capital that they should be disclosing in their annual reports, in order to facilitate the discharge of accountability to their stakeholders.

This research incorporates elements of both a scientific and a qualitative approach. It is underpinned by the structured and disciplined nature of the scientific approach, and makes extensive use of quantitative data. Simultaneously, there is the inclusion of qualitative information to enrich the quantitative findings. This ensures the methodology adopted allows the freedom to meet the research objectives and provide useful information to local government stakeholders regarding the level of intellectual capital reporting in local government annual reports.

4.3 RESEARCH METHOD

4.3.1 Research Preparation

This research focuses on intellectual capital disclosures by local government authorities in New Zealand. At the time of the research, there were no New Zealand-specific or international studies of intellectual capital disclosure by local governments.

In preparation for this research an extensive literature review was conducted. The literature review examined the New Zealand local government reforms of the 1980s

and 1990s. The literature tracked accountability in local governments and identified the annual report as the primary mechanism for discharging accountability. In order to analyse whether this accountability was being discharged, a research instrument measuring the level of intellectual capital was required.

The literature on intellectual capital was reviewed. The review provided a broad background to the study and highlighted the lack of literature pertaining to intellectual capital in local government authorities. A number of studies investigated intellectual capital reporting through content analysis (see Bozzolan, Favotto & Ricceri, 2003; Brennan, 2001; Guthrie, Petty, Yongvanich & Ricceri, 2004; Guthrie & Petty, 2000; Wong & Gardner, 2005); however, these studies focused on annual report disclosures in the private sector by listed companies. Collier (2001) presented a case study of intellectual capital within the UK police force which focused on how IC was acquired, utilized and reported. This was the only public-sector based study that was identified by the extensive literature search. The literature review did not identify any studies pertaining to intellectual capital reporting by the local government sector.

The literature review led to the development of the research objectives and research questions. The key research objectives are:

- To develop a disclosure index for assessing the extent and quality of intellectual capital disclosures in the annual reports of the New Zealand local government sector;
- To apply the index to the 2004/2005 annual reports of the local government sector in order to determine the level of current intellectual capital reporting; and
- To make recommendations about intellectual capital reporting by the New Zealand local government sector in light of the research findings.

The research questions were refined from the research objectives. The following questions were used to guide the research design, data collection process and data analysis:

1. What is meant by accountability in the New Zealand local government sector?
2. What intellectual capital information do stakeholders consider should be disclosed in the annual reports of local government?

3. Are some items more important than others?
4. Are the information needs of stakeholders being met?
5. How can the 'extent' of annual report disclosure be measured?
6. Should 'quality' of disclosure be assessed as well as 'extent' of disclosure? If so, how?

The research objectives and questions enabled the selection of the most appropriate research method. It was decided that a disclosure index based on the intellectual capital approach (Sveiby, 1997), and modelled on the indices developed by Hooks (2000) and Coy and Dixon (2004) would be the most appropriate. The disclosure index, entitled the Intellectual Capital Disclosure (ICD) index, was constructed in conjunction with a stakeholder panel which enabled the incorporation of stakeholder opinions into the index. This ensured the index measured annual report disclosures that were deemed important to stakeholders. The following section describes disclosure indices and their use as tool for determining disclosure levels in annual reports.

4.3.1.1 Content Analysis

This research uses content analysis to determine the level of intellectual capital disclosure in the 2004/2005 annual reports of the local government sector. Content analysis is a research technique that makes "replicable and valid inferences from data according to their context" (Krippendorff, 1980, p.21). It involves codifying both qualitative and quantitative information into predefined categories in order to derive patterns in the presentation and reporting of information (Guthrie *et al.*, 2004). Content analysis has been used extensively by researchers since the 1960s to explain differences in the amount of information disclosed in company annual reports (Guthrie *et al.*, 2004).

Content analysis of annual reports has been widely used, and held to be empirically valid in the social, ethical and environmental reporting research fields where such disclosures are usually of a voluntary nature (Gray, Kouchy & Lavers, 1995; Guthrie & Parker, 1990, Guthrie *et al.*, 2004). According to Guthrie *et al.* (2004) content analysis can be used to test whether the IC information needs of interest groups (stakeholders) are being effectively communicated with via the annual report. Current legislation and

accounting standards do not prescribe mandatory disclosure requirements for the *majority* of intellectual capital items Content analysis has been adopted by intellectual capital researchers as the preferred tool to gauge the extent of voluntary intellectual capital reporting and disclosure by corporations (Bozzolan *et al.*, 2003; Brennan, 2001; Guthrie & Petty, 2000; Guthrie *et al.*, 2004; Shareef & Davey, 2005; Wong & Gardner, 2005).

In order to ensure content analysis is effective, Guthrie *et al.* (2004) and Guthrie and Matthews (1985) stipulate the following criteria should be met:

1. The categories of classification must be clearly and operationally defined;
2. The classification into a particular category must be objective; the item clearly does or does not belong to a particular category;
3. The information needs to be able to be quantified;
4. A reliable coder is necessary to uphold consistency.

This research uses a disclosure index to categorise and classify the intellectual items into a suitable disclosure framework. The construction of the Intellectual Capital Disclosure (ICD) Index is discussed briefly in the next section and addresses points two and three above. The construction of the index is detailed in Chapter Five. The reliability of the analysis is upheld through the use of specific set of decision rules that provide guidance to the coder when classifying annual report items. Coding of the annual reports is discussed in more detail in Chapter Five.

Content analysis of annual reports is often combined with the use of disclosure indices which provide the framework against which items can be measured. Disclosure indices are useful as they provide a single-figure summary indicator of either the entire contents of reports of comparable organisations, or of particular aspects of interest covered by such reports, such as voluntary disclosures and environmental disclosures (Coy & Dixon, 2004).

The use of a formally constructed disclosure index modelled on the Public Accountability Index (PAI) model by Coy and Dixon (2004) and the index developed by Hooks (2000) is anticipated to reduce the subjectivity associated with the coding of data. Coy and Dixon (2004) do however, caution that disclosure indices are ephemeral

in nature and can measure annual reports only in terms of the standards and expectations of society when they are constructed. As a result, when changes occur in society's expectations and the issues of concern various members there are arguments for the modification of the disclosure index. It would follow that the disclosure index constructed to measure the extent of IC reporting by New Zealand local authorities is sector and period specific. As a result it may not be applicable to other jurisdictions or time frames. Nevertheless, it provides a useful tool to determine the current extent and quality of intellectual capital disclosures for a specific time period encompassing the 2004/2005 financial year.

4.3.1.2 Disclosure Indices

Cooke and Wallace (1989) note that financial disclosure is an abstract concept which cannot be measured directly. However, many authors have used disclosure indices as a proxy measuring tool to measure the levels of disclosure by organisations in annual reports. (See for example Botosan (1997), Busby (1973), Cerf (1961), Chow & Wong-Boren (1987), Coy & Dixon (2004), Craig & Diga (1998), Firer & Meth (1986), Firth (1978; 1979), Hooks, Coy & Davey (2002), Singhvi & Desai (1971), and Zarzeski (1996)).

A disclosure index is defined by Coy (1995 p. 121) as:

A qualitative-based instrument designed to measure a series of items, which when scores for the items are aggregated, gives a surrogate score indicative of the level of disclosure in the specific context for which the index was devised.

A disclosure index is constructed by selecting a number of items for disclosure. Researchers have generally adapted indices developed in previous research for their own purposes. The disclosure index items in this research were based on items identified by prior research on intellectual capital disclosure by corporate entities (Bozzolan *et al.*, 2003; Brennan, 2001; Guthrie & Petty, 2000; Petty & Guthrie, 2000; Williams, 2001). The construction of the disclosure index is discussed further in Chapter Five.

According to Hooks *et al.* (2004) and Guthrie *et al.* (2004), the main intention of disclosure indices has often been to measure the disclosure of voluntary items of

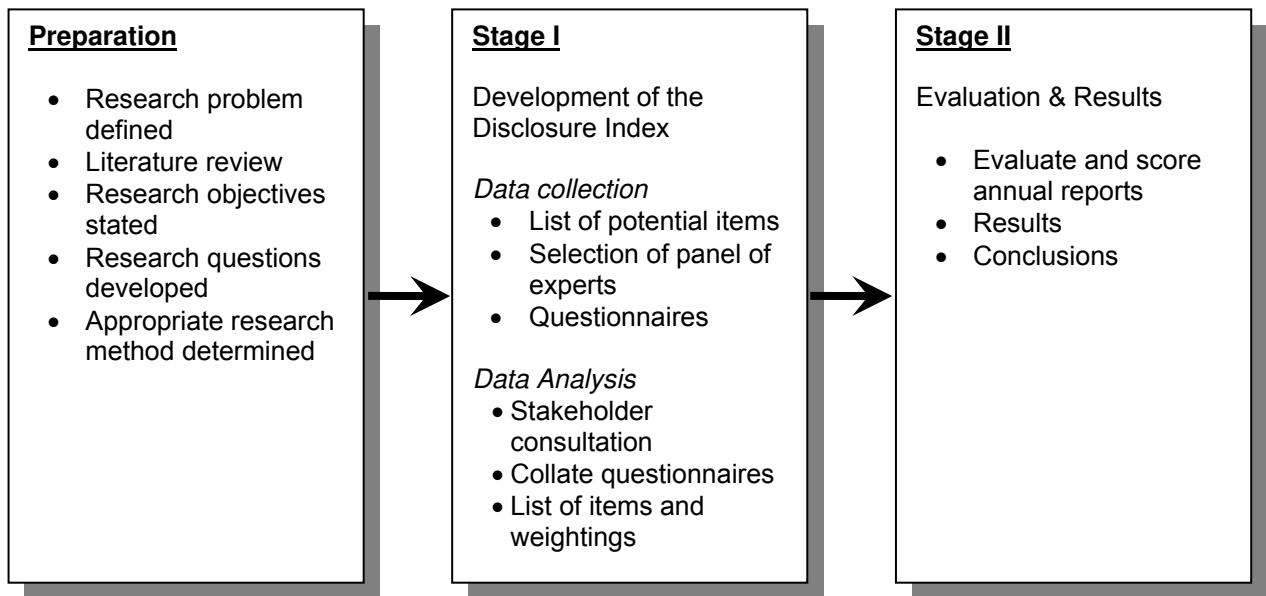
information in corporate annual reports. In most of these indices, the level of disclosure is measured using a dichotomous score i.e. whether the items in a pre-prepared checklist have been disclosed or not. However, according to Coy *et al.* (1994) and Coy and Dixon (2004), dichotomously scored indices suffer from a high degree of subjectivity. They suggest that to reduce subjectivity, the index items should be weighted so as to differentiate between disclosures of fundamental importance and those of an incidental nature.

The disclosure index in this research makes allowance for the relative importance of the disclosure items by using a system of weights (Hooks *et al.*, 2002). In research carried out by Buzby (1975), Singhvi and Desai (1971), and Malone, Fries and Jones (1993), index weightings were allocated by financial analysts on the basis of decision-usefulness where the emphasis is on providing information to investors to support economic decisions. In this research, weightings were allocated to each item by a purposefully selected stakeholder panel comprising of 14 members. The construction of the ICD index is considered in more detail in Chapter Five.

4.3.2 Research Design

Following the research preparation phase, the research was developed in two stages as outlined in Figure 4.1. Stage I consisted the preliminary steps in the development of the disclosure index, while Stage II was concerned with the evaluation and results of the coding of annual reports. This section provides a brief summary of the development of the disclosure index which is covered in more detail in Chapter Five.

Figure 4.1 Summary of research stages undertaken in this research



Source: Author.

4.3.2.1 Stage I - Development of the disclosure Index

Data collection

The first step in the construction of the disclosure index was to generate a preliminary list of intellectual capital items from the extant literature. The list of items was developed into an online questionnaire which was sent out to a specifically selected panel of subject-matter experts in the field of intellectual capital reporting or local government reporting. Each potential member of the stakeholder panel of experts was contacted by telephone to ask for their participation in the study. They were given a brief introduction to the research and an outline of their duties if they chose to participate. It was hoped that by telephoning the potential members first, a relatively high level of participation from members would be achieved.

A total of 14 members of the original list of experts expressed interest in participating in the research. They became members of the stakeholder panel, and were sent an email reiterating the main details of the study, their duties as participants and contact details for the researcher and supervisor in case they required further information. The email is presented in Appendix D. The email also included a link to an online web-based survey instrument. This method was based upon an instrument previously used by Lowe & Locke (2005). A difficulty identified with the use of email-type surveys is the

potentially low access to email in target populations (Vehovar & Manfreda, 2000). This was not perceived to be a problem in this research as all but one member identified in the original list of potential stakeholders had email addresses. The member who didn't was contacted by telephone and they provided the email address of their personal assistant.

The web-site for the survey was designed in conjunction with members of the Waikato Management School's Computer Support Services. There were a number of perceived advantages of using an electronic method of data collection. It was deemed to be quick and easy to use by most people, the data was collated automatically for ease of analysis, the method was inexpensive, and data collection was instant. This countered the typical problems of a postal survey which could be costly and time-consuming to administer. The web-based survey is presented in Appendix E. The stakeholder panel was asked to rate each item in the list for its importance of disclosure in the local government annual report, and add any other items they felt should also be disclosed. The aim was to determine the type of intellectual capital disclosure that was valuable and useful to local government stakeholders. A follow-up email (Appendix F) was sent to those members on the panel who hadn't responded within two weeks of sending the initial email containing the link to the survey instrument. All remaining members completed the online survey within two weeks of receiving the follow-up email.

Data Analysis

The second step of the development of the disclosure index was to collate all the completed surveys and analyse the stakeholder responses. A spreadsheet containing all the responses was prepared using Microsoft Excel and is presented in Appendix G. The mean score was used as the importance weighting allocated to each item in the final disclosure index. The data collection and analysis process resulted in the development of a draft index of disclosure items and relevant weightings for level of importance to be used in the final index.

4.3.2.2 Stage II - Evaluation & results

Stage II of the research involved scoring the annual reports. This was to be completed by one researcher for consistency. A detailed coding sheet and decision rules were

drawn up to assist the researcher in ensuring each report was scored consistently. Each sentence in each annual report was coded according to the coding sheet. Upon completion of the annual report all codes for a particular annual report were collated and transferred to the disclosure index to determine the overall intellectual capital disclosure score. More detail on this process is provided in Chapter Five.

Once the annual reports were scored against the disclosure index, the final annual report scores and individual intellectual capital category scores were analysed and summarised. The analysis had the following aims:

1. To compare the mean score obtained for each information item of the disclosure index with the level of importance of that item as identified by the mean weighting assigned by the stakeholder panel.
2. To report scores given to each intellectual capital category for each local government authority and the final score of the annual report as a whole.
3. To identify and report the strengths and weaknesses of highest scoring and lowest scoring annual reports.
4. To examine any differences between the territorial authorities, regional authorities and unitary authorities, as well as any differences in disclosure according to organisational size (measured by rates value, and size of the annual report).
5. To examine and discuss the above findings.

4.4 SUMMARY

This chapter presented the underlying methodology and method of this research. This research is grounded in the scientific approach but incorporates elements of the interpretive approach. It is underpinned by the structured and disciplined nature of the scientific approach, and makes extensive use of quantitative data. Simultaneously, there is the inclusion of qualitative information to enrich the quantitative findings. This ensures the methodology adopted allows the freedom to meet the research objectives and provide useful information to local government stakeholders regarding the level of intellectual capital reporting in local government annual reports.

The research process was structured, flowing logically from research objectives and questions to appropriate methods for data collection, analysis and evaluation. Data was collected through a web-based survey instrument which was sent to a panel of experts who formed the stakeholder panel. The survey responses were used to construct a disclosure index which was applied to the 2004/2005 annual reports of the local government sector in order to determine the extent and quality of intellectual capital disclosure. This disclosure index would also provide a framework through which future intellectual capital disclosures could be made by New Zealand local authorities.

Judgment was an integral part of the research process, particularly in the evaluation stage of the research. Clearly defined coding processes were described to analyse the intellectual capital disclosures in the annual reports, and to ensure that subjectivity and bias were minimised. Nevertheless, judgements are subjective by their nature and could not be completely avoided in this research. The selection of the disclosure items and the opinions of stakeholders reflected in the weightings of importance of each item were also subjective.

It is unlikely that another researcher would produce exactly the same disclosure index, but given the detailed and structured nature of the evaluation process replication of final scores would be possible. The credibility of the results will be proven by the ability of the findings to motivate change in the annual reporting of intellectual capital information by local government authorities.

The next chapter covers the development of the disclosure index in further detail.

CHAPTER FIVE

DEVELOPMENT OF THE IC DISCLOSURE INDEX

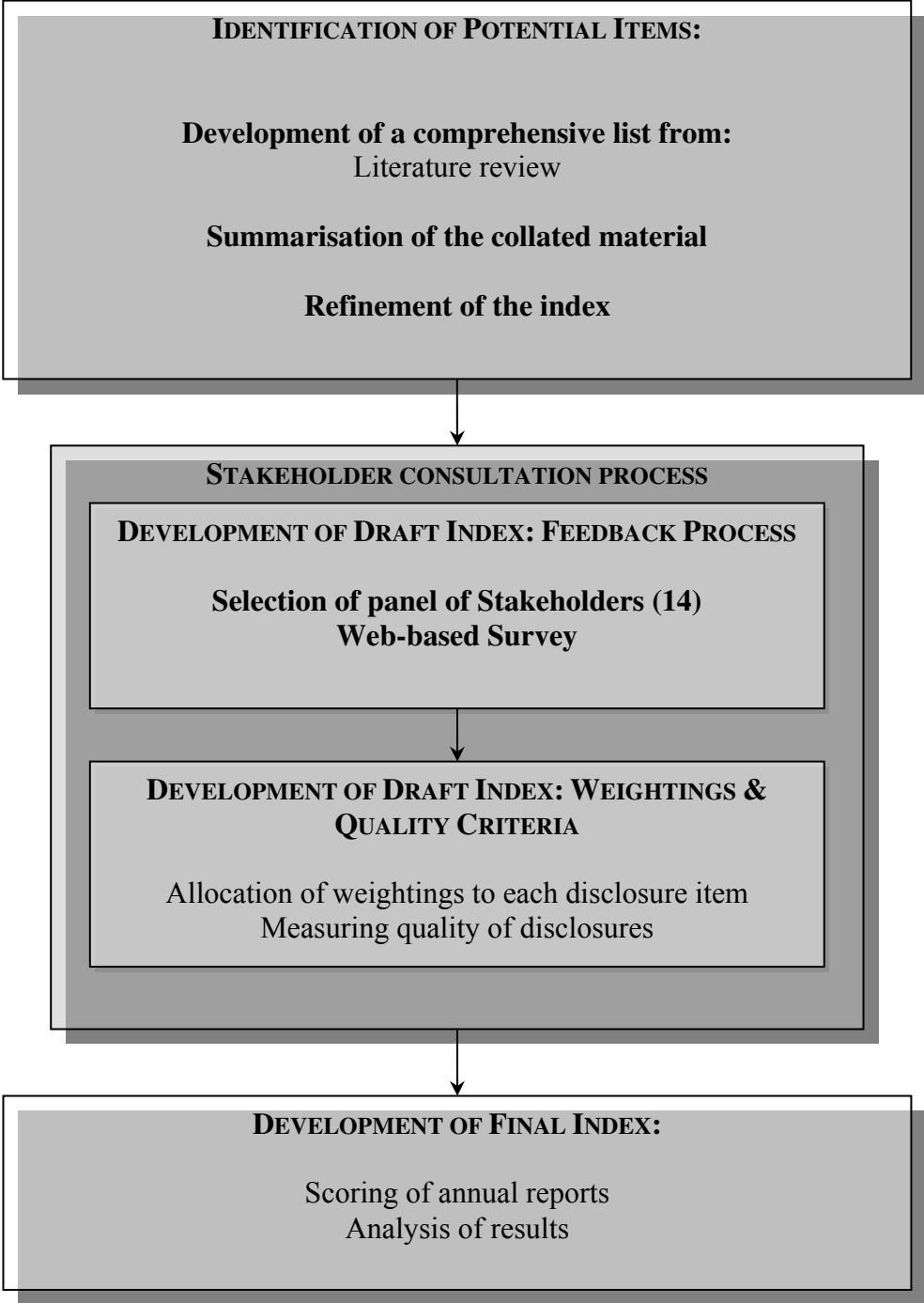
5.1 INTRODUCTION

The aim of the research was to determine the extent and quality of intellectual capital disclosures being made in the annual reports of local government authorities in New Zealand. Coy and Dixon (2004, p. 79) identify the use of disclosure indices as “an oft applied method in accounting research, particularly in the studies of annual reports”. Disclosure indices are extremely useful when assessing the extent of disclosure in annual reports, particularly for comparable organisations or of particular aspects of interest (Coy & Dixon, 2004). Disclosure indices are most commonly used in studies that focus on voluntary disclosures and environmental disclosures (Ahmed & Courits, 1999; Coy, Tower & Dixon, 1993; Coy & Dixon, 2004; Marston & Shrikes, 1991; Singleton & Globerman, 2002).

This research makes use of an Intellectual Capital Disclosure (ICD) index that has been constructed through a participatory stakeholder consultation exercise. This exercise involves a process of gathering stakeholder opinions on particular topics in order to construct a disclosure index that is relevant to the needs of stakeholders. This method has been used previously by Hooks (2000; 2002) in constructing a disclosure index to measure the extent and quality of disclosure in the annual reports of the New Zealand electricity industry. In the case of this research, stakeholder opinion was sought on intellectual capital disclosure by local governments. Opinions were then integrated into the disclosure index to ensure that what was being measured by the index was deemed important by stakeholders.

This chapter reviews the development of the ICD index. First, the potential items for the index that were identified from the literature are presented. Second, the consultative stakeholder process to allocate weightings to the items in the index is discussed, followed by the results of the exercise and the final index. The development process is summarised in Figure 5.1.

Figure 5.1 Development of the ICD index



Source: Adapted from Hooks (2000).

1.1 DEVELOPMENT OF THE ICD INDEX

The ICD index is designed to measure the extent and quality of annual report disclosure of intellectual capital by local government authorities in New Zealand. The literature provides a number of examples where intellectual capital disclosure was measured

through content analysis of the annual reports of corporate organisations (Bozzolan, Favotto & Ricceri, 2003; Brennan, 2001; Guthrie & Petty, 2000; Petty & Guthrie, 2000; Williams, 2001). Previous studies that had used disclosure indices (Williams, 2001; Firer & Williams; 2005) to measure IC disclosure were able to adopt or refine existing indices; however none of the studies identified in the literature used a disclosure index as the primary tool for measuring intellectual capital disclosure in the *public* sector. This required a new index to be created specifically for this research. It was decided to apply a disclosure index constructed according to the stakeholder consultation principles espoused by Coy and Dixon (2004). The extant disclosure studies provided a starting point for the construction of the ICD index.

5.1.1 Identification of Potential Items

A thorough review of the intellectual capital literature yielded a preliminary list of items which provided the foundation for the ICD index. This list, presented in Table 5.1, was developed from previous content analysis studies of intellectual capital disclosure by corporate organisations (Bozzolan *et al.*, 2003; Brennan, 2001; Guthrie & Petty, 2000; Wong & Gardner, 2005).

Table 5.1 Preliminary list of intellectual capital items

Human Capital	External Capital	Internal Capital
1. Know how	1. Brands	1. Intellectual property
2. Education	2. Customers (names, purchase history)	2. Patents
3. Vocational qualification	3. Customer loyalty	3. Copyrights
4. Work-related knowledge	4. Customer Satisfaction	4. Trademarks
5. Work-related competencies	5. Customer penetration/depth	5. Infrastructure assets
6. Cultural diversity	6. Company names	6. Corporate culture
7. Entrepreneurial spirit	7. Distribution channels	7. Management philosophy
8. Employee Career development	8. Business collaborations (joint ventures)	8. Information systems
9. Employee productivity	9. Licensing agreements	9. Networking systems
10. Employee benefits/compensation	10. Franchising agreements	10. Research projects
11. Employee involvement in the community	11. Quality standards	11. Financial relations
12. Employee numbers		
13. Employee turnover		
14. Employee safety		
15. Equal Employment Opportunities		
16. Executive compensation plan		
17. Training programs		
18. Union activity		

The preliminary list of items is based on intellectual capital items of corporate entities. The list was modified so that the indicators would be more applicable to local governments. References to ‘customers’ were changed to ‘ratepayers’ as these are the primary stakeholders in local government. Some elements were removed from the list altogether as they were deemed to be not applicable to local governments. Items removed from the list were:

- Franchising agreements;
- Customer loyalty;
- Company names; and
- Infrastructure assets.

Although infrastructure assets (such as roads and water networks) form a substantial part of the assets of local government, it was considered that disclosures concerning these items would be captured under item ‘distribution channels’. Therefore, it was decided to remove ‘infrastructure assets’ from the list to avoid repetition in coding.

The following items from the preliminary list were modified:

- Customers (names, purchase history) was changed to ‘ratepayers database’.
- Customer penetration and depth was changed to ‘ratepayer demographics’.
- Customer satisfaction was modified to ‘ratepayer satisfaction’. This category was further defined as ratepayer and/or residents’ satisfaction with municipal services e.g. library, parks and recreation facilities, animal control, resource management consent processes, and noise control.
- ‘Backlog work’ was added to the list under the external capital category. This refers to whether spending targets and completion dates were met for projects undertaken by local governments, or whether the work was carried over to the next financial year.
- Patents, copyrights and trademarks were combined under the heading ‘intellectual property’.
- In order to simplify the human capital section of the list, a number of indicators relating to employees were condensed under the heading of ‘education programs’ and ‘know-how’.

A brief description was added to all items on the list to provide further explanation of the terms. This was for the benefit of the stakeholder panel, to ensure that all members of the panel had a comparable understanding of the items in the list. The revised list is shown in Table 5.2.

Table 5.2 Modified list of intellectual capital items

Item	Description
Internal Capital	
1. Intellectual property	Detail of patents, copyrights, trademarks held by local authority
2. Management philosophy	As evidenced by vision/mission statements
3. Management processes	Relating to processes within local authority
4. Corporate culture/values	Comprises the attitudes, experiences, beliefs and values of the local authority
5. Information/networking systems	Details on the development, use, application and influence of information systems
6. Financial relations	Relationships between the local authority and finance providers
7. Promotional tools	Advertising the local authority does to promote its services or its region
External Capital	
8. Brands	Details of brands associated with the local authority
9. Ratepayers database	Database of all ratepayers
10. Ratepayer demographics	Information relating to ratepayers
11. Ratepayer satisfaction	Indicators of ratepayer satisfaction
12. Backlog work	Relating to unfinished/un-started projects
13. Distribution channels	Information on how local authority services/products reach users
14. Business collaborations (joint ventures)	Involving the local authority
15. Licensing agreements	Held by the local authority
16. Quality standards	Adherence to quality assurance programs/standards
Human Capital	
17. Know how	Employee knowledge
18. Employee education programs	Education/ongoing programmes initiated by local authority
19. Vocational qualification of employees	Non academic qualifications held by employees
20. Work-related knowledge of employees	Gained 'on the job' or as part of ongoing training
21. Cultural diversity	Demographic information of employees
22. Entrepreneurial innovativeness	Focusing on cost-minimisation rather than profit-maximisation
23. Equal Employment Opportunities	Details of EEO programs/initiatives
24. Executive compensation plan	Details of executive remuneration
25. Training programs	Undertaken/provided by the local authority
26. Union activity	Details of unions representing employees

5.1.2 Stakeholder Consultation Process

The stakeholder consultation process involves gathering stakeholder opinions on intellectual capital reporting by local governments. In other studies using disclosure indices, the items were weighted for importance by one user group, usually financial analysts and investors, on the basis that this group represents experienced users of financial reports (Hooks, 2000; 2002). As this research does not focus on information needs of investors, but rather the accountability discharge through annual reports, consultation with a wider group of stakeholders was deemed necessary in the construction of this index.

There were four main steps undertaken as part of the stakeholder consultation process. These were:

1. Revisiting the problem definition;
2. Panel selection and determination of the panel size;
3. Conducting the stakeholder consultation exercise; and
4. Results of the stakeholder consultation exercise.

These steps are based on the disclosure index construction process outlined by Coy and Dixon (2004). Each of these steps will be explained and discussed in turn below.

5.1.2.1 Problem Definition

This was defined in Chapter 1. This research has three specific objectives:

1. To determine the extent of intellectual capital reporting in the New Zealand public sector;
2. To apply a disclosure index to the annual reports of the local government sector in order to identify the extent and quality of information disclosed;
3. To make recommendations about intellectual capital reporting by the New Zealand local government sector in the light of the investigative findings.

With these objectives in mind, the next task was to select stakeholders in order to gather opinions on the intellectual capital items that should be included in the disclosure index.

5.1.2.2 Panel Selection & Determination of Size

Annual reports are often used by various parties with opposed interests and as such, the purpose of general purpose annual reports is to satisfy the multiple information needs of various parties (Gray, Meek & Roberts, 1995; Guthrie & Parker, 1989, 1990; Neu, Warsame & Pedwell, 1998; Roberts, 1992; Steccolini, 2004). A selection of a wide range of stakeholders of local government was deemed necessary in order to capture opinions on the range of information needs from all the stakeholders.

Martino (1972) suggests that a panel of 10-30 carefully selected subject-matter experts (SMEs) should be used in research seeking to gain stakeholder opinions on particular matters, depending on the characteristics of the population (see also Loo, 2002; Rowe & Wright, 1999). Dinius and Rogow (1988) noted that methodologies such as expert judgement are acceptable in the inexact sciences, and that panellists are selected on the basis of their expert knowledge (Gordon, 1994). In this research, the population from which members of the panel could be selected would be limited by the available SMEs in the field of intellectual capital reporting in the local government sector, as this is a recently developed and fairly specialist field. An initial list of 30 potential stakeholder panel members were selected based on their involvement with local government, their knowledge of the local government sector, their personal experiences or by belonging to the local government stakeholder group (for a list of stakeholders with an interest in local government activities, see Table 3.8 on page 59). These stakeholders were selected from four main stakeholder groups as show in Table 5.3.

Table 5.3 Local government stakeholders

Stakeholder Group	Members of group
Internal Citizens	Staff of local Councils and local government such as CEOs and CFOs
External Citizens	Ratepayers associations, affiliated groups, academics
Oversight Agents	Auditors, MPs, Ministers
Report Preparers	Chartered Accountancy firms

Source: Author.

Members of the stakeholder panel were contacted by telephone and then by email asking them for their participation in this research. The letter of invitation sent via email is shown in Appendix D. Those stakeholders that agreed to participate could click on a link contained in the letter of invitation which would open an online questionnaire

that aimed to gather their opinions on items of disclosure. A follow up email was sent two weeks later as a reminder to those members of the panel who had yet to complete the survey.

The final stakeholder panel consisted of 14 members shown in Figure 5.2 below. The relatively low number of stakeholders willing to become panellists was a limitation of this study. However, it was recognised that there may be a relatively small pool of SMEs on intellectual capital reporting by local authorities in New Zealand from which to draw participants from. According to the guidelines drawn by Martino (1972), 14 members falls within the acceptable range for a stakeholder panel.

Figure 5.2 The stakeholder panel



Partner: Auditing Firm, 30 yrs experience
Manager Human Capital: Professional Accounting Firm, 20 years experience
Associate Director: Professional Accounting Firm, 28 yrs experience
Chief Financial Officer: Local government authority, 30 yrs experience
Professor: University, 35 yrs experience
Financial Controller: Local government authority, 11 yrs experience
Accountant: Professional Accounting Firm, 12 yrs experience
Finance: Local Government Authority, 1 yrs experience
Chief Financial Officer: Local Government Authority, 30 yrs experience
Manager: Stakeholder/watchdog group
Advisor: Local Government Authority, 2 yrs experience
Systems Analyst: Local Government Authority, 9 yrs experience
Consultant Solicitor: Legal Firm, 5 yrs experience
Senior Policy Analyst: Local Government Authority, 2 yrs experience

5.1.2.3 Conducting the Stakeholder Consultation Exercise

The stakeholder panel was asked to review the list of items in the disclosure index via an online questionnaire. Appendix D contains the survey instrument. The panel was asked for their opinion on 26 intellectual capital annual report items, divided into three categories. For each item they were asked to decide whether the item should or should

not be disclosed. For items that should be disclosed, the stakeholder panel were asked to rank the item's importance based on the 'Likert-type' rating scale shown in Table 5.4.

Table 5.4 'Likert-type' importance scale

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

A five point scale was chosen based on the extent of its use in previous research. According to Hooks (2000) most of the previous research using disclosure indices used a five point scale either: one to five (Adhikari and Tondkar, 1992; Baker and Haslem, 1973; Firth, 1979; McNally, Eng & Hasseldine, 1982; Firer and Meth, 1986; Tong, Kidam & Wah, 1990) or zero to four (Barrett, 1977; Benjamin and Stanga, 1977; Buzby, 1975).

The five point scale was found to be easy to comprehend and quick to use. The relative importance of each item in the disclosure index was based on the weightings assigned to each item by the stakeholder panel. In addition, there was space provided on the questionnaire for members of the panel to add any intellectual capital items they felt should be included in the annual reports. The panel was also asked to assign a weighing to any additional items they may have included in the list. Not all disclosure items are of equal importance, so by assigning weightings to each item in the disclosure index, more emphasis is placed on those items that are deemed important by stakeholders. This ensures that the final index measures those items that are important to stakeholders.

5.1.2.4 Results of the Stakeholder Consultation Exercise

The weighting for a particular disclosure item was calculated by summing the individual ratings assigned by the stakeholder panel then dividing the total by 14 to obtain a mean score. The higher the score of a particular item, the greater the importance that the item should be disclosed in the annual report. The mean was used

to summarise the scores as it gives equal weight to each of the responses. A table showing the weightings given by individual panel members is included in Appendix G. The spread of weightings in the table in Appendix G reflects the diverse nature of the stakeholder panel, the different focus of each member and the relative number of years work experience. No additional intellectual capital disclosure items were added by any of the stakeholder panel in any of the three categories.

The three most highly rated items on average were ‘financial relations’ under the internal capital category and ‘ratepayer satisfaction’ and ‘joint ventures/business collaborations’ under the external capital category. The internal capital category was the most highly rated category, ahead of external capital, with human capital being considered least important to disclose by the panel on average. The high level of importance placed on these items may be due to the demographics of the stakeholder panel. A large proportion of the panel were either from local authorities or professional accounting firms. Panel members from accounting firms may place greater emphasis on financial relationship disclosures which are captured under ‘financial relations’ and ‘joint venture/business collaborations’. The emphasis on ‘ratepayer satisfaction’ may be due to the members of the local authorities recognising the importance of meeting ratepayer demands.

The remainder of this section presents the results of the stakeholder consultation exercise for each intellectual capital disclosure category (internal, external and human capital). Tables 5.6-5.7 display the frequency of weightings given by panel members for each item in the exercise and the mean of those weightings.

Each item was weighted for importance on a scale of 0-4:

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

The **frequency** columns show the number of stakeholder panellists who gave each of the ratings. There were 14 panellists in total which gives the **arithmetic mean** as (the sum of all ratings x frequencies)/14. The arithmetic mean (or mean) is the most

commonly used measure of central tendency. The **median**, another measure of central tendency, is the number that divides the population (panellist's ratings) in half i.e. the midpoint of the data set. The **mode** is the most frequently occurring variable. In this case the mode is the score that was selected by the greatest number of panellists i.e. the most common score. The mean, median and mode are measures of central tendency and when they are compared to each other it provides an indication of how central or how spread the panellist's responses are. The closer together the mean, median and mode are, the more the panellists are in agreement. A difference between the mean, median and mode often indicates skewed distributions (Field, 2000). The **adjusted mean** was calculated by taking the results from the stakeholders that thought the items should be disclosed (i.e. summing all scores from 1-4, discarding zero scores from the analysis and dividing the sum by the number of panellists not allocating zero scores). This would allow the average scores for items to be determined, assuming that the items should be disclosed in the annual report.

The adjusted mean was considered important because it represents the average of all the stakeholders that thought the item *should* be disclosed. The intellectual capital (IC) literature inherently regards IC disclosure as being valuable, provided the costs of providing additional information do not outweigh the benefits (Guthrie, Petty & Johanson, 2001; Ho & Wong, 1999). The view that IC disclosure is valuable is adopted by this research.

Internal Capital

The stakeholder panel's results for the internal capital category are presented in Table 5.5 on the next page.

Table 5.5 Stakeholder panel responses for internal capital

Disclosure Items		Frequency					Mean	Median	Mode	Adjusted Mean
		0	1	2	3	4				
Intellectual property	Detail of patents, copyrights, trademarks held by local authority	1	3	2	7	1	2.3	3	3	2.5
Management philosophy	As evidenced by vision/mission statements	0	2	3	6	3	2.7	3	3	2.7
Management processes	Relating to processes within local authority	1	2	7	2	2	2.1	2	2	2.3
Corporate culture/ values	Comprises the attitudes, experiences, beliefs and values of the local authority	1	2	3	5	3	2.5	3	3	2.7
Information/networking systems	Details on the development, use, application and influence of information systems	2	5	6	0	1	1.5	1.5	2	1.8
Financial relations	Relationships between the local authority and finance providers	0	0	3	8	3	3.0	3	3	3.0
Promotional tools	Advertising the local authority does to promote its services or its region	0	8	4	1	1	1.6	1	1	1.6

The internal capital category was rated as the most important of the three intellectual capital categories for disclosure by the stakeholder panel. The most highly rated item was ‘financial relations’ which was rated as very important by 57% of the panel. Of the remaining panel, 21% thought it was of extreme importance, with the final 21% thinking it was of intermediate importance. This high score is interesting as it suggests the importance of transparent disclosures of financial relations between local authorities and other groups to their stakeholders. ‘Management philosophy’ was then next highest scoring item with an average score of 2.7. Sixty-four percent of the panel thought it was very important or essential to disclose this item. ‘Intellectual property’ and ‘corporate culture/values’ were also considered to be of at least intermediate importance. ‘Information/networking systems’ and ‘promotional tools’ were considered to be the least important in this group with average scores of 1.5 and 1.6 respectively. Fifty-seven percent of the panel thought information about promotional tools should be disclosed, but thought that it was only of minor importance.

The median scores show the ‘average’ person’s response, which in this case, was very close to the mean. This indicates a relatively high level of agreement between members of the panel. Similarly, the mode corresponds to both the median and the mean, indicating a consensus on the importance of disclosure of each item.

Interestingly, those items that were allocated a zero score were all scored by stakeholder panellist number nine, a CFO of a local government authority (see Appendix G). This panellist thought that ‘intellectual property’, ‘management processes’, ‘corporate culture/values’ and ‘information/networking systems’ should not be disclosed at all.

When the adjusted mean scores are compared to the mean scores, some items have a slightly higher adjusted mean score. However, the two sets of scores are similar. The adjusted mean scores for ‘intellectual property’, ‘management processes’, ‘corporate culture/values’, and information/networking systems’ are all slightly above their mean scores. The difference in scores reflects that some stakeholders thought that these four items should not be disclosed. However for the most part, there is consensus between members of the stakeholder panel on the importance of disclosure of each item.

External Capital

The stakeholder panel’s results for the external capital category are presented in Table 5.6.

Table 5.6 Stakeholder panel responses for external capital

Disclosure Items		Frequency					Mean	Median	Mode	Adjusted Mean
		0	1	2	3	4				
Brands	Details of brands associated with the local authority	4	2	3	4	1	1.7	2	0, 3	2.4
Ratepayer database	Database of all ratepayers	8	1	3	2	0	0.9	0	0	2.2
Ratepayer demographics	Information relating to ratepayers	1	2	2	6	3	2.6	3	3	2.8
Ratepayer satisfaction	Indicators of ratepayer satisfaction	0	1	2	3	8	3.3	4	4	3.3
Backlog work	Relating to unfinished/un-started projects	0	3	3	6	2	2.5	3	3	2.5
Distribution channels	Information on how local authority services/products reach users	2	5	2	4	1	1.8	2	1	2.1
Joint ventures/ collaborations	Involving the local authority	0	1	2	5	6	3.1	3	4	3.1
Licensing agreements	Held by the local authority	1	5	4	3	1	1.9	2	1	2.0
Quality standards	Adherence to quality assurance programs/standards	0	3	4	3	4	2.6	3	2, 4	2.6

‘Ratepayer satisfaction’ was considered to be the most important aspect of external capital with an average score of 3.3. Fifty seven percent of the panel considered this item to be essential for disclosure. This is not surprising, as local authorities owe a high level of accountability to their ratepayers. Panellist number 2, Manager of Human Capital at a Professional Accounting Firm, thought ‘ratepayer satisfaction’ should not be disclosed at all. ‘Joint ventures/ business collaborations (3.1), ‘ratepayer demographics’ (2.6), and ‘quality standards’ (2.6) also scored between the very important or essential to disclose categories.

‘Ratepayer database’ was not though to be particularly important by the majority of panellists (57%), however this may have been due to misunderstanding the question. The question meant the disclosure of *the existence* of a ratepayer database, not the disclosure of the actual database itself. This was a limitation of the survey instrument.

Again, the mean and the median scores are similar, indicating a low spread of rankings. This suggests a relatively high level of agreement between panellist’s scores. ‘Brands’ and ‘quality standards’ were bi-modal, which indicated an equal number of panellists allocated different scores. ‘Brands’ achieved modes of zero and three which is interesting as the two scores are very different. This can be explained by the relatively high level of disagreement in this category as seen by the spread of scores that were allocated. ‘Quality standards’ achieved modes of two and four. There is essentially the same number of stakeholders for each score which explains why the median and the mean are different. Focusing on the mean score of 2.6 masks the range of scores that were actually attributed by the stakeholder panel.

When the adjusted mean scores of each item are compared to the mean scores, some items have a slightly higher adjusted mean score. In particular ‘ratepayer database’ has an adjusted mean figure (2.2) that is considerably higher than the mean score (0.9). This reflects the large proportion of the stakeholder panel (8 of 14) that did not think this item should be disclosed. The difference in the mean and adjusted mean for ‘brands’ was also fairly large due to four of the panel indicating that this item should not be disclosed. There were minor differences between the two sets of scores for ‘ratepayer demographics’, ‘distribution channels’, and ‘licensing agreements’. However, for the

most part the two sets of scores were similar which indicates general consensus between members of the stakeholder panel that the items should be disclosed.

Human Capital

The stakeholder panel's results for the human capital category are presented in Table 5.7 below:

Table 5.7 Stakeholder panel responses for human capital

Disclosure Items		Frequency					Mean	Median	Mode	Adjusted Mean
		0	1	2	3	4				
Know-how	Employee knowledge	5	3	5	0	1	1.2	1	2	1.9
Education programs	Education/ongoing programmes initiated by local authority	4	2	7	0	1	1.4	2	2	2.0
Vocational qualifications	Non academic qualifications held by employees	4	5	4	0	1	1.2	1	1	1.7
Work-related knowledge	Gained 'on the job' or as part of ongoing training	4	4	5	0	1	1.3	1	2	1.8
Cultural diversity	Demographic information of employees	2	2	9	1	0	1.6	2	2	1.9
Entrepreneurial Innovativeness	Focusing on cost-minimisation rather than profit-maximisation	2	3	5	3	4	2.7	2	2	3.2
Equal Employment Opportunities	Details of EEO programs/initiatives	0	4	7	3	0	1.9	2	2	1.9
Executive compensation plans	Details of executive remuneration	0	2	2	6	4	2.9	3	3	2.9
Training programs	Undertaken/provided by the local authority	4	4	4	1	1	1.4	1	0, 1, 2	1.9
Union activity	Details of unions representing employees	5	2	6	0	1	1.3	1.5	2	2.0

The human capital category was considered to be least important for disclosure by the panel. The highest scoring item was 'executive compensation plans' with a score of 2.9 which was considered to be very important or essential to disclose by 71% of the panel. All the panellists thought that 'executive compensation plans' should be disclosed. As from 1 January 2007 disclosure of executive and director's remuneration will become compulsory under NZ IAS 1 *Presentation of Financial Statements*.

The mean, median and mode scores in the human capital category were similar, indicating a low spread of rankings. This reflects the relatively high level of agreement between panellist's scores. 'Training Programs' was an unusual item in that it had 3

modes. Twenty-eight per cent of the panellists thought it should not be disclosed, 28% thought it should be but was of minor importance, and 28% thought it was of intermediate importance for disclosure. This lack of agreement led to a low mean of 1.4, however, this corresponded reasonably well to the median of 1.

Panellists number seven (Accountant, Professional Accounting Firm), eight (Finance, Local Authority), ten (Manager, Stakeholder/watchdog group), and 13 (Consultant Solicitor, Legal Firm) all gave relatively low scores to all items in the human capital category (see Appendix G). The Manager of Human Capital (panellist number two) didn't rate most items in this category as being very important to disclose, giving an average score of only 1.4.

When the adjusted mean scores of each item were compared to the mean scores, most items had a slightly higher adjusted mean score. The only items that the panel unanimously agreed on for disclosure were 'equal employment opportunities' and 'executive compensation plans'. For all the other items in this category the panel was split between two-thirds specifying that the items should be disclosed, with the remaining one-third specifying that the items should not be disclosed. This difference in opinions led to the differences between the mean and adjusted mean scores. However, for all items, the majority of stakeholders thought the items should be disclosed.

5.1.2.5 Issues Raised by the Stakeholder Panel

There were a number of interesting issues raised by the stakeholder panel during the consultation exercise. One member of the stakeholder panel summed up the reporting requirements of local government succinctly with the following quote:

The Local Government Act 2002 focus for external reporting by local authorities is on accountability and leadership based on the local authorities identifying with their communities what outcomes they want to achieve and then determining how the local authorities are going to contribute to the achievement of these outcomes. As part of the process, local authorities are to evaluate proposals in terms of their social, economic, environmental and cultural benefits. The requirements included in the Act regarding what has to be included in the major planning and reporting documents (Long Term Council Community Plans, Annual Plans and Annual Reports) are more extensive than those required for commercial organisations of a similar size (Director, Professional Accounting Firm).

Another stakeholder panellist, a partner in an auditing firm agreed, and suggested that through the Long Term Council Community Plan (LTCCP) and consultation processes prescribed by local government legislation, much of the IC disclosures proposed in the index “will be disclosed where it is significant to the community or required by law” (Partner, Auditing Firm). They stated that the “rest [of the IC disclosure items] to me appears reasonably academic whether it is or isn’t [disclosed]” (Partner, Auditing Firm).

The usefulness to annual report users and stakeholders of intellectual capital disclosures was questioned. One of the stakeholder panel members stated that:

Unless the information disclosures on intellectual capital assist the readers of the report with measuring how the local authorities have performed or are likely to perform in the critical areas of service provision then the costs [of reporting] are likely to exceed the benefits (Associate Director, Professional Accounting Firm).

They also suggested that adding IC disclosures to the annual report could lead to information overload:

The quantity and complexity of the information that ratepayers and citizens receive is large and high so that very few people read it, even less understand it and only a miniscule proportion of the population would read most of it and that includes analysts (Associate Director, Professional Accounting Firm).

A panel member offered their support to the idea of incorporating intellectual capital disclosures into the annual report but qualified their opinion by suggesting that it would be very difficult to objectively value many of the disclosure items in the index. They suggested if:

External independent valuation of issues [is] possible... [it] would seem to add credibility to disclosures (Professor, University).

The responses of the stakeholder panel to the research offered some valuable insights on the issue of whether local governments should disclose intellectual capital. This direct feedback contributed to a deeper understanding of the complexity and limitations of including intellectual capital disclosures in the annual reports of local governments. The next section presents the draft index and weightings assigned by the stakeholder panel.

5.1.3 Draft Disclosure Index and Weightings

The draft disclosure index is presented in Table 5.8 on the next page.

The final index shows that overall, 9 of the 26 intellectual capital disclosure items are considered to be very important for disclosure, 10 items are considered of intermediate importance, and 7 items we considered to be only minor importance. No items were considered by the stakeholder panel to be essential for disclosure in the annual reports of the local government sector.

Table 5.8 Draft ICD index and weightings

1.0	Internal Capital		Weighting	Importance
1.1	Intellectual property	Detail of patents, copyrights, trademarks held by local authority	2.3	Intermediate
1.2	Management philosophy	As evidenced by vision/mission statements	2.7	Very
1.3	Management processes	Relating to processes within local authority	2.1	Intermediate
1.4	Corporate culture/values	Comprises the attitudes, experiences, beliefs and values of the local authority	2.5	Intermediate
1.5	Information/networking systems	Details on the development, use, application and influence of information systems	1.5	Intermediate
1.6	Financial relations	Relationships between the local authority and finance providers	3.0	Very
1.7	Promotional tools	Advertising the local authority does to promote its services or its region	1.6	Intermediate
2.0	External Capital		Weighting	Importance
2.1	Brands	Details of brands associated with the local authority	1.7	Intermediate
2.2	Ratepayer database	Database of all ratepayers	0.9	Minor
2.3	Ratepayer demographics	Information relating to ratepayers	2.6	Very
2.4	Ratepayer satisfaction	Indicators of ratepayer satisfaction	3.3	Very
2.5	Backlog work	Relating to unfinished/un-started projects	2.5	Very
2.6	Distribution channels	Information on how local authority services/products reach users	1.8	Intermediate
2.7	Joint ventures/collaborations	Involving the local authority	3.1	Very t
2.8	Licensing agreements	Held by the local authority	1.9	Intermediate
2.9	Quality standards	Adherence to quality assurance programs/standards	2.6	Very
3.0	Human Capital		Weighting	Importance
3.1	Know-how	Employee knowledge	1.2	Minor
3.2	Education programs	Education/ongoing programmes initiated by local authority	1.4	Minor
3.3	Vocational qualifications	Non academic qualifications held by employees	1.2	Minor
3.4	Work-related knowledge	Gained 'on the job' or as part of ongoing training	1.3	Minor
3.5	Cultural diversity	Demographic information of employees	1.6	Intermediate
3.6	Entrepreneurial innovativeness	Focusing on cost-minimisation rather than profit-maximisation	2.7	Very
3.7	Equal Employment Opportunities	Details of EEO programs/initiatives	1.9	Intermediate
3.8	Executive compensation plans	Details of executive remuneration	2.9	Very
3.9	Training programs	Undertaken/provided by the local authority	1.4	Minor
3.10	Union activity	Details of unions representing employees	1.3	Minor

5.1.4 Quality Criteria

Once the index items and weightings were finalised, a further dimension was added to the instrument – a measure for assessing the quality of disclosure. The term ‘quality’ of disclosure has been used previously by other researchers in content analysis studies and has been ascribed various meanings. Singhvi & Desai (1971) refer to quality as the completeness, accuracy and reliability of information. Imhoff (1992) focuses on quality as referring to the completeness of information, or full disclosure. Wallace (1988) and Adhikari & Tondkar (1992) describe quality as ‘intensity’ whilst Wallace, Naser & Mora (1994) denote quality as ‘comprehensiveness’. In order for reported items to be considered as ‘comprehensive’ it must “provide the reader with a sense that no important aspect has been left undisclosed” (Wallace & Naser, 1995, p.327).

In previous studies on intellectual capital disclosure, some researchers have incorporated aspects of ‘quality of disclosure’ into their research. Guthrie, Petty, Ferrier & Wells (1999) scored disclosures according to a scale of zero to three, with three being the highest score for monetary disclosure, a score of two for numerical disclosure, a score of one for disclosure in narrative form, and a score of zero for non-disclosure. Similar scales have been used in intellectual capital disclosure studies (Bozzolan, Favotto & Ricceri, 2003) and other annual report disclosure studies (see for example Cormier & Magnan, 1999; Giroux, 1989; Walden & Schwartz, 1997; Wiseman, 1982). However, this method has been criticised by some researchers on that basis that a number is not necessarily worth more than a comment (Marston & Shrivies, 1991). This is especially true for intellectual capital disclosure which is typically disclosed in narrative form. Despite the use of a zero to three scale by Guthrie *et al.* (1999), they found that intellectual capital items were nearly always reported in discursive form. Brennan (2001) cited Guthrie *et al.* (1999) as justification for applying a dichotomous 0:1 scale to their research into IC disclosure by Irish listed companies.

Firer & Williams (2002) maintain there is no theoretical justification for the use of either a dichotomous 0:1 scale, or a pre-determined rating criterion that scores each disclosure item based on the type and nature of information reported. Further, Botosan (1997) maintains that disclosure quality, though important, is difficult to assess.

Nevertheless, as Hooks (2000 p.154) states, “unless quality is assessed, it is difficult to distinguish between poor and excellent disclosures”.

In this research, it was decided to incorporate quality criteria into the disclosure index as it was felt that the importance of measuring the quality of disclosure outweighed the difficulty of doing so. A six-point scale modified from Shareef (2003) and Firer & Williams (2005) was used in this research. The scale is presented in Table 5.9.

Table 5.9 Quality criteria for scoring disclosure

5	Quantitative/Monetary and Descriptive	The disclosure item is clearly defined in monetary or actual physical quantities and descriptive statements are made
4	Quantitative/Monetary	The disclosure item is clearly defined in monetary or actual physical quantities
3	Descriptive	The disclosure item was discussed showing clearly its impact on the local authority or its policies
2	Obscure	The disclosure item was discussed in limited references or value comments whilst discussing other topics and themes
1	Immaterial	The local authority states that the disclosure item is immaterial to the financial well-being and results of the local authority
0	Non-disclosure	The disclosure item does not appear in the annual report.

Source: Adapted from Shareef (2003); Firer & Williams (2005)

Some items in the disclosure index are of a descriptive nature and assigning quantitative or monetary value for those items was not reasonable. For example, ‘corporate culture’ and ‘management philosophy’ are items that are very difficult to quantify and indeed it would be nonsensical to try and do so. For these items, a maximum score of three was allocated according to the criteria presented in Table 5.9 above. Items that are allocated a maximum quality score of three are: 1.1 ‘intellectual property’, 1.2 ‘management philosophy’, 1.3 ‘management processes’, 1.4 ‘corporate culture/values’, 3.4 ‘work-related knowledge’, and 3.6 ‘entrepreneurial innovativeness’ (these items are *italicised* in Table 5.10 on the next page).

5.1.5 Final Instrument: The ICD Index

The final disclosure index consists of 26 items divided into three main categories: internal capital, external capital and human capital. The resulting index, weightings and maximum scores for each item is shown in Table 5.10.

Table 5.10 Final ICD index items and weightings

1.0	Internal Capital		Weighting	Maximum Score
1.1	<i>Intellectual property</i>	Detail of patents, copyrights, trademarks held by local authority	2.3	3
1.2	<i>Management philosophy</i>	As evidenced by vision/mission statements	2.7	3
1.3	Management processes	Relating to processes within local authority	2.1	3
1.4	<i>Corporate culture/values</i>	Comprises the attitudes, experiences, beliefs and values of the local authority	2.5	3
1.5	Information/networking systems	Details on the development, use, application and influence of information systems	1.5	5
1.6	Financial relations	Relationships between the local authority and finance providers	3.0	5
1.7	Promotional tools	Advertising the local authority does to promote its services or its region	1.6	5
2.0	External Capital		Weighting	Maximum Score
2.1	Brands	Details of brands associated with the local authority	1.7	5
2.2	Ratepayer database	Database of all ratepayers	0.9	5
2.3	Ratepayer demographics	Information relating to ratepayers	2.6	5
2.4	Ratepayer satisfaction	Indicators of ratepayer satisfaction	3.3	5
2.5	Backlog work	Relating to unfinished/un-started projects	2.5	5
2.6	Distribution channels	Information on how local authority services/products reach users	1.8	5
2.7	Joint ventures/collaborations	Involving the local authority	3.1	5
2.8	Licensing agreements	Held by the local authority	1.9	5
2.9	Quality standards	Adherence to quality assurance programs/standards	2.6	5
3.0	Human Capital		Weighting	Maximum Score
3.1	<i>Know-how</i>	Employee knowledge	1.2	3
3.2	Education programs	Education/ongoing programmes initiated by local authority	1.4	5
3.3	Vocational qualifications	Non academic qualifications held by employees	1.2	5
3.4	Work-related knowledge	Gained 'on the job' or as part of ongoing training	1.3	5
3.5	Cultural diversity	Demographic information of employees	1.6	5
3.6	<i>Entrepreneurial innovativeness</i>	Focusing on cost-minimisation rather than profit-maximisation	2.7	3
3.7	Equal Employment Opportunities	Details of EEO programs/initiatives	1.9	5
3.8	Executive compensation plans	Details of executive remuneration	2.9	5
3.9	Training programs	Undertaken/provided by the local authority	1.4	5
3.10	Union activity	Details of unions representing employees	1.3	5

5.1.6 Scoring of Annual Reports

Content analysis uses counts of data: either words, sentences, paragraphs or portion of pages (Guthrie *et al.*, 2004; Wong & Gardner, 2005; Shareef & Davey, 2005). Using pages as a unit of analysis is popular in studies that require coding of pictures and charts, paragraphs, sentences and words cannot capture these (Morgan & Wong, 2005). In this research charts, pictures and graphs were not coded due to the difficulty in interpreting one message from such graphics, and the difficulty in attempting to quantify the impact that pictures and graphs have (Guthrie *et al.*, 2004). Sentences are generally considered to be the preferred unit of analysis. According to Milne & Adler (1999, p.243):

As a basis for coding sentences are far more reliable than any other unit of analysis... Individual words have no meaning to provide a sound basis for coding social and environmental disclosures without a sentence or sentences for context. Likewise laying a plastic grid sheet over a body of text and trying to code the contents of each grid square would result in meaningless measures.

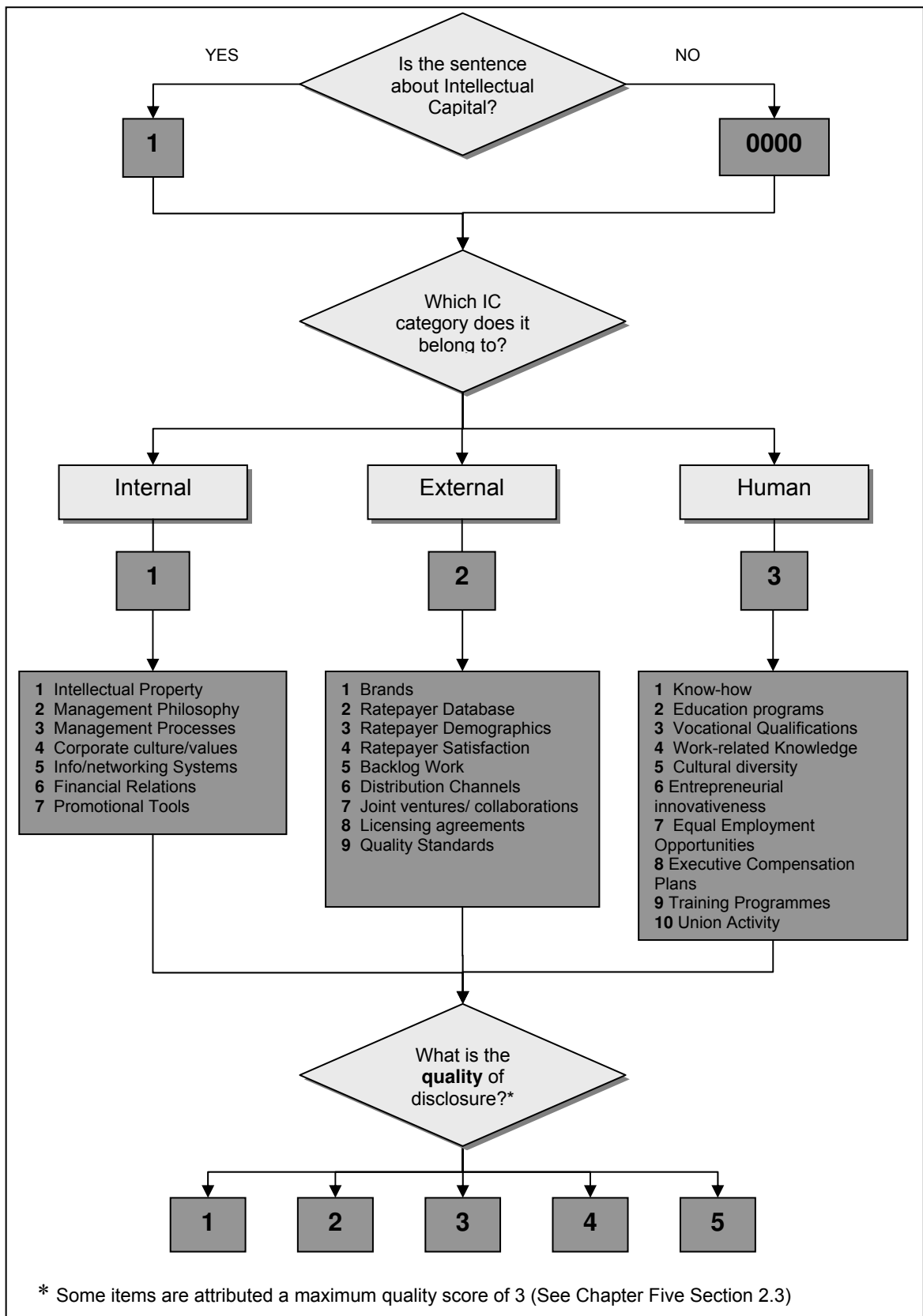
In this research, sentences were chosen as the unit of analysis to overcome the problems related to use of words, paragraphs, or portion of pages that add unnecessary unreliability (Bozzolan *et al.*, 2003). It is important to note that only voluntary disclosures and those not required by accounting standards or legislation were analysed as part of the content analysis. Sections of the reports that were analysed included the Mayor's report, the CEO's report, and the Statements of Service Performance but *excluded* the Financial Statements, Notes to Financial Statements, Auditor's Report, and the Statement of Accounting Policies.

The following decision rules were strictly applied to the annual reports during coding:

- Do not code for graphs, pictures, or diagrams.
- Code only voluntary disclosures i.e. do not code for Auditor's Report, Statement of Responsibility, Financial Statements, or Notes to the Financial Statements.
- Code for meaning rather than looking for exact words as some concepts are broad and exact word may not be enough.
- Do not code as IC item if concept is implied.

Figure 5.3 presents the decision framework instrument that was used to assist in the coding of the annual reports.

Figure 5.3 The scoring decision framework used in this research



Source: Adapted from Wong & Gardner (2005).

Each sentence in the annual report was assigned a four digit numerical code (or five, if the sentence related to ‘union activity’) according to the coding framework presented in Figure 5.3. The quality score (final digit of the four/five letter code) was allocated for each sentence relating to IC, on a scale of one to five (or three in some cases, see Table 5.10 for detail) using the quality criteria established in Chapter Five, Section 2.3. Sentences with no intellectual capital disclosures were allocated the code **0000**.

An example of a coding sentence is: “*to promote the well being of the people of the Waipa District thorough timely provision of services and sustainable management of natural resources*” (Waipa District Council, 2005, p. 2) would be assigned the code **1123**. The first **1** indicates that the sentence is about intellectual capital, the second **1** categorises the sentence as belonging to the internal capital category, **2** recognises the sentence as being concerned with ‘management philosophy’ and the last digit, **3**, represents the quality score (out of a maximum of three for this particular item).

Once the coding of all sentences in a report was complete, the codes were analysed and aggregated into the three intellectual capital categories presented in the disclosure index. In some instances there were a number of sentences regarding the same intellectual capital item but which had different quality scores (as indicated by the last digit in the four letter code). The researcher analysed the group of scores and allocated a quality score based on the aggregate of group. The quality score for the group of codes was taken as the ‘allocated score’ (raw mark) which was reported for that particular IC item in the disclosure index. The allocated score for each item was multiplied by the weighting for that item to obtain the ‘weighted score’ for the item.

A number of summary scores were calculated to assist with the annual report assessment process:

- An unweighted percentage score for each of the three IC categories;
- A weighted percentage score for each of the three IC categories;
- An unweighted percentage score of the annual report as a whole; and
- A weighted percentage score for the annual report as a whole.

The results of the annual report analysis process revealed statistically significant differences between the weighted and unweighted final scores. This reflects the

different levels of importance of placed on particular items by the stakeholder panel and is discussed further in Chapter Six, Section 3.1. It was decided to use only the weighted scores in the final analysis and assessment as the weighted index has the strength of acknowledging some items are more important than others. It also enabled a comparison of scores with the weightings to determine if there is an information gap between the disclosures deemed important by the stakeholder panel and the actual level of disclosure in the annual reports of local authorities.

5.2 SUMMARY

The aim of this chapter was to describe the development of a disclosure index to measure the extent and quality of intellectual capital disclosure in the annual reports of the New Zealand local government sector. A list of disclosure items was compiled from extant IC literature. This preliminary list was modified to make it more applicable to the local government sector. The list of items was presented to a purposely selected 14-member stakeholder panel that had an interest in local government reporting and intellectual capital reporting. The stakeholder panel was asked to review the list and indicate for each item, a score from zero to four representing the importance of disclosure. These scores were collated and averaged to determine a weighting for each item.

As the index was designed to measure extent and quality of disclosure, detailed quality criteria were established for each item according to prior IC disclosure literature. Each item was scored against a quality measure: zero (non-disclosure) to five (quantitative, monetary and descriptive disclosure). The index also incorporated weightings of importance which would enable the assessment of the extent and quality of intellectual capital disclosure in the annual reports of the New Zealand local government sector.

The next chapter presents the results and discussion of applying the disclosure index to the 2004/2005 annual reports of the local government sector.

CHAPTER SIX

RESULTS AND DISCUSSION

6.1 INTRODUCTION

The previous chapter described the development of the Intellectual Capital Disclosure (ICD) index used to measure the extent and quality of intellectual capital disclosure by the local government sector of New Zealand. This chapter presents a discussion of the results obtained through the application of the disclosure index to the 2004/2005 annual reports of New Zealand local government sector.

In total, 82 annual reports were analysed and scored against the intellectual capital disclosure index. The final analysis included the reports of 68 territorial authorities, 11 regional authorities and 3 unitary authorities. Three local authorities (Invercargill City Council, West Coast Regional Council, and Marlborough District Council) were not included in the analysis due to difficulties in obtaining their annual reports.

This chapter is structured as follows. The next section analyses the extent and quality of intellectual capital (IC) disclosure by comparing the mean score of each item with the importance score allocated to the stakeholder panel. The importance of each item was allocated by the stakeholder panel according to rating scale of zero to five. The final scores of each local authority are presented, followed by a comparison of the weighted and unweighted scores for each local authority. Next, the overall weighted scores are arranged in descending order from highest to lowest. This is followed by a comparison of the final scores by local authority type (territorial, regional/unitary) and final scores by authority size (rates income for the 2004/2005 financial year). Finally, the results of a correlation analysis to determine the existence of correlations between final scores, local authority type, local authority size and size of the annual report (number of pages) is presented. The statistical analysis in this research was conducted using SPSS 13.0 for Windows. The results were interpreted with the help of Field (2000) and were considered significant at $p = 0.05$ (5%).

6.2 THE EXTENT AND QUALITY OF DISCLOSURE

This section presents the results of the analysis. Results from each of the three categories of intellectual capital (internal, external and human capital) are discussed in turn, followed by an item-by-item analysis of scores for each category. Tables 6.1 to 6.3 show the frequencies of each quality disclosure score, the mean score for all local authorities for that item, and the importance of disclosure of that item as rated by the stakeholder panel. The quality of disclosure was measured using the 6-point scale described in Chapter Five.

Where there is a significant gap between the mean score of an individual intellectual capital item and the level of importance of its disclosure, the item is shaded in blue. A complete summary of results is included in Appendix H, which details the following for each disclosure item: mean score, highest score, lowest score, frequency of scores, and percentage of local authorities with each score. A full set of results for one local authority as described in Table 6.5 is presented in Appendix I. A score sheet such as this was prepared for each local authority. For the purposes of the following analysis, only the mean scores for each item for all 82 local authorities are included. Each item was scored according to the quality criteria set out in Chapter Five, Section 2.3 which allocated a maximum score of five to each item, or three for items considered to be primarily of a narrative nature. Items that were scored out of a maximum of three were: 1.1 'intellectual property', 1.2 'management philosophy', 1.3 'management processes', 1.4 'corporate culture/values', 3.4 'work-related knowledge', and 3.6 'entrepreneurial innovativeness'.

6.2.1 Internal Capital

Table 6.1 presents a frequency analysis of the internal capital category. The table shows the number of local authorities who achieved each score (frequency). The **mean score** represents the average score for all the local authorities for that particular intellectual capital disclosure item. The **level of importance** indicates the importance score allocated to each item by the stakeholder panel. Where there is a significant difference between the mean score achieved and the level of importance, the cells are shaded in blue. Where a column contains 'n/a' the item was only scored out of a maximum of three due to its narrative nature (see Chapter Five, Section 2.3 for more detail).

Table 6.1 Frequency analysis of the internal capital category

1.0	Internal Capital	Frequency						Mean Score	Level of Importance
		0	1	2	3	4	5		
1.1	Intellectual property	82	0	0	0	n/a	n/a	0.0	intermediate
1.2	Management philosophy	16	0	2	64	n/a	n/a	2.4	very important
1.3	Management processes	3	0	2	77	n/a	n/a	2.9	intermediate
1.4	Corporate culture/ values	7	0	1	74	n/a	n/a	2.7	intermediate
1.5	Information/networking systems	24	0	12	21	5	20	2.5	intermediate
1.6	Financial relations	9	0	6	10	3	54	4.0	very important
1.7	Promotional tools	10	0	4	20	7	41	3.7	intermediate

‘Management processes’ was the highest scoring item on average in the internal capital section with 94% of local authorities achieving the maximum score. This level of disclosure exceeded stakeholder panel expectations who only rated this item as being of intermediate importance. The item ‘financial relations’ also had a relatively high level of disclosure, with 70% of local authorities achieving a score of four or five. This was consistent with the stakeholder panel’s expectation, who rated financial relation disclosure as being very important. The item ‘promotional tools’ was also disclosed well by most local authorities with 59% of local authorities gaining scores of four or five. This level of disclosure also exceeded stakeholder expectations who rated promotional tools as being of intermediate importance. No local authorities disclosed any information about intellectual property which was rated as being of intermediate importance by the stakeholder panel.

Overall, this category of intellectual capital was disclosed reasonably well. ‘Management philosophy’, ‘management processes’, and ‘corporate culture/values’ scored well but information about intellectual property and networking/information systems was under-disclosed according to the stakeholder panel’s expectations. Each intellectual capital item is discussed in further detail below.

6.2.1.1 Intellectual Property

‘Intellectual property’ refers to details of patents, copyrights, or trademarks held by the local authority. Disclosure of this item was scored out of a maximum of three (see Chapter Five, Section 2.3). This item was not disclosed by any local authorities. An explanation of poor disclosure could be that many local authorities do not hold any

patents or trademarks, therefore they have nothing to disclose in this category. The stakeholder panel rated this item as being of intermediate importance for disclosure, an expectation that was not met. This highlights an information gap between stakeholder expectations of disclosure and the level of disclosure that is currently being provided by local authorities.

6.2.1.2 Management Philosophy

‘Management philosophy’ refers to vision and mission statements. This item was scored out of a maximum of three (see Chapter Five, Section 2.3). This item was disclosed reasonably well by the majority of local authorities. A vision or mission statement was disclosed by 78% of local authorities, who achieved the maximum score of three for their disclosure. Most local authorities clearly stated their vision/mission statements within the first few pages of the annual report.

As an example, Ashburton District Council’s mission statement which achieved a score of three out of three was disclosed near the front of the annual report:

The Ashburton District Council is committed to enabling its community to achieve social and economic growth in a quality environment. (Ashburton District Council, 2005, p.9).

Similarly, Auckland City Council also achieved maximum score for their mission statement disclosure on page two:

Our mission – To provide excellent leadership and sustainable community services to improve the quality of life for the people in the city of Auckland. (Auckland City Council, 2005, p.2).

Disclosure of ‘management philosophy’ which scored only two out of three according to the quality criteria was made by 2% of local authorities, with a further 20% making no disclosure at all.

6.2.1.3 Management Processes

‘Management processes’ refers to processes within the local authority and encompasses a wide range of activities such as council structure, decision-making processes, and customer service processes. Disclosure of this item was scored out of a maximum of

three (see Chapter 5.2.3). This item was well disclosed with 94% of local authorities achieving the maximum score of three. A further 2% made limited disclosures while only 4% of local authorities failed to make any disclosures.

As an example, New Plymouth District Council achieved a score of three out of three for their disclosure explaining their civic and democracy services:

Its effective operation ensures that councillors, community boards, committees and working parties are able to make a positive contribution towards the community outcomes, through the provision of support, advice and procedural guidance. The service ensures that decisions concerning the outcomes are achieved in a way that is open, honest and transparent. Essentially this support function provides the cornerstone for effective decision making throughout the council (New Plymouth District Council, 2005, p. 74).

Environment Waikato also achieved a score of three out of three for their disclosure of management processes:

The Region's people are represented by 14 Councillors, who are elected every three years. Elections were held in October 2004. Councillors meet regularly to discuss and make decisions on a wide variety of resource management issues (Environment Waikato, 2005, p.6).

6.2.1.4 Corporate Culture/Values

'Corporate culture/values' refers to disclosure of the attitudes, experiences, beliefs and values of the local authority. It was allocated a maximum possible score of three. This was another item that was well disclosed, with 90% of local authorities achieving the maximum score of three. Limited disclosures were only made by one local authority, Matamata-Piako District Council. Nine percent of local authorities did not disclose any information about their corporate culture/values. These authorities were: Far North District Council, Franklin District Council, Grey District Council, Hastings District Council, Ruapehu District Council, Waitomo District Council, and Northland Regional Council.

Opotiki District Council was one of many local authorities that scored a maximum three for their disclosure of their culture/values. The following represents an extract of their value statement:

Integrity and Honesty – we will not compromise our values and will act in a trustworthy manner at all times. Leadership – we will take an active role in issues

that effect our community by providing governance, representation, advocacy, guidance and opinion. Openness and Accountability- we will conduct our affairs in a way that allows the community to see and understand our actions and achievements and we will accept responsibility for them (Opotiki District Council, 2005, p.2).

6.2.1.5 Information/Networking Systems

‘Information/networking systems’ refers to details on the development, use, application and influence of information/networking systems on the local authority. This item was scored out of a maximum of five. Overall, information/networking systems was disclosed by 71% of local authorities. Only 30% of local authorities achieved a score of four or five for this item.

Hamilton City Council achieved the maximum score of five for the following disclosure on their new Building Hamilton website:

Council’s Building Control Unit is leading Hamilton in information for the building industry – making information and resources even more accessible. The Building Control Unit launched a new, comprehensive website (www.buildhamilton.co.nz) on 16 March 2005. The website brings a host of relevant up-to-date information to the fingertips of residential or commercial builders and developers (Hamilton City Council, 2005, p.14).

Hamilton City Council also provided additional detail on how to obtain further information on Build Hamilton by providing an email address and telephone number.

A further example of disclosures that scored the maximum for ‘information/networking systems’ was the detail provided by Porirua City Council on a database system that was implemented in the city library:

Porirua City Library launched a Knowledge Centre which offers public access to some top-notch databases. The library has banded together with other libraries from around NZ to buy a new selection of electronic resources, called EPIC. EPIC can be accessed from the Knowledge Centre which has three dedicated computers which can be used to tap into several authoritative databases. Improving access to information and knowledge helps to contribute to the cultural, social, environmental, and economic well-being of the City. The EPIC databases include over 100,000 recommended titles, more than 60,000 plot summaries and award information from 562 awards, all to help users uncover new reading adventures, find long-remembered favourites and discover award-winning titles (Porirua City Council, 2005, p.9).

Hauraki District Council provides an example of a local authority which only achieved a score of two out of five for their disclosure of ‘information/networking systems’:

To operate a service requests/complaints database system to monitor service requests, and response. (Hauraki District Council, 2005, p.27).

They provided only a limited narrative reference to a database system for recording land drainage issues in its district which did not include numerical or monetary terms.

6.2.1.6 Financial Relations

‘Financial relations’ details the relationship between the local authorities and finance providers, or details of loans and grants made by the local authority to other entities. This item was well disclosed by the majority of local authorities, with 70% of local authorities achieving a score of four or five. Only 11% of local authorities made no disclosures regarding financial relations. Information regarding grants and subsidies received/awarded by the local authorities was the most common form of disclosure in this category.

An example of a disclosure that scored five out of five was the following disclosure that was made by Horowhenua District Council in its report on ‘community support’:

When the Council was about to demolish the old building on the Durham Street property purchased in the previous year, some community groups suggested that it could instead be developed as a youth centre, with refurbishing work financed by the \$82,845 donation from Contact that is held by the Council (Horowhenua District Council, 2005, p.12)

In comparison, Opotiki District Council scored only two out of five with their limited reference to financial relations with the following statement:

Grants [were] made to Fibre and Fleece and Tourism Eastland and [a] contribution [was] made to REDA⁴ (Opotiki District Council, 2005, p.54).

6.2.1.7 Promotional Tools

‘Promotional tools’ refers to advertising or events that the authority carries out to promote its services or its area. This was another item that was disclosed well with 88% of local authorities making some form of disclosure. Fifty percent of local authorities

⁴ Refers to the Regional Economic Development Agency for the Eastern Bay of Plenty

achieved the highest score for this category (five out of five), while 12% did not disclose any information at all. Many local authorities disclosed information about events, concerts, and exhibitions that they were involved with to attract visitors to their city or region.

The following extract from Upper Hutt City Council was awarded five out of five for their disclosure on events staged by the city to attract visitors:

The Visitor Information Centre continues to play an active role in a large number of major community events for the promotion of Upper Hutt and the benefit of its residents. Some of these highlights were the International Jousting Competition at Harcourt Park (which attracted a record 15,000 crowd), the Rimutaka Spring Festival, Moto-X at the Trentham Racecourse, Fireworks Fantastic at Trentham Memorial Park and the Summer Carnival (Upper Hutt City Council, 2005, p.5).

The extensive disclosures made by Upper Hutt City Council can be contrasted to the limited disclosures made by Far North District Council. They scored only two out of five for their cursory reference to their visitor information centre network which did not contain numerical or monetary information:

Visitor information centres promote economic development and tourism (Far North District Council, 2005, p.54).

6.2.2 External Capital

Table 6.2 presents a frequency analysis of the external capital category. The table shows the number of local authorities who achieved each score (frequency). The **mean score** represents the average score for all the local authorities for that particular intellectual capital disclosure item. The **level of importance** indicates the importance rating attributed to each item by the stakeholder panel. Where there is a significant difference between the mean score achieved and the level of importance, the level of importance is shaded in blue. In this category, all items were scored out of a maximum of five (see Chapter Five, Section 2.3).

Table 6.2 Frequency analysis of the external capital category

2.0	External Capital	Frequency						Mean Score	Level of Importance
		0	1	2	3	4	5		
2.1	Brands	68	0	2	5	1	6	0.6	intermediate
2.2	Ratepayer database	75	0	3	2	1	1	0.3	minor importance
2.3	Ratepayer demographics	38	0	10	8	16	10	1.9	very important
2.4	Ratepayer satisfaction	16	0	0	4	0	62	3.9	very important
2.5	Backlog work	24	0	2	22	9	25	2.8	very important
2.6	Distribution channels	4	0	0	3	1	74	4.7	intermediate
2.7	Joint ventures/ collaborations	3	0	1	10	2	66	4.5	very important
2.8	Licensing agreements	80	0	1	0	0	1	0.1	intermediate
2.9	Quality standards	5	0	2	6	3	66	4.4	very important

‘Distribution channels’ was the highest scoring item on average in the external capital section with 90% of local authorities achieving the maximum score. This level of disclosure exceeded stakeholder panel expectations who only rated this item as being of intermediate importance. Eighty percent of local authorities achieved level five disclosure in the ‘joint ventures/business collaborations’ item. This level of disclosure met stakeholder expectations, which placed very high importance on the disclosure of business collaborations and joint ventures. Disclosure of ‘quality standards’ was also high, with 80% of local authorities achieving the maximum score of five out of five for their disclosure. This level of disclosure met stakeholder expectations who stated that disclosure of this time was very important. ‘Ratepayer satisfaction’ was also disclosed well with 81% of local authorities making some sort of disclosure in this category. This item was rated as being very important to disclose by the stakeholder panel which shows that their expectations of disclosure are being met by the majority of local authorities.

Three items in the external capital category did not meet stakeholder expectations of disclosure. ‘Brands’, ‘ratepayer demographics’ and ‘licensing agreements’ were poorly disclosed. Stakeholder expectations of ‘brands’ disclosure was that it was of intermediate importance, but this was not reflected in the actual level of disclosure. Ratepayer demographics was rated as very important for disclosure, but the majority of local authorities made no or only limited disclosures of this item. Licensing agreements were poorly disclosed, with only Napier City Council disclosing information about this item. Stakeholders indicated this item was of intermediate importance, which indicates a gap between the level of disclosure by local authorities and stakeholder expectations.

Overall, ‘ratepayer satisfaction’, ‘distribution channels’, ‘joint ventures/business collaborations’ and ‘quality standards’ scored well but information about ‘brands’, ‘ratepayer demographics’ and ‘licensing agreements’ was under-disclosed, highlighting a gap between the level of disclosure and the importance of disclosure as indicated by the stakeholder panel. Each item in the external capital category is discussed in more detail in the sections that follow.

6.2.2.1 Brands

‘Brands’ relates to details of brands associated with the local authority. This item was poorly disclosed. Only 17% of local authorities made any sort of disclosure of this item, while 83% made no disclosure at all. Stakeholder expectations of brand disclosure rated it as of intermediate importance which was not reflected in the actual level of disclosure.

Rangitikei District Council achieved a maximum score of five out of five for their disclosures relating to their logo:

The logo symbolises the strength of the river, a unique icon, which bisects the District. The sun’s rays represent the healthy environment and the genuine natural elements of the Rangitikei culture and lifestyle. The typography and use of colour is typical of a romanticised era in New Zealand’s past and is seen in the signage and packaging from the 1920s to the 50s when the District experienced considerable growth (Rangitikei District Council, 2005, p.12).

Manawatu District Council also achieved a maximum score of five out of five for the following disclosure:

The logo for the Manawatu District Council has a flowing style of “M” endeavoring [sic] to give the feeling of the hills that are prominent around this area. The tail of the “M” becomes smoother to indicate the relatively flat plains within the hills. The Manawatu River through the hills is also indicated by the flowing “M”. The “M moves over 5 diagonal bars representing the 5 former Councils which make up the new district (Feilding Borough Council, KIWITEA County Council, Manawatu District Council, Oroua County Council and Pohangina County Council). The feeling of movement also indicates that the council will be seen as a lively, progressive and forward thinking local authority (Manawatu District Council, 2005, p.109).

In contrast, Environment Bay of Plenty achieved a score of three out of five for their disclosure relating to their brand:

In keeping with our mission statement of ‘working with our communities for a better environment’, we have continued to be involved in awards this year. The ‘brand identity’ and the association of that brand with those who achieve in environmental management or enhancement, continue to be very beneficial for Environment Bay of Plenty as an organisation statutorily focused on achieving positive environmental objectives (Environment Bay of Plenty, 2005, p.4).

The statement did not include monetary or actual physical quantities in their discussion which prevented the disclosure from scoring higher than three out of five. The disclosure also did not discuss the brand’s attributes specifically, only that the brand was beneficial to the organisation

6.2.2.2 Ratepayer Database

‘Ratepayer database’ refers to disclosures of the existence of a database of all ratepayer or stakeholder groups. This item was only rated as being of minor importance for disclosure by the stakeholder panel, which was matched by the relatively low level of disclosure by local authorities. Ninety one percent of local authorities did not make any disclosures of this item. The 9% that did were Auckland City Council, Buller District Council, Central Otago District Council, Gore District Council, Horowhenua District Council, Hurunui District Council and Matamata-Piako District Council.

Buller District council achieved a score of four out of five with the following disclosures of their databases:

Council staff have established a stakeholder database, and are working to further develop a resource of local community groups and organisations working with Maori within the district (Buller District Council, 2005, p.37).

Auckland City Council provided a brief comment on a stakeholder database they administer:

Auckland City now has a database of about 300 groups it can notify directly about upcoming hui (Auckland City Council, 2005, p.36).

6.2.2.3 Ratepayer Demographics

‘Ratepayer demographics’ refers to information regarding ratepayers and the general population of the city/region. Disclosure of ‘ratepayer demographics’ was indicated as being very important by the stakeholder panel. This level of importance was not reflected in the level of disclosure by local authorities. Forty six percent of local authorities made no disclosure on the demographics of their ratepayers. The 12% of

local authorities that scored five out of five for this item were: Auckland City Council, Central Otago District, Clutha District Council, Hamilton City Council, Hastings District Council, Mackenzie District Council, Manukau City Council, Rotorua District Council, Upper Hutt City Council, and Whakatane District Council.

Auckland City Council provided excellent information about the demographics of their population. The following is an extract from their annual report:

- *The population was estimated to be 422,701 at June 2004.*
- *The population is projected to reach 530,600 by 2021.*
- *98 per cent of residents live on the isthmus, which excludes the Hauraki Gulf islands – the population density for this area is about 23 people per hectare.*
- *The Hauraki Gulf islands have a population density of about 0.2 people per hectare. However, most of the residents (86 per cent) live on Waiheke Island.*
- *The median age of residents is 33.3 years.*
- *10 per cent of the population is aged 65 years and over.*
- *39 per cent of residents were not born in New Zealand (Auckland City Council, 2005, p.176).*

The following extract from Otorohanga District Council provides an example of disclosures that achieved a score of two out of five:

The town has a population of 2654 and is an important focus for tourist activities in the North King Country area (Otorohanga District Council, 2005, p.7).

6.2.2.4 Ratepayer Satisfaction

‘Ratepayer satisfaction’ relates to disclosures of how satisfied ratepayers are with the services provided by the local authority. Disclosures of ‘ratepayer satisfaction’ were regarded as being very important by the stakeholder panel. This expectation was met by the local authorities who on the whole, provided excellent disclosures about the satisfaction of their residents. Seventy six per cent of local authorities achieved the maximum score of five, and only 20% failed to disclose any information about their ratepayer’s satisfaction.

New Plymouth District Council provided an explanation of ratepayer satisfaction measures in the Chief Executive’s Report:

It is important that the council understands whether the community is satisfied, or not, with the services the council provides. For this reason we carry out an independent survey of New Plymouth residents and ask them how satisfied they are with council services... only two of the council’s services received a

satisfaction rating below 80 per cent. These two services, parking and public toilets, are traditionally difficult services for most councils (New Plymouth District Council, 2005, p.3).

Manukau City Council surveyed residents to determine their level of satisfaction with various aspects of the council's performance during the year. The paragraph below shows an extract from the Statement of Service Performance.

- *Significant Activity Target: A customer satisfaction index score of 80 or greater from sports clubs and associations using sports parks.*
- *Significant Activity Progress: The annual customer satisfaction survey was undertaken by Manukau Parks in June 2005 and the customer satisfaction index for sports clubs and associations using sports parks was 89 (Manukau City Council, 2005, p.59).*

North Shore City Council was one council that provided detailed information about how the customer/ratepayer survey was carried out:

TNS New Zealand Ltd was commissioned in 2005 to undertake North Shore City Council's annual survey of residents and businesses. The survey primarily measures respondent use of, and satisfaction with, a range of council services. The survey was conducted using telephone interviews, consistent with previous years. A total of 1,250 North Shore City residents aged 18 and over participated in the external survey. The margin of error at 95 per cent confidence level is +/- 2.8 per cent. The number of business respondents to the survey was 500. The margin of error at 95 per cent confidence level is +/-4.4 per cent.

The survey scales used were as follows:

- 1. Very satisfied*
- 2. Satisfied*
- 3. Neutral*
- 4. Not satisfied*
- 5. Not at all satisfied*

A positive rating is either 1 or 2 (North Shore City Council, 2005, p.40).

6.2.2.5 Backlog Work

Disclosure of 'backlog work' was considered very important by the stakeholder panel. This item related to work that was planned by the local authority but was unstarted as of the end of the financial year or work that was unfinished and was carried over to the next financial year. This category was disclosed well by the majority of local authorities with 71% of local authorities providing disclosures that met the quality standard of three or higher. Twenty nine percent of local authorities did not provide any disclosure of 'backlog work'.

The majority of ‘backlog work’ disclosures were made in the Statement of Service Performance, with indications of budgets carried forward to next year or work that would be completed in the next financial year. The Manukau City Council annual report gives an example of such disclosure:

Major Passenger Transport Projects — under spent — \$464,000 — The under spent portion of the budget has been carried forward to the 2005/06 year. Two projects were not completed during the year due to ongoing negotiations over the replacement of a verandah [sic] with adjoining land owners plus redesign of the project to keep costs within budget (Manukau City Council, 2005, p.75).

6.2.2.6 Distribution Channels

The disclosure of ‘distribution channels’ relates to the products and services provided by the local authority. Included in ‘distribution channels’ is details of the infrastructure assets owned and/or used by the local authority to provide products and services. Disclosure of this item was only considered of intermediate importance by the stakeholder panel, but was disclosed to a very high level by local authorities. The maximum disclosure score of five was achieved by 90% of local authorities and only 5% of local authorities did not disclose information about their distribution channels.

North Shore City Council received a score of five out of five for its in-depth disclosure of its services to ratepayers. They provided an outstanding example of disclosures for ‘distribution channels’. The extract below details the council’s wastewater network:

Wastewater is collected from over 200,000 people through private drains leading from bathrooms, kitchens, laundries and toilets, and also tradewaste from commercial premises. This is then piped and pumped through our public drain network to our Rosedale Wastewater Treatment Plant. After treatment the solid wastes are discharged to landfill and the treated effluent (liquid) is discharged through our outfall, 600 metres out to sea off Kennedy Park. A few residents have septic tanks which are not connected to our network. The wastewater system carries and treats approximately 46 million litres of liquid waste per day from households, businesses and industries. The system includes more than 1,280km of pipes, 27,700 manholes, 91 pumping stations, a treatment plant and ocean outfall. The total replacement cost of the system would be around \$556m (including \$79m for the treatment plant). The current condition of the wastewater system varies from excellent in the new high-quality treatment facilities through to average and poor in some of the oldest parts of the city. An analysis of the wastewater reticulation network indicated that 70 per cent of pipes are likely to be in good or excellent condition (North Shore City Council, 2005, p.47).

Similar levels of disclosure were also presented for North Shore City Council's other significant activities including infrastructure, environmental management, community services and economic development.

6.2.2.7 Joint Ventures/Business Collaborations

Many local authorities worked with other organisations during the financial year to provide services to their ratepayers/residents. These collaborations were analysed under the item 'joint ventures/business collaborations' and included reports of Council Controlled Organisations (CCOs). Disclosure of this item was considered to be very important by the stakeholder panel, an expectation which was met by the local authorities. Disclosure levels were high, with 80% of local authorities achieving a score of five out of five for this item and only 4% not disclosing any information. Only one local authority (Hauraki District Council) scored two out of five for this item, 12% scored three out of five for providing narrative disclosures, and the remaining 2% (Ashburton District Council and Central Otago District) scored four out of five.

The following disclosure by Queenstown Lakes District Council was only awarded three out of five for providing narrative disclosures without providing quantities or monetary figures:

This activity requires the council to work in close partnership with Transfund New Zealand who fund a portion of local roads through national levies and Transit New Zealand who provide the complementary state highway network (Queenstown Lakes District Council, 2005, p.69).

In contrast, Southland District Council's disclosure regarding a joint project between four councils achieved a score of five out of five for quantifying the number of councils involved in the joint project:

The four councils within Southland (Southland District Council, Environment Southland, Invercargill City Council and Gore District Council) undertook a joint project "Our Way - Southland" to identify outcomes the community (Southland District Council, 2005, p.7).

6.2.2.8 Licensing Agreements

'Licensing agreements' refers to contracts giving other organisations or entities the legal rights to use patents or trademarks held by the local authority. A broad

interpretation of this item was taken during coding to include general contracts and agreements between the local authority and other entities regardless of whether they related specifically to patents or trademarks. This item was considered to be of intermediate importance by the stakeholder panel. This was not reflected by the annual report disclosures, which revealed that 98% of all local authorities did not disclose any information on licensing agreements.

Napier City Council provided fairly limited disclosures on its agreements with other organisations which received a score of two out of five:

Five organisations have service agreements/purchase contracts with the Napier City Council; Creative Napier, Hawke's Bay Life Saving, Napier Citizens Advice Bureau, Neighbourhood Support and Sport Hawke's Bay and all met the reporting requirements. (Napier City Council, 2005, p.54)

6.2.2.9 Quality Standards

Disclosures of adherence to quality standards were considered very important by the stakeholder panel. Local authorities met stakeholder expectations with 94% of local authorities disclosing some information about 'quality standards', and 80% achieving maximum scores of five out of five. Buller District Council, Papakura District Council, Environment Bay of Plenty, Hawkes Bay Regional Council and Taranaki Regional Council represent the 6% of local authorities that did not disclose any information about this item.

The majority of 'quality standards' disclosure related to the achievement of drinking water quality standards. Auckland City Council made the following disclosures regarding their drinking water:

Auckland city's drinking water continues to be of a high standard. In 2004/2005 it again received an Aa grading from the Ministry of Health for both treatment at source and distribution (Auckland City Council, 2005, p.33).

Some discourses relating to 'quality standards' highlighted achievement of ISO standards. The following is an example from Waitaki District Council's annual report:

Target: To ensure the Company⁵ maintains required quality standards.

⁵ This refers to Whitestone Limited a Council Controlled Trading Organisation set up under the *Local Government Act 2002*.

Measure: To maintain ISO 9001 registration and related quality assurance progresses.

Achievement: The Company has passed its last audit in March 2005 and is maintaining its registration and quality assurance programmes (Waitaki District Council, 2005, p.67)

6.2.3 Human Capital

Table 6.3 presents a frequency analysis of the human capital category. The table shows the number of local authorities who achieved each score (frequency). The **mean score** represents the average score for all the local authorities for that particular intellectual capital disclosure item. The **level of importance** indicates the importance rating attributed to each item by the stakeholder panel. Where there is a significant difference between the mean score achieved and the level of importance, the level of importance is shaded in blue. In this category items 3.1 ‘know-how’ and 3.6 ‘entrepreneurial innovativeness’ were scored out of a maximum of three due to their narrative nature (see Chapter Five, Section 2.3).

Table 6.3 Frequency analysis of the human capital category

3.0	Human Capital	Frequency						Mean Score	Level of Importance
		0	1	2	3	4	5		
3.1	Know-how	43	0	16	23	n/a	n/a	1.2	minor importance
3.2	Education programs	14	0	1	15	7	45	3.7	minor importance
3.3	Vocational qualifications	60	0	8	8	0	6	0.9	minor importance
3.4	Work-related knowledge	54	0	5	18	2	3	1.1	minor importance
3.5	Cultural diversity	59	0	7	4	7	5	1.0	intermediate
3.6	Entrepreneurial innovativeness	75	0	4	3	n/a	n/a	0.2	very important
3.7	Equal Employment Opportunities	46	0	0	4	0	32	2.1	intermediate
3.8	Executive compensation plans	65	0	4	5	1	7	0.8	very important
3.9	Training programs	26	0	3	10	4	39	3.0	minor importance
3.10	Union activity	74	0	1	3	0	4	0.4	minor importance

‘Education programs’ was the highest scoring item on average in the human capital section with 55% of local authorities achieving the maximum score. This level of disclosure exceeded stakeholder panel expectations who only rated this item as being of minor importance. Forty eight percent of local authorities achieved level five disclosure

in the ‘training programs’ item. This level of disclosure also exceeded the stakeholder panel’s expectations, which placed only minor importance on the disclosure of training programs.

Two items in the human capital category did not meet stakeholder expectations of disclosure. ‘Entrepreneurial innovativeness’ and ‘executive compensation plans’ were both poorly disclosed. The stakeholder panel placed a very high importance on the disclosure of these items which was not reflected in the actual level of disclosure. Entrepreneurial innovativeness was not disclosed by 91% of all local authorities. Seventy nine percent of local authorities did not disclose any information on ‘executive compensation plans’. This last point requires further clarification. Disclosure of executive remuneration is required by the *Local Government Act 2002* and the accounting standards, NZ IAS 1 *Presentation of Financial Statements* and NZ IAS 19 *Employee Benefits* and NZ IAS 24 *Related Party Disclosures*. This study did not examine the information presented in the financial statements where the majority of remuneration disclosure takes place. Those local authorities which scored highly for this particular item provided disclosures in addition to those required in the financial statements.

‘Union activity’ was regarded as being of minor importance by the stakeholder panel. This level of importance was not reflected by the actual level of disclosures with 90% of local authorities not disclosing any information of this item. ‘Vocational qualifications’ was also deemed to be of only minor importance by the stakeholder panel. Seventy three percent of local authorities did not disclose any information on this item.

Overall, this category of intellectual capital was poorly disclosed. ‘Education programs’, ‘training programs’, and ‘Equal Employment Opportunities’ scored the highest in the human capital category, but information about ‘vocational qualifications’, ‘entrepreneurial innovativeness’, ‘executive compensation plans’ and ‘union activity’ was under-disclosed. This highlights a gap between the level of disclosure and stakeholder expectations. In the sections that follow, each item in the human capital category will be considered further in more detail.

6.2.3.1 Know-how

The item 'know-how' relates to the knowledge and skills possessed by employees. This item was rated as being only of minor importance for disclosure by the stakeholder panel. Due to the narrative nature of this type of disclosure, a maximum score of three was allocated to this item. Disclosure of 'know-how' was low, with 52% of local authorities making no disclosure of this item. Twenty eight percent of local authorities scored the maximum score of three, while 20% scored two out of three.

An example of a 'know-how' disclosure which scored three out of three was the following disclosure by Auckland Regional Council regarding the skills of their staff:

Technical skills are wide-ranging; from water quality scientists, vulcanologists and botanists, to expert boat-handlers, park rangers and project managers. Our recruitment policy is to 'hire for fit' rather than for expertise alone. Employees of the ARC are increasingly mobile, moving between technical, educational, management and strategic planning areas depending upon their skills, experience and areas of interest (Auckland Regional Council, 2005, p.74).

6.2.3.2 Education Programs

Disclosure of 'education programs' refers to educational programs local authorities provide their staff or members of the wider community. Disclosure of this item was only considered as being minor importance by the stakeholder panel, yet 83% of local authorities made some sort of disclosure. Fifty five percent of local authorities achieved the maximum score of five out of five for this item. Most of the disclosures were in relation to education programs undertaken by the local authorities for the benefit of their respective populations. Examples of 'education programs' disclosure for members of the community that scored five out of five include:

The numbers of students taking action for the environment through our education programmes exceeded 2200 this year and the Be the Difference campaign, which assists households to look after the environment day to day, now has over 12,000 members. (Greater Wellington Regional Council, 2005, p.3)

Six educational visits were made to schools and community groups. (Waitomo District Council, 2005, p.55)

In contrast, the following disclosure by Horizons Regional Council scored two out of five because no numerical or physical quantities were disclosed:

Staff supported educational programmes with schools involving planting days on western beaches. (Horizons Regional Council, 2005, p.23)

Other local authorities such as Auckland Regional Council disclosure detail on education programs provided to their staff:

The ARC offers staff a variety of education and training programmes. A number of courses are run inhouse, by external providers, or in partnership with the Auckland University School of Business. These include: leadership development, communication skills, project management, conflict resolution, various computer courses, facilitation skills, iwi protocol, presentation skills and report writing. (Auckland Regional Council, 2005, p.75)

Overall, ‘education programs’ were disclosed well by the majority of local authorities despite the stakeholder panel only attaching minor importance to the disclosure of this item.

6.2.3.3 Vocational Qualifications

This item is related to non-academic qualifications held by employees. Disclosure of ‘vocational qualifications’ was considered to be of only minor importance by the stakeholder panel. This level of importance was reflected in the results of disclosure with 73% of local authorities not disclosing any information about vocational qualifications. Auckland City Council, Hauraki District Council, Upper Hutt City Council, Wanganui District Council, Waikato District Council and Horizons Regional Council represented the 7% of local authorities that scored a maximum of five out of five for this item.

Hauraki district council provided the following disclosure of their technically qualified staff:

The Council employs a number of technically qualified staff in such areas as water, wastewater, planning, inspection, roading and a range of other Council activities (Hauraki District Council, 2005, p.17).

Stratford District Council made the following disclosures regarding the competency of its staff:

All staff are fully trained, or in the process of being trained for all travel and AA services provided at the Centre (Stratford District Council, 2005, p.69).

Details of educational/academic qualifications held by staff were not considered to be part of the item ‘vocational qualifications’. However, a number of councils including

Auckland City Council and Waitakere City Council provided the qualifications of their executive management teams and/or the elected representatives. Many councils including North Shore City Council and Thames-Coromandel District Council provided the names of their staff who were Justices of the Peace.

6.2.3.4 Work-related Knowledge

Disclosure of 'work-related knowledge' was considered to be of minor importance by the stakeholder panel. Disclosure of this item was low, with 66% of local authorities not making any disclosures and 22% making only narrative disclosures. Palmerston North City Council, Tauranga City Council, and Taranaki Regional Council represented the 4% of local authorities that achieved a maximum score of five out of five.

Gore District Council made only a superficial narrative reference to the work-related knowledge of its staff:

...skilled and knowledgeable staff to help people find the information they need (Gore District Council, 2005, p.20).

Similarly, Waikato District Council provided the following brief disclosures regarding the preparation of internal reports:

Internal reports are prepared by suitably qualified and experienced staff (Waikato District Council, 2005, p.41).

Waitakere City Council states the following regarding its staff:

Council attracts professionals with diverse talents and skills to the City and enriches its human resource base with creative and innovative capabilities, which in turn generate wider benefits to the local community (Waitakere City Council, 2005, p. 14).

Whangarei District Council made the following statements about ensuring their staff have the right technical expertise for the job:

A challenge for the Whangarei District Council is finding and retaining the right people. To ensure we have a global pool of talent to choose from, particularly for roles requiring technical expertise (civil engineers, planners and environmental health officers), the Whangarei District Council advertises through national print media and internationally via its' website (Whangarei District Council, 2005, p.16).

6.2.3.5 Cultural Diversity

Disclosure of 'cultural diversity' relates to demographic information about the staff of local authorities. This item was considered to be of intermediate importance by the stakeholder panel, yet 72% of local authorities made no disclosures of this item in their annual reports. The remainder of the local authorities' disclosure levels were spread fairly evenly between disclosure scores of two and five out of five.

Manukau City Council commented on the cultural diversity of its workforce while talking about its ACC Tertiary Accreditation⁶ status:

...this allows Council to provide a safe and healthy working environment for its culturally diverse workforce and equally (given the diverse nature of its responsibilities and accountabilities) over a large multicultural metropolitan population (Manukau City Council, 2005, p.39).

6.2.3.6 Entrepreneurial Innovativeness

Entrepreneurial innovativeness refers to cost-minimisation relating to council activities. Despite being considered as very important by the stakeholder panel, disclosures of 'entrepreneurial innovativeness' were not made by 91% of local authorities. Only 4% achieved the maximum score of three for this item.

Thames-Coromandel District Council made the following statement about cost-minimisation:

Council will continue to provide cost effective governance and services (Thames-Coromandel District Council, 2005, p.36).

Waitomo District Council analyse variances to control costs:

Monitoring of actual activity volume to expected volume is a key operational management device for controlling costs (Waitomo District Council, 2005, p.50).

6.2.3.7 Equal Employment Opportunities

The item 'Equal Employment Opportunities' (EEO) relates to details of policies local authorities have to ensure all potential employees have an equal opportunity to be hired, and that all existing employees do not experience discrimination in their current roles. This item was considered of intermediate importance for disclosure by the stakeholder

⁶ New Zealand Accident Compensation Corporation (ACC) Workplace Safety Management Practices Scheme.

panel. Disclosure of EEO policies exceeded the stakeholder expectations with 39% of local authorities presenting an EEO statement that achieved a score of five out of five. Fifty six percent of local authorities did not present any information about EEO policies.

Manawatu District Council scored a total of five out of five for their disclosure of their EEO policy. The following is an extract of their policy which spanned half a page:

The Manawatu District Council is committed to developing equal opportunities for current and future employees. The Council believes fair employment practices are essential for an efficient and effective workforce to be maintained. Staff will be recruited, appointed, trained and promoted on the basis of their paid and unpaid work experience, ability, skills and future potential (Manawatu District Council, 2005, p.118).

Waitomo District Council also provided excellent information regarding their EEO policy. An extract of their policy is shown below:

Waitomo District Council prides itself on being an Equal Opportunity Employer. We have set ourselves several objectives and targets as performance measurement criteria. The Council believes that it has to provide leadership and also be a model to the District in this regard (Waitomo District Council, 2005, p.14).

The policy also included a table showing the percentage achievement of various targets (Table 6.4).

Table 6.4 Waitomo District Council EEO policy achievements

Objectives	Targets	Result
To foster a positive climate in the workplace aimed at encouraging employees to develop their potential and to remove discriminatory barriers to employment.	No complaints upheld	100% successful
All employment policies and practices will have regard to the Treaty of Waitangi and will comply with the provisions of the Human Rights Act 1993, the Equal Pay Act 1972 and the Employment Relations Act 2000 and other relevant statutes.	No complaints upheld	100% successful

Objectives	Targets	Result
Employment decisions will continue to be made solely upon merit, qualifications and work history relating to the position to be filled.	No complaints upheld	100% successful
Opportunities for training, transfer and promotion will be made available to all employees.	No complaints upheld	100% successful
To promote a workplace free of discrimination and harassment.	No complaints upheld	100% successful

Source: Waitomo District Council (2005, p.14).

6.2.3.8 Executive Compensation Plans

‘Executive compensation plans’ refers to disclosure of employee remuneration or benefit plans paid to employees. As mentioned earlier in the section disclosure of ‘executive compensation’ is a legislated requirement and a financial reporting requirement. The stakeholder panel considered disclosure of this item to be very important. In order to obtain scores for this item, the disclosure instrument only considered disclosures outside of the financial statements as it was focused on assessing voluntary disclosures. Only 21% of local authorities provided this information outside of the financial statements. Kapiti Coast District Council, Manawatu District Council, Ruapehu District Council, Wanganui District Council, Gisborne District Council, Tasman District Council, Auckland Regional Council and Environment Waikato represent the 9% of local authorities who provided monetary information about employee remuneration which scored five out of five.

6.2.3.9 Training Programs

Training programs refers to programs provided by the local authority to its staff. Disclosure of this item was considered of only minor importance by the stakeholder panel. Despite this, 65% of local authorities provided some disclosure about ‘training programs’ and 48% achieved the maximum score of five out of five.

The majority of the disclosures by local authorities regarding ‘training programs’ related to Civil Defence training provided to staff. Kaikoura District Council provides a good example of a disclosure which scored five out of five:

Training of staff is undertaken annually, plus the entire district works together in at least one major exercise per year, in conjunction with local, regional and

national Civil Defence Emergency Management organisations (Kaikoura District Council, 2005, p.93).

Other disclosures of 'training programs' included further educational training to up-skill staff. Environment Canterbury scored five out of five for the following disclosure of its training and development policy:

Training and development: training and development opportunities are identified individually with each staff member as part of their performance appraisal. An allocation of 30 hours training and development is made per employee (Environment Canterbury, 2005, p.111).

Tauranga City Council also discussed their staff training policy:

Individual staff training needs are to be determined under the performance planning system to ensure that all staff have equal access to training that meets their needs in order to succeed within the organisation (Tauranga City Council, 2005, p.23).

6.2.3.10 Union Activity

Disclosure of 'union activity' related to information of union involvement by employees of the local authorities. This item was considered to be of only minor importance by the stakeholder panel. This low level of importance was reflected in the actual level of disclosure. Ninety percent of local authorities did not make any disclosures regarding this item. North Shore City Council, Rotorua District Council, Wellington City Council, and Taranaki Regional Council represent the 5% of local authorities which achieved a maximum of five out of five for this item.

Taranaki Regional Council received the maximum score of five out of five for their disclosures of union activity:

Ninety-six permanent staff were employed by the Council at 30 June 2005. Ninety-one percent were employed under the Taranaki Regional Council Collective Employment Agreement, with the balance employed on individual agreements. Staff employed under the collective agreement are represented by the Taranaki Regional Council Officers Staff Association Incorporated. There were no disputes or personal grievances which triggered the "employment relationship problems" provisions of the Taranaki Regional Council Collective Employment Agreement during the period (Taranaki Regional Council, 2005, p.71).

6.2.4 Discussion

The disclosures in the annual reports of local government provide an important means of communication between local authorities and their stakeholders. The reports also provide a means of discharging accountability through the presentation of the results of the financial year so that stakeholders can judge the performance of their local authorities (Burritt & Welch, 1997; Steccolini, 2004).

The information needs of stakeholders have been considered in this chapter by comparing annual report disclosures of local government with what is deemed important by local authority stakeholders. The results indicate that many items of information which stakeholders believe to be important are not adequately being disclosed. These ‘gaps’ in reporting present an opportunity for the local government sector to improve their annual reports in order to meet the expectations and information needs of their stakeholders. The main areas that local authorities should focus on according to the stakeholder panel are:

- Disclosure of intellectual property (intermediate importance);
- Ratepayer demographics (very important);
- Disclosure of brands (intermediate importance);
- Licensing agreements (intermediate importance);
- Entrepreneurial innovativeness (very important); and
- Executive compensation plans (very important).

As discussed in Chapter Five, the disclosure index was developed by incorporating the opinions of a stakeholder panel by way of a weighting system. The annual reports were carefully evaluated and scored against this disclosure index. At this point it is useful to reflect on the appropriateness of the index and individual items within the index. In doing so, there are only a few changes that need to be made to the index in order to refine it for further research. There are four areas where adjustment to the information in the index is appropriate:

- Addition of a category entitled ‘academic qualifications’ or similar. Currently the disclosure index only measures disclosure vocational (non-academic) qualifications held by employees.

- ‘Know-how’ and ‘work related knowledge’ would be more suitable as one item to avoid repetition in coding, as they essentially cover the same information.
- Removal of the item ‘executive compensation plans’ because disclosure is required by the *Local Government Act 2002* and the accounting standards, NZ IAS 1 *Presentation of Financial Statements* and NZ IAS 19 *Employee Benefits* and NZ IAS 24 *Related Party Disclosures*.
- The quality measure of 0-5 was not entirely appropriate. The scale placed a higher importance on quantitative disclosure which scored four or five, while qualitative disclosure only score a maximum of three out of five. In some cases, it was found that the narrative descriptions of certain intellectual capital items were more informative and fostered greater understanding than would have been achieved had quantitative measures been disclosed. It was also difficult to adhere strictly to the quality measure of 0-5. This six-point scale provided a wide range of possible scores, and often there was difficulty in deciding whether the disclosure of an item fulfilled the criteria of a level four or level five score. Furthermore, the 0-5 quality measure lacks a method to distinguish between annual reports with varying depths of disclosure. For example, a local authority may score the maximum mark for a particular disclosure regardless of whether it disclosed a page or a paragraph. This problem may be over come by setting a ‘best practice standard’ for each item, and rating the annul reports in accordance with this standard.

However, despite these limitations, the index was considered to be a useful tool to gauge the current level of intellectual capital disclosures by local authorities in New Zealand. The next section analyses the final scores of the local authorities and determines whether any correlations between the final scores and the type of local authorities or the size of local authorities exist.

6.3 FINAL SCORES: CATEGORY AND TOTAL SCORE

This section presents the scores for each category of IC for each local authority. The final score for each local authority’s annual report as a whole is also given.

The **category score** is obtained as follows. The allocated score (raw mark) for each item is multiplied by the weighting for the importance of the item. This gives a weighted score. The category score, which is expressed as a percentage, is the sum of these scores divided by the possible total for all applicable items in that category for that local authority.

The **final score** is calculated as follows. The final score is a percentage of the total possible weighted score for all applicable intellectual capital items.

The results for one local authority, Manukau City Council, are shown in Table 6.5 on the next page to demonstrate the calculation of scores described above.

Using item 1.2 ‘Management philosophy’ as an example, the mark allocated to Manukau City Council for disclosure of this item is the maximum mark of three (out of three). This mark is multiplied by the weighting for the importance of the item (2.7) to give a weighted mark of 8.1 which is 100% of the possible mark. The score for the first category ‘internal capital’ is 89% and this score is shown in the following tables. The final score for Manukau City Council’s annual report as a whole was 76%, which is shown in the last line of the table.

Table 6.5 Annual reporting model: results 2005

			Manukau City Council					
			Raw Mark			Weighted Mark		
1.0	Internal Capital	Weighting	Max score	Score	%	Max Score	Score	%
1.1	Intellectual property	2.3	3.0	0	0%	6.9	0.0	0%
1.2	Management philosophy	2.7	3.0	3	100%	8.1	8.1	100%
1.3	Management processes	2.1	3.0	3	100%	6.4	6.4	100%
1.4	Corporate culture/ values	2.5	3.0	3	100%	7.5	7.5	100%
1.5	Information/networking systems	1.5	5.0	5	100%	7.5	7.5	100%
1.6	Financial relations	3.0	5.0	5	100%	15.0	15.0	100%
1.7	Promotional tools	1.6	5.0	5	100%	8.2	8.2	100%
Category Score			27.0	24	89%	59.6	52.8	89%
2.0	External Capital							
2.1	Brands	1.7	5.0	0	0%	8.6	0.0	0%
2.2	Ratepayer database	0.9	5.0	0	0%	4.6	0.0	0%
2.3	Ratepayer demographics	2.6	5.0	5	100%	12.9	12.9	100%
2.4	Ratepayer satisfaction	3.3	5.0	5	100%	16.4	16.4	100%
2.5	Backlog work	2.5	5.0	5	100%	12.5	12.5	100%
2.6	Distribution channels	1.8	5.0	5	100%	8.9	8.9	100%
2.7	Joint ventures/ collaborations	3.1	5.0	5	100%	15.7	15.7	100%
2.8	Licensing agreements	1.9	5.0	0	0%	9.3	0.0	0%
2.9	Quality standards	2.6	5.0	5	100%	12.9	12.9	100%
Category Score			45.0	30	67%	101.8	79.3	78%
3.0	Human Capital							
3.1	Know-how	1.2	3.0	2	67%	3.6	2.4	67%
3.2	Education programs	1.4	5.0	5	100%	7.1	7.1	100%
3.3	Vocational qualifications	1.2	5.0	0	0%	6.1	0.0	0%
3.4	Work-related knowledge	1.3	5.0	3	60%	6.4	3.9	60%
3.5	Cultural diversity	1.6	5.0	5	100%	8.2	8.2	100%
3.6	Entrepreneurial innovativeness	2.7	3.0	2	67%	8.1	5.4	67%
3.7	Equal Employment Opportunities	1.9	5.0	5	100%	9.6	9.6	100%
3.8	Executive compensation plans	2.9	5.0	2	40%	14.3	5.7	40%
3.9	Training programs	1.4	5.0	5	100%	6.8	6.8	100%
3.1	Union activity	1.3	5.0	0	0%	6.4	0.0	0%
Category Score			46.0	29	63%	76.8	49.2	64%
FINAL SCORE			118.0	83.0	70%	238.2	181.3	76%

6.3.1 Weighted vs. Unweighted Scores

As indicated earlier, a weighted score and unweighed score for internal capital, external capital, human capital and overall score was calculated for each local authority. To determine whether the inclusion of stakeholder weightings had a significant effect on the scores of each local authority, it had to be determined whether there were any statistically significant differences between the weighted and unweighted scores. A

Kolmogorov-Smirnov test of normality (Field, 2000) on the data established that the weighted and unweighted scores were normally distributed which enabled a paired-samples t-test to be carried out. The weighted and unweighted scores, the Kolmogorov-Smirnov and the paired samples t-test are presented in Appendix J. The paired t-test showed that there *was* a statistically significant difference at $p = 0.05$ between the weighted and unweighted scores.

This difference can be explained by analysing the construction of the disclosure index weightings. The stakeholder panel placed different weightings on items depending on what individual members of the panel considered the level of importance of disclosure to be. A local authority that achieves high quality scores for items that are considered to be important will achieve an overall higher score than if they were to disclose high quality scores for items that are not considered important. By using the weighted disclosure scores, the intellectual capital disclosures of local authorities can be measured against standards that reflect opinions of what local government stakeholders believe should be included in annual reports. The weighted scores were used in the remainder of the results analysis.

Final presents the final weighted scores for each local authority arranged from highest to lowest.

Table 6.6 Final scores: highest to lowest

Local Authority	Internal Capital	External Capital	Human Capital	Final Score
Manukau City	89%	78%	64%	76%
Manawatu District	73%	81%	54%	70%
Rotorua District	76%	81%	51%	70%
North Shore City	83%	65%	66%	70%
Palmerston North City	86%	65%	58%	68%
Hutt City	83%	75%	43%	66%
Upper Hutt City	70%	78%	47%	66%
Wanganui District	83%	53%	67%	65%
Auckland City	63%	75%	53%	65%
Waitomo District	57%	80%	49%	65%
Kapiti Coast District	89%	73%	34%	64%
Masterton District	78%	70%	43%	64%
Tauranga City	70%	69%	51%	63%
Mackenzie District	84%	69%	38%	63%
Hamilton City	89%	81%	18%	63%
Auckland Region	83%	53%	58%	62%
Thames-Coromandel District	81%	59%	51%	62%

Local Authority	Internal Capital	External Capital	Human Capital	Final Score
Southland District	73%	65%	46%	61%
Rangitikei District	73%	79%	25%	60%
South Waikato District	81%	70%	29%	60%
Nelson City ■	70%	54%	31%	59%
Whangarei District	78%	70%	28%	59%
Christchurch City	76%	60%	42%	58%
Queenstown Lakes District	81%	70%	25%	58%
Wellington City	89%	53%	40%	58%
Waitakere City	63%	64%	43%	57%
Waikato District	62%	65%	40%	56%
Central Otago District	46%	84%	25%	56%
Environment Waikato ▲	81%	37%	58%	55%
Timaru District	70%	59%	36%	54%
Taupo District	67%	73%	19%	54%
Tararua District	67%	73%	19%	54%
Rodney District	83%	63%	19%	54%
Kaipara District	75%	60%	29%	54%
Waitaki District	81%	70%	11%	54%
Otorohanga District	83%	44%	42%	53%
Dunedin City	76%	69%	14%	53%
Napier City	68%	74%	14%	53%
Central Hawkes Bay District	70%	61%	28%	53%
Stratford District	83%	54%	25%	52%
Franklin District	43%	65%	41%	52%
Gisborne District ■	63%	60%	31%	52%
Environment Southland ▲	89%	42%	35%	51%
Kaikoura District	75%	64%	16%	51%
Tasman District ■	62%	70%	40%	51%
Westland District	62%	69%	16%	50%
Horizons Manawatu ▲	89%	52%	17%	50%
Ruapehu District	47%	65%	29%	49%
Environment Bay of Plenty ▲	84%	44%	28%	49%
Environment Canterbury ▲	70%	65%	9%	49%
New Plymouth District	76%	49%	26%	48%
Porirua City	75%	53%	21%	48%
Waimakariri District	78%	53%	18%	48%
Hastings District	76%	50%	21%	47%
Taranaki Region ▲	63%	33%	53%	47%
Clutha District	70%	46%	30%	47%
Gore District	60%	56%	24%	47%
Chatham Islands Council	46%	64%	20%	45%
Waimate District	71%	47%	24%	45%
Western BOP District	57%	61%	15%	45%
Carterton District	75%	41%	25%	45%
Kawerau District	76%	44%	19%	44%
Wairoa District	51%	65%	9%	44%
South Taranaki District	76%	53%	6%	43%
Hurunui District	83%	38%	19%	43%
Grey District	47%	65%	9%	42%
Horowhenua District	70%	46%	13%	42%

Local Authority	Internal Capital	External Capital	Human Capital	Final Score
Selwyn District	67%	48%	13%	41%
Otago Region ▲	56%	38%	32%	41%
Northland Region ▲	70%	37%	22%	40%
Hauraki District	50%	51%	18%	40%
Hawkes Bay Region ▲	76%	37%	15%	40%
Sth Wairarapa District	70%	47%	6%	39%
Ashburton District	55%	52%	7%	38%
Far North District	37%	57%	14%	38%
Matamata-Piako District	33%	64%	9%	38%
Opotiki District	49%	57%	3%	37%
Buller District	49%	48%	14%	37%
Waipa District	53%	42%	16%	36%
Greater Wellington ▲	49%	44%	9%	34%
Papakura District	37%	54%	4%	34%
Whakatane District	32%	44%	21%	33%

Key	
Unitary Authorities	■
Regional Authorities	▲

Internal capital consists of seven items which represents 25% of the final score. Internal capital was the highest reported category in the annual reports of local authorities. The average internal capital score was 69%. The maximum internal capital score was 89% which was achieved by five local authorities: Manukau City Council, Kapiti Coast District Council, Hamilton City Council, Wellington City Council, Environment Southland, and Horizons Regional Council. The lowest scoring local authority was Whakatane District Council with an internal capital score of 32%.

External capital consists of nine items which represents 43% of the final score. The average external capital score was 59%. The highest external capital score was 84% which was achieved by Central Otago District Council. Rotorua District Council, Hamilton City Council and Manawatu District Council were close behind with a score of 81%. The lowest score of 33% was achieved by Taranaki Regional Council.

Human capital consists of ten items which represents 32% of the final score. Human capital was the lowest reported category in the annual reports of local authorities. The average human capital score was 29%. The maximum human capital score was achieved by Wanganui District Council with a score of 67%, followed closely by North Shore City Council on 66%. The lowest score in the human capital category was just

3% by Opotiki Regional Council. Papakura District Council's human capital disclosure was the second lowest score with only 4% disclosure.

Comparative analysis

There have been no studies on the level of intellectual capital disclosure by local government in New Zealand or internationally. There have, however been a number of international studies that focus on intellectual capital (IC) disclosures by listed companies in Australia (Guthrie, Petty, Ferrier & Wells, 1999; Guthrie & Petty, 2000), Canada (Bontis, 2003), Ireland, (Brennan, 2001), Italy (Bozzolan, Favotto & Ricceri, 2003), New Zealand (Wong & Gardner, 2005), Singapore (Firer & Williams, 2005), Sri Lanka (Abeysekera & Guthrie, 2004; Abeysekera & Guthrie, 2005), Sweden (Olsson, 2001) and the UK (Williams, 2001) Table 6.7 on the next page presents a summary of the major IC disclosure studies.

Table 6.7 Intellectual capital disclosure studies

Author(s)	Year	Purpose	Country	Type of study	Sample size	Weighted	Scoring scale	IC Items	Framework	Quality
Guthrie & Petty ⁷	2000	To determine the extent of IC reporting	Australia	Content analysis	20 largest listed companies	No	0-3	24	Sveiby (1997)	Yes
Brennan	2001	To determine the level of IC disclosure	Ireland	Content analysis	11 listed companies	No	0-1	24	Guthrie & Petty (2000); Sveiby (1997)	No
Williams	2001	To determine the level of IC disclosure	United Kingdom	Disclosure index	31 listed companies	No	0-1	51	Previous IC literature (no detail given)	No
Bontis	2003	To determine the level of IC reporting	Canada	Content analysis	11,000 firms (using database keyword search)	No	0-1	39	Previous IC literature (no detail given)	No
Bozzolan, Favotto & Ricceri	2003	To determine the level of voluntary IC reporting	Italy	Content analysis	30 non-financial listed companies	No	0-2	22	Guthrie & Petty (2000); FASB (2001)	Some
Shareef	2003	To determine the level of IC reporting by football clubs	United Kingdom	Content analysis & disclosure index	19 listed professional English football clubs	Yes	0-5	52	Guthrie & Petty (2000)	Yes
Goh & Lim	2004	To study disclosure practices of companies	Malaysia	Content analysis	20 largest publicly-listed companies	No	0-1	24	Guthrie & Petty (2000); Sveiby (1997)	No
Abeysekera & Guthrie	2005	To determine the level of IC reporting	Sri Lanka	Content analysis	Top 30 publicly listed companies	No	0-1	45	Guthrie & Petty (2000)	No
Firer & Williams	2005	Investigate the association between ownership structure and IC disclosure	Singapore	Disclosure Index	390 listed companies	No	0-4	53	Guthrie & Petty (2000); FASB (2001); Bozzolan <i>et al.</i> (2003)	Yes
Wong & Gardner	2005	To determine the level of voluntary IC disclosure	New Zealand	Content analysis	60 listed companies	No	0-1	18	Guthrie & Petty (2000); Sveiby (1997)	No

⁷ This is essentially the same study as Guthrie, Petty, Ferrier & Wells (1999).

Guthrie *et al.* (1999) and Guthrie and Petty (2000) used content analysis to enquire into the IC reporting practices of the top 20 Australian listed companies as at December 1998. The coding framework consisted of 24 variables divided into three intellectual capital categories derived from Sveiby's (1997) intellectual capital framework: internal structures; external structures; and employee competence. The items were scored according to a four-point scale (0-3). Results from these studies indicate a lack of understanding by the companies studied of the key components of IC combined with inadequate definitions and inefficient management of intellectual capital. The studies showed that the main areas of intellectual capital reporting by the sample of Australian companies focused on human resources, technology and intellectual property rights, and organisational and workplace structure.

Brennan (2001) replicated the content analysis methodology adopted by Guthrie *et al.* (1999) and Guthrie & Petty (2000) to examine the extent to which 11 knowledge-based Irish listed companies adopted IC disclosure methodologies in their annual reports. Brennan (2001) used a content analysis instrument consisting of 24 intellectual capital disclosure variables arranged across three categories: internal structure, external structure, and employee competence. Items were coded using a dichotomous scale, zero for non-disclosure of the item or one for disclosure of the item. The study found that despite the companies having a substantial level of non-physical, intangible, intellectual capital assets, the level of disclosure of intellectual capital attributes by the 11 listed companies was low.

Williams (2001) used a 50-item disclosure index to measure the disclosure of IC in the annual reports of 31 UK companies listed on the FTSE 100 between 1996 and 2000. The disclosure index was similar to the intellectual capital framework proposed by Brooking (1996) which categorised IC into four components: human resources, customer, information technology, and process and intellectual property. The disclosure index was simplistic in nature and used a dichotomous scale to score disclosures (0-1). The results showed that the quantity of intellectual capital disclosure increased between 1996 and 2000. The findings also indicated that there was no systematic relationship between intellectual capital performance and the quantity of disclosure during the survey period.

Bontis (2003) conducted a content analysis of 11,000 Canadian firms to determine the level of IC disclosure in Canada. The content analysis used the *Compact D: Cancorp Plus* database to search for 39 intellectual capital terms. Bontis (2003) found that only a small proportion of Canadian firms used any of the terms in their annual reports (68/10,000). The study recognised that although IC has a very strong impact on the drivers of future earnings, it was largely ignored in financial reporting (Bontis, 2003).

Bozzolan, Favotto and Ricceri (2003) conducted a content analysis on the annual reports of 30 non-financial listed companies to determine the amount and content of IC disclosures. The study replicated and extended Guthrie and Petty's (2000) study and applied it to an Italian context. The content analysis instrument was based on Sveiby's (1997) three-category framework and contained 22 IC items arranged into three categories; internal structure, external structure and human capital. The study reported extensive disclosure of external capital, particularly information about 'customers'. The findings also suggested that industry and size were important factors in determining the amount of IC disclosure.

Shareef (2003) used a disclosure index in conjunction with content analysis to enquire into the quality and extent of IC disclosures by 19 professional English listed football clubs. The disclosure index consisted of 52 items arranged in three IC categories based on Guthrie & Petty's (2000) framework and modified to include items specific to the football industry. The disclosure index incorporated quality measurement and also weighted each item and category. The findings of the study indicate that on the whole, the components of IC were poorly reported. The external capital category was the highest scoring category followed by human capital which was consistent with previous research.

Goh & Lim (2004) conducted a content analysis on the annual reports of the top 20 publicly listed Malaysian companies. The research adopted Sveiby's (1997) framework which classified 24 IC items into three categories: internal capital, external capital, and employee competence. The annual reports were coded using a dichotomous score of 0:1. The study found that the qualitative level of intellectual capital disclosure was high; however items were not being reported quantitatively. The study also found external capital was the most disclosed of the three IC categories.

Abeyssekera and Guthrie (2005) investigated intellectual capital disclosure in the annual reports of the top 30 firms by market capitalisation listed on the Colombo Stock Exchange. The content analysis framework was based on Sveiby's (1997) IC framework, dividing 45 intellectual capital items into three categories, namely internal, external and human capital. The research indicated that the most commonly disclosed category of IC was human capital followed by internal capital, and external capital.

Firer and Williams (2005) used a disclosure index to measure the IC disclosures in the annual reports of 390 Singapore publicly traded firms in 2000. The disclosure index consisted of 53 items arranged into five categories: intellectual capital in human resources, intellectual capital in customers, intellectual capital in information technology, intellectual capital in processes, and intellectual capital in property. Disclosure was measured on a five-point scale ranging from zero to four. The study reported three main findings. First, firms that were closely held were less likely to disclose IC items than those with a more diffused ownership structure. Second, those firms with a high level of executive director ownership were less inclined to voluntarily disclose IC related information than those where executive directors had smaller holdings in the entity. Finally, government linked corporations (GLCs) were more likely to voluntarily disclose IC information than non-GLCs.

Wong & Gardner (2005) conducted a content analysis on the annual reports of 60 New Zealand companies listed on the New Zealand Stock Exchange. The content analysis coding instrument consisted of 18 intellectual capital indicators organised into three categories based on Sveiby's (1997) framework: internal capital, external capital and human capital. The intellectual capital items were scored using a three point scale from zero (no disclosure) to three (quantitative disclosure). The results of the study showed that the majority of intellectual capital disclosures were in the external capital category, followed by human capital, with internal capital items being least disclosed.

Other studies have focused on one aspect of intellectual capital reporting. Subbarao and Zeghal (1997) analysed the annual reports of publicly listed firms in six countries, namely, the USA, Canada, Germany, UK, Japan and South Korea to make an international comparison of human resource information and disclosure. A total of 120

annual reports were analysed, 20 reports from each of the six countries with 10 from the manufacturing sector and 10 from the financial services sector. The results of the study indicated that employee benefits and pensions were the most frequently disclosed information, and value added by human resources to a firm was the least frequently disclosed. The study also found that information on profit sharing was not disclosed by the firms in Japan and Korea, in contrast with the US firms who provided information in relation to stocks and stock options. Findings also indicated disclosures of employee numbers was high compared with North America and Asia. Finally, firms in Europe disclosed information on employee compensation while very few in Asia disclosed that information.

Olsson (2001) examined the annual reports of the 18 largest Swedish companies in 1998 on the basis of market capitalisation in the Swedish stock market. Content analysis was used to enquire into the extent of human capital reporting. The disclosure items were categorised into five elements: education and development; equality; recruitment; selection of employees; and comments by CEOs. The study found that the companies achieved only low levels of human capital disclosure, with many companies providing disclosures that were deficient in extent or quality.

Abeysekera and Guthrie (2004) examined human capital disclosure practices in corporate annual reports in Sri Lanka. Content analysis was conducted on the annual reports of the top 30 listed companies on the Colombo stock exchange. A modified framework based on Brooking (1996) and Guthrie and Petty (2000) consisting of 25 human capital attributes was used. The results of the study indicated that the most frequently disclosed category was external category, followed by human capital, with internal capital the least reported item.

It should be noted that there are considerable methodological differences between this study of intellectual capital disclosure of local governments and previous IC disclosure research. First, the lack of a widely accepted framework for IC measurement and disclosure has led different researchers to adopt different frameworks. For example Guthrie *et al.* (1999), Guthrie and Petty (2000), Brennan (2001), Abeysekera and Guthrie (2002; 2005), and Wong and Gardner (2005) adopt a framework based on Sveiby's (1997) three-category model, while Williams (2001) adopts the four

component framework proposed by Brooking (1996). Firer & Williams (2005) and Olsson, (2001) used modified frameworks that had five categories. The number of IC items within these frameworks also varies considerably between authors, from 18 in Wong and Gardner's (2005) study, to 53 by Firer and Williams (2005). The sample sizes used in prior content analysis studies has also varied considerably. Brennan (2001) sampled 11 companies, while Bontis (2003) conducted a database-assisted content analysis on 11,000 Canadian companies.

This research is not directly comparable with previous research into intellectual capital disclosure and reporting. This research focused on local authorities which are part of the public sector whereas previous research has focused on large companies in the private sector. The disclosure index used in this study is based on Sveiby's (1997) framework. However the framework was modified specifically to capture intellectual capital in the public sector. This does not allow item-by-item comparisons with previous research.

However, general comparisons with previous research can be made. Consistent with research by Guthrie and Petty (2000) and Guthrie *et al.* (1999), this study found that there is no consistent framework of intellectual capital reporting. This research was consistent with the findings of Wong and Gardner (2005) that found external capital to be the most often disclosed category of IC. Most previous studies found that there are generally low levels of voluntary intellectual capital disclosures in annual reports (Bontis, 2003; Brennan, 2001; Guthrie & Petty, 2000) which were consistent with the findings of this study.

Highest scoring company

The highest scoring local authority was Manukau City Council with an overall score of 76%. Manukau City Council's annual report provided a one page mission statement that was presented both in English and in Maori. The Mayor's report and the City Manager's report provided an informative discussion of the year's results in all areas of council operations which provided disclosures on a variety of different intellectual capital items. The section entitled 'Manukau People' provided much of the information in the human capital category. The Statement of Service Performance provided

extensive detail of council activities and ratepayer satisfaction for the year as well as containing most of the external capital disclosures.

Manukau City Council received a score of 89% for its internal capital disclosures. A total of six out of seven items were disclosed, all of which received maximum marks for each item. Only 'intellectual property' was not disclosed, however, this item was not disclosed by any of the other local authorities. A total of six out of nine external capital items were disclosed, with each disclosure item receiving maximum scores. This resulted in a score of 78% for the external capital section. No disclosures of 'brands', 'ratepayer database' or 'licensing agreements' were made in this section. Finally, Manukau City Council achieved a score of 64% for the human capital section. Two out of 10 items were not disclosed, 'vocational qualifications' and 'union activity' both of which were considered by the stakeholder panel to be of only minor importance.

Lowest scoring company

The lowest scoring local authority was Whakatane District Council with an overall score of 33%. In the internal capital category, only 'management processes', 'corporate culture/values', and 'promotional tools' were disclosed. This category generally produced the highest scores for most local authorities, which highlights Whakatane District Council's weakness in disclosure in this area. A total of only four items out of nine were disclosed in the external capital category: 'ratepayer demographics', 'backlog work', 'distribution channels', 'quality standards', however disclosure of these four items achieved scores of five, four, five, and five respectively. A total of 3 out of 10 items were disclosed in the external capital category: 'vocational qualifications', 'equal employment opportunities' and 'union activity' which achieved scores of three, five, and two respectively. However Whakatane District council was one of only eight local authorities to disclose any information on 'union activity'.

6.3.2 Final Scores by Local Authority Type

Previous disclosure studies have investigated whether the type of company has any effect on the level of intellectual capital disclosures (Brennan, 2001; Wong & Gardner, 2005). Although this study focuses on local government rather than listed companies, it

was thought that it would be useful to investigate the level of intellectual capital disclosures based on local authority types.

The local authorities that comprise the New Zealand local government sector are classed as being territorial authorities, regional authorities or unitary authorities (see Chapter Two, Section 3.1 for more information regarding the differences between these types). Table 6.8 on the next page shows the final weighted scores for each local authority based on their type (territorial, regional or unitary authority).

Table 6.8 Final scores by local authority type

Local Authority	Internal Capital	External Capital	Human Capital	Final Score
Territorial Authorities				
Manukau City	89%	78%	64%	76%
Manawatu District	73%	81%	54%	70%
Rotorua District	76%	81%	51%	70%
North Shore City	83%	65%	66%	70%
Palmerston North City	86%	65%	58%	68%
Hutt City	83%	75%	43%	66%
Upper Hutt City	70%	78%	47%	66%
Wanganui District	83%	53%	67%	65%
Auckland City	63%	75%	53%	65%
Waitomo District	57%	80%	49%	65%
Kapiti Coast District	89%	73%	34%	64%
Masterton District	78%	70%	43%	64%
Tauranga City	70%	69%	51%	63%
Mackenzie District	84%	69%	38%	63%
Hamilton City	89%	81%	18%	63%
Thames-Coromandel District	81%	59%	51%	62%
Southland District	73%	65%	46%	61%
Rangitikei District	73%	79%	25%	60%
South Waikato District	81%	70%	29%	60%
Whangarei District	78%	70%	28%	59%
Christchurch City	76%	60%	42%	58%
Queenstown Lakes District	81%	70%	25%	58%
Wellington City	89%	53%	40%	58%
Waitakere City	63%	64%	43%	57%
Waikato District	62%	65%	40%	56%
Central Otago District	46%	84%	25%	56%
Timaru District	70%	59%	36%	54%
Taupo District	67%	73%	19%	54%
Tararua District	67%	73%	19%	54%
Rodney District	83%	63%	19%	54%
Kaipara District	75%	60%	29%	54%
Waitaki District	81%	70%	11%	54%
Otorohanga District	83%	44%	42%	53%
Dunedin City	76%	69%	14%	53%
Napier City	68%	74%	14%	53%
Central Hawkes Bay District	70%	61%	28%	53%
Stratford District	83%	54%	25%	52%
Franklin District	43%	65%	41%	52%
Kaikoura District	75%	64%	16%	51%
Westland District	62%	69%	16%	50%
Ruapehu District	47%	65%	29%	49%
New Plymouth District	76%	49%	26%	48%
Porirua City	75%	53%	21%	48%
Waimakariri District	78%	53%	18%	48%
Hastings District	76%	50%	21%	47%
Clutha District	70%	46%	30%	47%
Gore District	60%	56%	24%	47%
Chatham Islands Council	46%	64%	20%	45%

Local Authority	Internal Capital	External Capital	Human Capital	Final Score
Territorial Authorities				
Waimate District	71%	47%	24%	45%
Western BOP District	57%	61%	15%	45%
Carterton District	75%	41%	25%	45%
Kawerau District	76%	44%	19%	44%
Wairoa District	51%	65%	9%	44%
South Taranaki District	76%	53%	6%	43%
Hurunui District	83%	38%	19%	43%
Grey District	47%	65%	9%	42%
Horowhenua District	70%	46%	13%	42%
Selwyn District	67%	48%	13%	41%
Hauraki District	50%	51%	18%	40%
Sth Wairarapa District	70%	47%	6%	39%
Ashburton District	55%	52%	7%	38%
Far North District	37%	57%	14%	38%
Matamata-Piako District	33%	64%	9%	38%
Opotiki District	49%	57%	3%	37%
Buller District	49%	48%	14%	37%
Waipa District	53%	42%	16%	36%
Papakura District	37%	54%	4%	34%
Whakatane District	32%	44%	21%	33%
MEAN	68%	62%	28%	53%

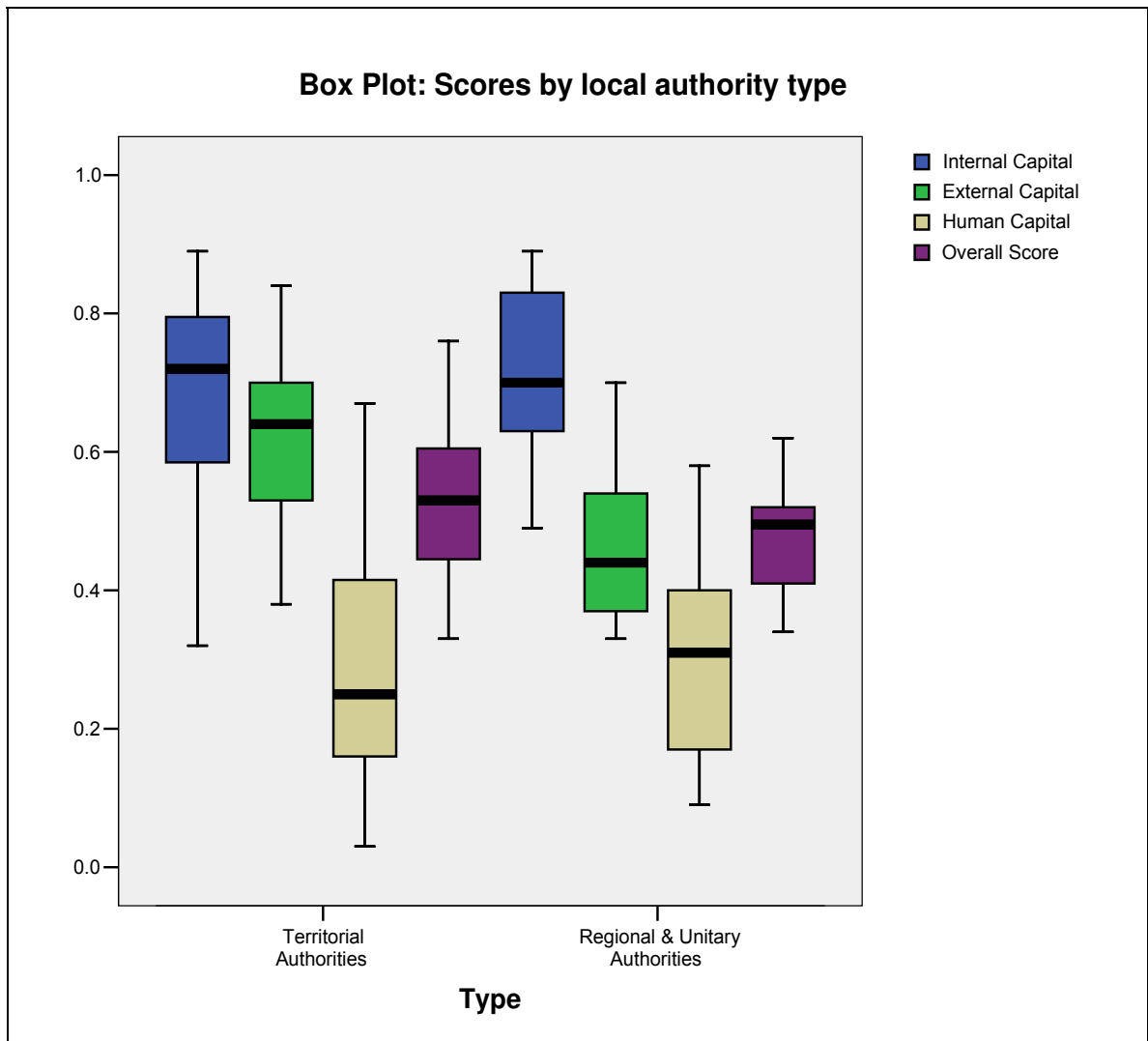
Regional and Unitary Authorities				
Auckland Region	83%	53%	58%	62%
Nelson City ■	70%	54%	31%	59%
Environment Waikato	81%	37%	58%	55%
Gisborne District ■	63%	60%	31%	52%
Environment Southland	89%	42%	35%	51%
Tasman District ■	62%	70%	40%	51%
Horizons Manawatu	89%	52%	17%	50%
Environment Bay of Plenty	84%	44%	28%	49%
Environment Canterbury	70%	65%	9%	49%
Taranaki Region	63%	33%	53%	47%
Otago Region	56%	38%	32%	41%
Northland Region	70%	37%	22%	40%
Hawkes Bay Region	76%	37%	15%	40%
Greater Wellington	49%	44%	9%	34%
MEAN	72%	48%	31%	48%

Key	
Unitary Authorities	■

For the purposes of this analysis, regional and unitary authorities were combined into one group. In order to determine if there were any statistically significant differences between the two groups of local authorities the results were analysed to determine if they were normally distributed in order for an independent t-test to be carried out. The

Kolmogorov-Smirnov test of normality (Field, 2000) indicated the data was on the whole, normally distributed (Appendix K). The data was plotted using box plots to visually compare the scores for the two groups. The box plot graph is shown in Figure 6.1.

Figure 6.1 Box plot: category and final scores by local authority type



The box plot is useful in visualising the data. The mean score of each IC category (represented by the solid black line inside each box) of internal capital (blue), human capital (tan) and the overall score (purple) appear to be similar. However the mean external capital score appears to be different between the two groups of local authorities. The box plot graph is also useful to analyse the range of the data. The two lines extending from each box represent the highest and lowest scores, so that the range

of the scores is easily seen. The range of overall scores of territorial authorities is larger than that of the regional and unitary authorities, indicating a larger spread of data.

In order to determine whether the differences in scores between the two groups of local authorities were statistically significant, an independent t-test was carried out on the mean scores (Appendix K). Results of the t-test indicate that there **is** a significant difference between the external capital scores of territorial authorities (61%) and regional/unitary authorities (48%) at ($p = 0.05$). However, there are no statistically significant differences between the internal capital, human capital and overall scores of territorial authorities and regional/unitary authorities.

6.3.3 Final Scores by Rates Value

Several previous studies have shown the level of disclosure is affected by firm size (see for example Buzby, 1975; Williams, 2001). While this research is not focused on listed companies it was thought that the size of local authorities would affect the level of intellectual capital disclosure in the annual reports.

In order to investigate whether the size of a local authority has any affect on the level of intellectual capital disclosure, the local authorities were split into two groups: 'large' and 'small' on the basis of their rates income for the 2004/2005 financial year. Rates income was used as a proxy for size because this figure was directly comparable across all local authorities. An arbitrary value of \$50million was used to differentiate between 'large' and 'small' local authorities.

The 'large' group comprised those local authorities that had rates income of \$50million or more during the 2004/2005 financial year, and the 'small' group comprised those local authorities with rates value of less than \$50million. The 'large' group was made up of 13 local authorities, with the remaining 69 local authorities allocated to the 'small' group. Table 6.9 shows the local authorities arranged by size and their corresponding intellectual capital scores.

Table 6.9 Final scores by local authority size

Local Authority	Rates Income (\$000)	Internal Capital	External Capital	Human Capital	Final Score
Large Local Authorities					
Auckland City	307,528	63%	75%	53%	65%
Christchurch City	167,901	76%	60%	42%	58%
Manukau City	166,410	89%	78%	64%	76%
Wellington City	156,370	89%	53%	40%	58%
North Shore City	125,831	83%	65%	66%	70%
Auckland Region	109,185	83%	53%	58%	62%
Waitakere City	92,880	63%	64%	43%	57%
Environment Canterbury ▲	78,839	70%	65%	9%	49%
Hamilton City	73,433	89%	81%	18%	63%
Dunedin City	68,654	76%	69%	14%	53%
Rodney District	66,172	83%	63%	19%	54%
Hutt City	65,825	83%	75%	43%	66%
Tauranga City	50,842	70%	69%	51%	63%
MEAN		78%	67%	40%	61%

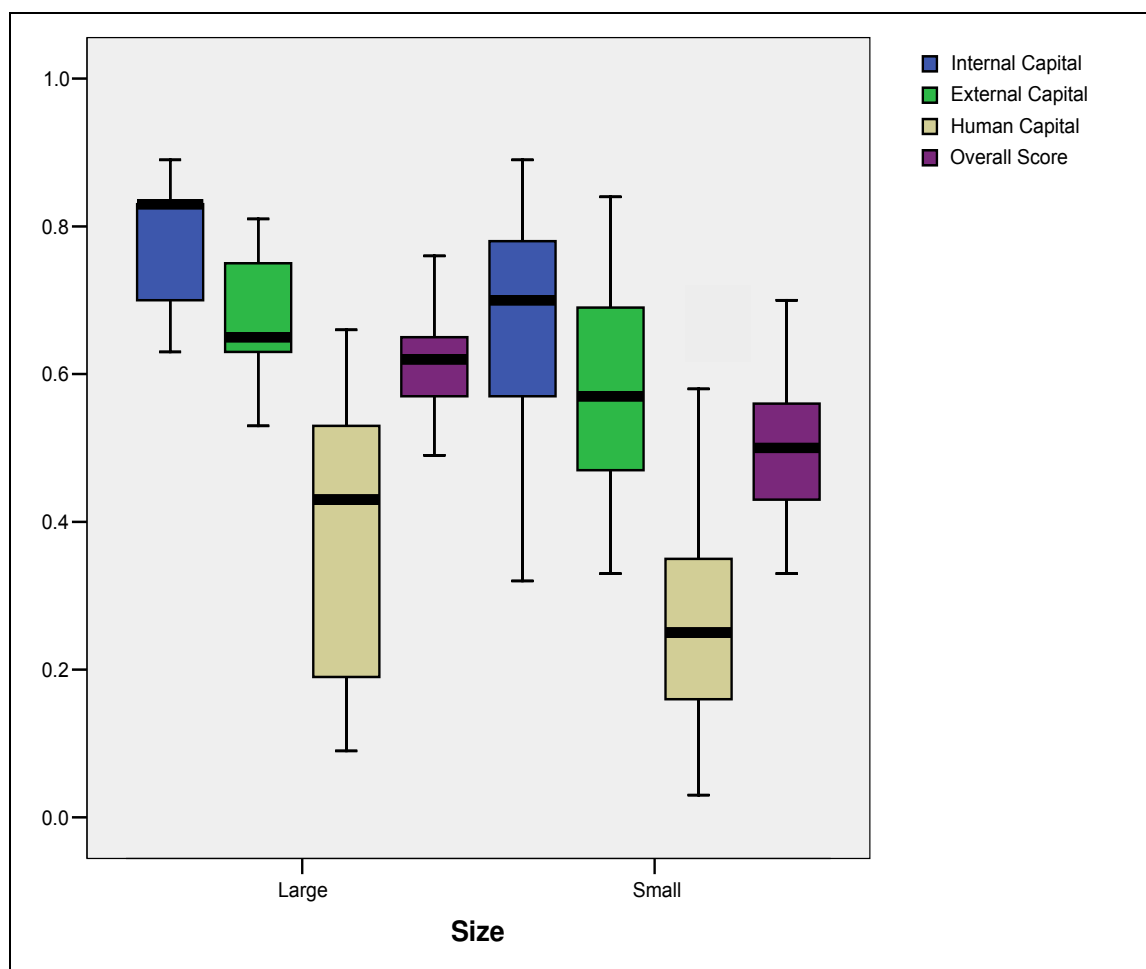
Small Local Authorities					
Environment Southland ▲	47,222	89%	42%	35%	51%
Far North District	44,851	37%	57%	14%	38%
Palmerston North City	43,498	86%	65%	58%	68%
Hastings District	43,213	76%	50%	21%	47%
Whangarei District	41,712	78%	70%	28%	59%
Environment Bay of Plenty ▲	38,725	84%	44%	28%	49%
New Plymouth District	37,125	76%	49%	26%	48%
Rotorua District	36,379	76%	81%	51%	70%
Thames-Coromandel District	35,028	81%	59%	51%	62%
Napier City	34,150	68%	74%	14%	53%
Gisborne District ■	33,710	63%	60%	31%	52%
Franklin District	32,452	43%	65%	41%	52%
Porirua City	30,468	75%	53%	21%	48%
Wanganui District	29,690	83%	53%	67%	65%
Tasman District ■	29,478	62%	70%	40%	51%
Queenstown Lakes District	28,584	81%	70%	25%	58%
Kapiti Coast District	28,010	89%	73%	34%	64%
Clutha District	26,122	70%	46%	30%	47%
Waipa District	22,872	53%	42%	16%	36%
Nelson City ■	22,677	70%	54%	31%	59%
Southland District	22,090	73%	65%	46%	61%
Timaru District	21,991	70%	59%	36%	54%
Waikato District	21,414	62%	65%	40%	56%
Upper Hutt City	20,023	70%	78%	47%	66%
Waimakariri District	19,969	78%	53%	18%	48%
South Taranaki District	19,764	76%	53%	6%	43%
Otago Region ▲	19,254	56%	38%	32%	41%
Western BOP District	19,143	57%	61%	15%	45%
Taupo District	18,404	67%	73%	19%	54%
Manawatu District	17,525	73%	81%	54%	70%
Matamata-Piako District	17,503	33%	64%	9%	38%
Waitaki District	17,401	81%	70%	11%	54%

Local Authority	Rates Income (\$000)	Internal Capital	External Capital	Human Capital	Final Score
Small Local Authorities					
Papakura District	17,323	37%	54%	4%	34%
Whakatane District	16,985	32%	44%	21%	33%
Horowhenua District	15,633	70%	46%	13%	42%
Ruapehu District	12,572	47%	65%	29%	49%
Masterton District	12,459	78%	70%	43%	64%
Selwyn District	12,324	67%	48%	13%	41%
Tararua District	12,161	67%	73%	19%	54%
Environment Waikato ▲	11,850	81%	37%	58%	55%
Central Otago District	11,561	46%	84%	25%	56%
Rangitikei District	11,276	73%	79%	25%	60%
Kaipara District	10,820	75%	60%	29%	54%
Ashburton District	10,818	55%	52%	7%	38%
Central Hawkes Bay District	9,861	70%	61%	28%	53%
South Waikato District	9,805	81%	70%	29%	60%
Grey District	8,831	47%	65%	9%	42%
Taranaki Region ▲	8,399	63%	33%	53%	47%
Gore District	8,030	60%	56%	24%	47%
Wairoa District	7,335	51%	65%	9%	44%
Otorohanga District	6,641	83%	44%	42%	53%
Waitomo District	6,504	57%	80%	49%	65%
Buller District	6,333	49%	48%	14%	37%
Horizons District ▲	6,284	89%	52%	17%	50%
Hauraki District	6,004	50%	51%	18%	40%
South Wairarapa District	5,989	70%	47%	6%	39%
Stratford District	5,868	83%	54%	25%	52%
Opotiki District	5,449	49%	57%	3%	37%
Westland District	4,830	62%	69%	16%	50%
Northland Region ▲	4,585	70%	37%	22%	40%
Waimate District	4,584	71%	47%	24%	45%
Kawerau District	4,426	76%	44%	19%	44%
Hawkes Bay Region ▲	4,382	76%	37%	15%	40%
Greater Wellington ▲	4,382	49%	44%	9%	34%
Hurunui District	4,369	83%	38%	19%	43%
Carterton District	4,172	75%	41%	25%	45%
Mackenzie District	3,586	84%	69%	38%	63%
Kaikoura District	2,101	75%	64%	16%	51%
Chatham Islands Council	299	46%	64%	20%	45%
MEAN		67%	58%	27%	50%

Key	
Unitary Authorities	■
Regional Authorities	▲

The data was subjected to a Kolmogorov-Smirnov test of normality (Field, 2000) which indicated the data was normally distributed (Appendix L). The data was plotted using box plots to visually compare the sets of scores for the two groups ('large' and 'small' local authorities). The box plot graph is shown in Figure 6.2.

Figure 6.2 Box plot: category and final scores by local authority size



The box plot shows that on the whole, the scores for the ‘large’ local authorities appear to be higher than those of the ‘small’ local authorities. In order to determine whether these differences are statistically significant an independent t-test was carried out (Appendix L). The t-test revealed that at $p = 0.05$ the ‘large’ local authorities’ scored higher than the ‘small’ local authorities for all four scores: internal capital (78% vs. 67%), external capital (67% vs. 58%), human capital (40% vs. 27%), and overall scores (61% vs. 50%).

Other research into annual report disclosures found a positive relationship between firm size and the amount of information disclosed in the corporate annual report (Cerf, 1961; Craig & Diga, 1998; Singhvi & Desai, 1971; Wallace & Naser, 1995; Zarzeski, 1996). Despite this research not being based on corporate entities, the ‘size effect’ may offer a possible explanation for the higher level of intellectual capital disclosures by local

authorities with rates value of \$50 million or more ('large' local authorities) compared with 'small' authorities. The size effect would indicate that larger local authorities would disclose more information than small local authorities, which appears to be the case in this research.

6.3.4 Correlations

The overall scores of the local authorities were analysed to determine if there were any relationships between the level of intellectual capital disclosures (Final Score) and the variables:

- Population of the local authority; or
- Rates revenue; or
- Total asset value; or
- Number of pages of the annual report.

The Pearson Correlation (r) and R^2 values were determined for each variable (Appendix M). The correlation analysis revealed that Rates Revenue ($r = 0.436$), Total Assets ($r = 0.405$) and Number of Pages ($r = 0.482$) are significantly correlated to Final Scores.

The R^2 value is useful for explaining the how much of the variability in one variable can be explained by the other variables (Field, 2000). In this case, rates revenue accounts for 19.0% of the variation in overall scores, total assets accounts for 16.4% of the variation in overall scores, and number of pages accounts for 23.2% of the variation in overall scores.

Partial correlations are useful to determine the effect of a variable on another variable, without interference of a third variable (Field, 2000). For example, when rates revenue is controlled, the effect that total assets and number of pages has on the final score can be determined. When partial correlations are performed on the final intellectual capital scores (Appendix M), number of pages only contributes to 10.3% of the variability in overall scores (previously calculated at 23.2%), and rates revenue reduces to 5.3% (previously 19.2%) and total assets to 4.2% (previously 16.4%). However, despite this reduction in the strength of the relationship between the variables, the relationship is still considered statistically significant.

In summary, there appears to be a positive relationship between the level of intellectual capital disclosure and the number of pages, rates revenue and total assets. As the number of pages of the annual report increases, the level of intellectual capital also increases. Similarly, the higher the rates value or the larger the total assets of the local authority, the higher the level of IC disclosure in the annual report. Intellectual capital disclosure levels are not related to the population of the local authorities.

6.4 SUMMARY

This chapter has reported and discussed the results obtained from a comprehensive analysis of IC disclosures in the 2004/2005 annual reports of 82 local authorities in the New Zealand local government sector. The results were analysed item-by-item in order to compare the mean scores allocated for the extent and quality of information with the mean level of importance as perceived by the stakeholder panel. The analysis highlighted a possible information gap between stakeholder expectations and local authority annual report disclosures in the following items.

Information that was regarded as ‘very important’ for disclosure by local government stakeholders included:

- Intellectual property
- Licensing agreements

Information that was regarded as ‘intermediate’ importance for disclosure by local government stakeholders included:

- Ratepayer demographics
- Entrepreneurial innovativeness
- Executive compensation plans

Further analysis identified the top three annual reports in respect of the highest level of disclosure according to the quality standards incorporated in the disclosure index. The top report was Manukau City Council with a score of 76% followed by Manawatu District Council, Rotorua District Council and North Shore City Council each with a score of 70%. The lowest scoring report was Whakatane District Council with a score

of 33%, followed by Greater Wellington Regional Council and Papakura District Council each with a score of 34%.

It was found that 'large' local authorities with rates income of \$50million or more disclosed significantly more internal capital, external capital, human capital, and overall intellectual capital information than 'small' local authorities with rates income of less than \$50million. The results also indicated that territorial authorities disclosed significantly more information in the external capital category than regional or unitary authorities.

Correlation analysis revealed a positive relationship between the total rates income of the local authorities and their level of disclosure. A positive relationship was also found between total assets of local authorities and the level of intellectual capital disclosures. Total assets and total rates income can both be considered proxies for 'size'. The existence of the correlation between size and level of intellectual capital disclosure further supports the findings that 'large' authorities disclosed more intellectual capital information than 'small' local authorities.

This research has identified a gap between what intellectual capital information stakeholders consider should be disclosed and what is actually disclosed by local authorities in their annual reports. Improved disclosure to meet the levels expected by stakeholders would contribute significantly to the accountability discharge function of annual reports, and ensure that stakeholders receive the information they are currently not receiving from their local authorities.

The next chapter will provide a summary and conclusion of the research, as well as provide recommendations in light of the findings of this research.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS & FUTURE RESEARCH

7.1 INTRODUCTION

This chapter provides a review of the thesis. It summaries the research objectives, the way in which they were achieved, and makes recommendations for improving the quality of intellectual capital annual report disclosure in the New Zealand local government sector. This is followed by an assessment of the importance of the research and the opportunities for further research presented by the findings.

7.2 REVIEW

Interest in intellectual capital measurement and reporting was sparked in the late 1980s as practitioners became increasingly dissatisfied with the ability of existing accounting frameworks to adequately address measurement and recognition of the emerging knowledge-based value drivers in the economy. These traditional financial accounting frameworks were based on solid, conservative principles that dealt with objective reporting of historical, cost-based tangible assets (Flamholtz, Bullen & Hua, 2002) and it was argued, were not well-equipped to deal with intangible assets.

It was during this time that a small number of organisations including Skandia, Rambøll, SIFO, the Dow Chemical Company and GrandVision led by two prominent authors Karl Sveiby and Leif Edvinsson sought to address the shortcomings in the traditional financial accounting system, and develop frameworks and models that could be used to measure and report intellectual capital. Scholarly contributions that began to analyse and use the potential offered by IC reporting (Bontis, Dragonetti, Jacobsen & Roos, 1999; Bounfour, 2003; Brooking, 1996; Edvinsson & Malone, 1997; Guthrie, Petty & Johanson, 2001; Petty & Guthrie, 2000; Sveiby, 1997) in the late 1990s.

A number of competing and diverse frameworks for the measurement, management and disclosure of intellectual capital exist in the current literature (Hunter, Webster & Wyatt, 2005; Kaufmann & Schneider, 2004). One of the most widely accepted is the *Intellectual Capital Approach* which is supported by a number of prominent authors in

the field (see for example Brooking, 1996; Edvinsson & Malone, 1997; Kaplan & Norton, 1992; Roos, Roos, Dragonetti & Edvinsson, 1997; Rodgers, 2003; Stewart, 1997; Sveiby, 1997). This approach divides intellectual capital into three components: internal capital, external capital and human capital. Different authors tend to use different labels for each of the three categories; however they are essentially referring to the intellectual capital approach.

Increasingly, empirical research has been used to support the argument that traditional accounting frameworks do not adequately reflect the true value of organisations in the knowledge economy. This has been shown by a widening of the gap between book value and market value (Stewart, 1997; van der Meer-Kooistra, 2001). Many studies to date have measured the level of intellectual capital disclosures by corporate organisations in countries such as Australia (Guthrie, Petty, Ferrier & Wells, 1999; Guthrie & Petty, 2000), Canada (Bontis, 2003), Ireland, (Brennan, 2001), New Zealand (Wong & Gardner, 2005), Singapore (Firer & Williams, 2005), Sri Lanka (Abeysekera & Guthrie, 2002; Abeysekera & Guthrie, 2005), Sweden (Olsson, 2001) and the UK (Williams, 2001). Other studies have uncovered causal links between the measurement/management and disclosure of IC and business performance (Bontis, 1998; DATI, 1998).

All of the previous studies on the disclosure of intellectual capital have focused on the voluntary disclosures in the corporate annual report. The studies conclude that the overall level of voluntary disclosure is low, however in order to ensure a company's long term success, the measurement and management of intellectual capital is crucial (DATI, 1998). The studies also show that the majority of organisations that disclose intellectual capital are doing so voluntarily. Stakeholder theory and accountability theory are used to explain the voluntary disclosures of intellectual capital in the annual reports. These theories recognise that all stakeholders have a right to be provided with information about how organisational activities impact them (Deegan & Samkin, 2004; Guthrie *et al.*, 2004). These theories postulate that managers will elect to voluntarily disclose information about their intellectual, social and environmental performance, over and above mandatory requirements, in order to satisfy the information needs of their stakeholders.

The New Zealand local government sector is characterised by a high level of accountability to stakeholders. The local government sector reforms of the late 1980s and early 1990s were set within a board framework of public accountability. This accountability relationship acknowledges the responsibility of managers and elected representatives give an account, not just to central government ministers and ratepayers, but to all those who are interested in or affected by the activities of the local authorities, including groups with non-economic relationships with the local authorities. This research claims that due to the legislative power of local authorities to rate, levy and tax, accountability is due to a range of stakeholders: employees, suppliers, government, regulatory authorities, communities and the public generally. This research promotes the ‘public interest’ concept of accountability, and recognises that there is considerable scrutiny of, and interest in the activities of local authorities. This accountability is largely discharged through the provision of information in the annual report of local authorities. The voluntary disclosure of intellectual capital in the annual report facilitates the discharge of accountability to stakeholders.

7.3 RESEARCH OBJECTIVES

The overall aim of the research was to explore the current extent and quality of intellectual capital reporting by the New Zealand local government sector. To achieve this, the research had the following objectives:

- To develop a disclosure index for assessing the extent and quality of intellectual capital disclosures in the annual reports of the New Zealand local government sector;
- To apply the index to the 2004/2005 annual reports of the local government sector in order to determine the level of current intellectual capital reporting; and
- To make recommendations about intellectual capital reporting by the New Zealand local government sector in light of the research findings.

The achievement of each of these objectives is addressed in the following section.

7.3.1 Development of the Research Instrument

Disclosure indices are a widely used tool for measuring the levels of disclosure by organisations in annual reports. Most of the research involving the use of disclosure indices has focused on identifying relationships between levels of voluntary disclosure and company characteristics such as company size. The Intellectual Capital Disclosure (ICD) index created for this research was designed to measure the extent and quality of intellectual capital disclosure in the annual reports of local authorities. It was also designed to determine if the information needs of stakeholders were being met.

An extensive literature review was conducted in order to select the intellectual capital items which would form the individual disclosure items in the preliminary index. A list of items was developed from existing literature, however, as the focus of this literature was on IC disclosure by corporate entities, some items required modification to ensure they were applicable to the local government sector. The preliminary list of IC items was sent to a panel of local government stakeholders for consideration.

The stakeholder panel was chosen from four stakeholder groups: internal citizens, external citizens, oversight agents, and report preparers. The final panel consisted of 14 members who were each asked to rate the list of intellectual capital items according to the level of importance of disclosure. These ratings were incorporated in to the final index as ‘importance weightings’ and identified areas that were considered important for disclosure by the stakeholder panel. The final index consisted of 26 items arranged into three categories: internal capital, external capital and human capital.

A measure of quality of reporting was incorporated into the final index. Each intellectual capital item was scored on a scale of 0-5 representing set levels of disclosure. Due to the narrative nature of some of the disclosure items a maximum score of three was allocated.

The process of the development of the disclosure index was structured and objective. However, disclosure indices suffer from inherent subjectivity in the assessment process. Other research using disclosure indices minimise subjectivity in scoring by using two or more coders, however, in this research that was not practicable and subjectivity was

minimised through the use of quality scoring criteria and strict coding rules to guide the coding of the annual reports.

7.3.2 Analysis and Discussion of Findings

This section reviews the application of the disclosure index and the discussion of the findings. The disclosure index was applied to the 2004/2005 annual reports of the local government sector to assess the extent and quality of intellectual capital reporting. A total of 82 reports were scored against the disclosure index which incorporated the stakeholder panel's importance weightings and the quality criteria.

The most frequently reported category of intellectual capital was internal capital with an average score of 69%, followed by external capital with a score of 59% and then human capital with an average score of 29%. The average overall score for the entire report was 52%. The most frequently reported item was 'management processes' followed by 'distribution channels', 'joint ventures/business collaborations' and 'quality standards'. The least frequently reported items were 'intellectual property', followed by 'licensing agreements', 'ratepayer database', 'entrepreneurial innovativeness' and 'union activity'.

The highest scoring local authority was Manukau City Council with a total report score of 79%. This local authority had particularly good internal capital disclosures which were reflected in a score of 89% for this section. They also had a fairly high level of external capital disclosures with a score of 78% and human capital disclosures that were well above average with a score of 64%. The lowest scoring local authority was Whakatane District Council, with a score of only 33%. They scored only 32% in the internal capital category. They achieved a higher score in the external capital category with a score of 44%. Their score of 21% for human capital disclosures was close to the average score for this category.

The results revealed several areas of intellectual capital disclosures that did not meet stakeholder expectations of disclosure. These items were considered as 'very important' or of 'intermediate importance' by the stakeholder panel, however, disclosure in the following areas was poor:

Information regarded as ‘very important’ by local government stakeholders

- Intellectual property
- Licensing agreements

Information regarded as ‘intermediate’ by local government stakeholders

- Ratepayer demographics
- Entrepreneurial innovativeness
- Executive compensation plans

The final scores were used to assess whether there was any differences in scores by local authority type and size. Local authorities were split into two groups depending on whether they were territorial, regional or unitary authorities. As there were only three authorities that were unitary authorities, it was decided to group them with regional authorities. The analysis revealed that there was a significant difference between the external capital disclosures of territorial authorities compared with regional/unitary authorities. Territorial authorities disclosed on average more information on external capital than territorial/regional authorities.

The analysis the split local authorities into two groups based on their size. Rates income for the 2004/2005 financial year was used as a proxy measure for size as this figure is directly comparable across all local authorities. Local authorities with rates income of \$50million or more were classed as ‘large’ authorities, while those with rates value of \$50million or less were classed as ‘small’ authorities. It was found that ‘large’ local authorities disclosed significantly more internal capital, external capital, human capital, and overall intellectual capital information than ‘small’ local authorities. These results supported the position of several previous studies on IC disclosure that indicated size influenced the level of disclosure (Brennan, 2001; Craig & Diga, 1998; Zarzeski, 1996).

7.4 RECOMMENDATIONS

There are a number of areas in which the level of intellectual capita disclosures of local authorities can be improved. These areas are discussed in turn below.

Internal Capital

Local authorities have disclosed a reasonably large amount of internal capital information. Areas of reporting that can be improved are disclosures of intellectual property (details of patents, copyrights and trademarks held by local authorities). This was an area that was considered very important by stakeholders which was not met by the actual level of disclosure.

External Capital

While this category of IC was disclosed reasonably well on average, stakeholders' expectations on reporting are not being met in certain areas. Information relating to 'ratepayer demographics' was poorly and requires improvement if it is to meet stakeholder expectations. Information regarding 'licensing agreements' (refers to licensing agreements held by the local authority) were considered to be very important for disclosure, yet this was also poorly disclosed with 98% of local authorities not making any disclosures at all. A significant improvement needs to be made in the disclosures of licensing agreements in order to meet with stakeholder expectations.

Human Capital

This category of intellectual capital was poorly reported overall and all items in this category need improvement. Disclosure of the item 'entrepreneurial innovativeness' (employee focus on cost-minimisation) in particular, was very poorly reported and did not meet stakeholder expectations. Similarly, disclosure of 'vocational qualifications' (non-academic qualifications held by employees) also needs improvement.

7.5 LIMITATIONS

The exploratory nature of this research and the use of a disclosure index to measure disclosure levels lead to inherent subjectivity in a number of areas of this study. There is a certain amount of subjectivity in:

- Selecting items for disclosure
- Weighting the disclosure items for their relative importance
- Developing criteria for assessing the quality of the disclosures
- Scoring the annual reports

Hooks (2000), Hooks, Coy and Davey (2002) and Marston and Shrives (1991) acknowledge subjectivity in, and difficulty of, constructing a disclosure index. In this research, there was difficulty in selecting the items to include in the disclosure index due to the lack of prior literature relating specifically to intellectual capital disclosure by the local government sector. The disclosure items for the index were selected from previous intellectual capital disclosure studies in the corporate sector and validated by a panel of relevant local government stakeholders. The stakeholder panel was also used to determine weightings for each item. This ensured that the index placed greater emphasis on items considered important by local government stakeholders and users of the annual reports.

Previous intellectual capital annual report disclosure studies reduced subjectivity in the content analysis coding process by using two or more coders (Bozzolan, Favotto & Ricceri, 2003; Hooks, 2000; Guthrie & Petty, 2000; Wong & Gardner, 2005). Less frequently one coder is used (Shareef, 2003; Shareef & Davey 2005). According to Guthrie, Petty, Ferrier & Wells (2004), the need for multiple coders is reduced when the reliability of coding tools is ensured. Reliability is achieved by “ensuring well-specified decision categories with well-specified decision rules” (Guthrie *et al.*, 2004). It was not practicable to use two coders in this research. Instead a well-defined decision framework for coding was created and strictly adhered to throughout the analysis of the annual reports.

Despite the limitations of this study, it offers a valuable contribution to the lack of prior research in this area and provides a useful framework through which intellectual capital disclosures can be made in the annual report of local authorities in New Zealand.

7.6 FURTHER RESEARCH POSSIBILITIES

This study has revealed several interesting findings in regard to the extent and quality of intellectual capital disclosure in the annual reports of local authorities. The study is exploratory in nature, which provides much scope for extending the work that is presented in this thesis.

No prior research has been conducted on the intellectual capital disclosures by local authorities in New Zealand or internationally. This provides an opportunity to replicate this study using the local government sector from another country such as Australia or the UK as the research subject. This would allow international comparisons to be made.

This study can also be re-performed at a later date using the same sample and method. This would allow direct comparisons over time to determine any improvements (or lack of) in intellectual capital reporting by local authorities in the time since this study was conducted.

Further research needs to be undertaken that explores the *need* for intellectual capital disclosures by local government. A member of the stakeholder panel made the following statement regarding intellectual capital disclosures:

The requirements included in the Act [Local Government Act 2002] regarding what has to be included in the major planning and reporting documents (Long Term Council Community Plans, Annual Plans and Annual Reports) are more extensive than those required for commercial organisations of a similar size. For example, annual Reports for small local authorities are 80 pages or more...unless the information disclosures on intellectual capital assist the readers of the report with measuring how the local authorities have performed or are likely to perform in the critical areas of service provision then the costs are likely to exceed the benefits (Associate Director, Professional Accounting Firm).

While this study provided a preliminary investigation into the importance of intellectual capital disclosures, the question of ‘do local authorities really need to disclose intellectual capital?’ was not fully explored. This provides an interesting avenue for further investigation.

7.7 IMPORTANCE OF THE RESEARCH AND CONCLUSIONS

This research has provided an initial insight into the extent and quality of intellectual capital disclosure in the annual reports of the New Zealand local government sector. This area has been relatively unexplored in the literature to date both in terms of subject (intellectual capital reporting by local governments) and situation (in New Zealand or internationally).

The results showed that intellectual capital reporting by local authorities was varied. In addition, the disclosure is not occurring within a consistent framework for the measurement and reporting of intellectual capital. Consultation with a panel of local government stakeholders identified aspects of intellectual capital that were considered important for inclusion in the annual report. The research highlighted a number of areas that were not being adequately disclosed in the annual reports of local authorities.

This research suggests that by incorporating disclosure of intellectual capital items into the annual reports of the local government sector, the discharge of accountability to stakeholders is enhanced. The intellectual capital disclosure index used in this study can be used by local authorities as framework for future intellectual capital disclosures to ensure they are meeting the information needs of their stakeholders.

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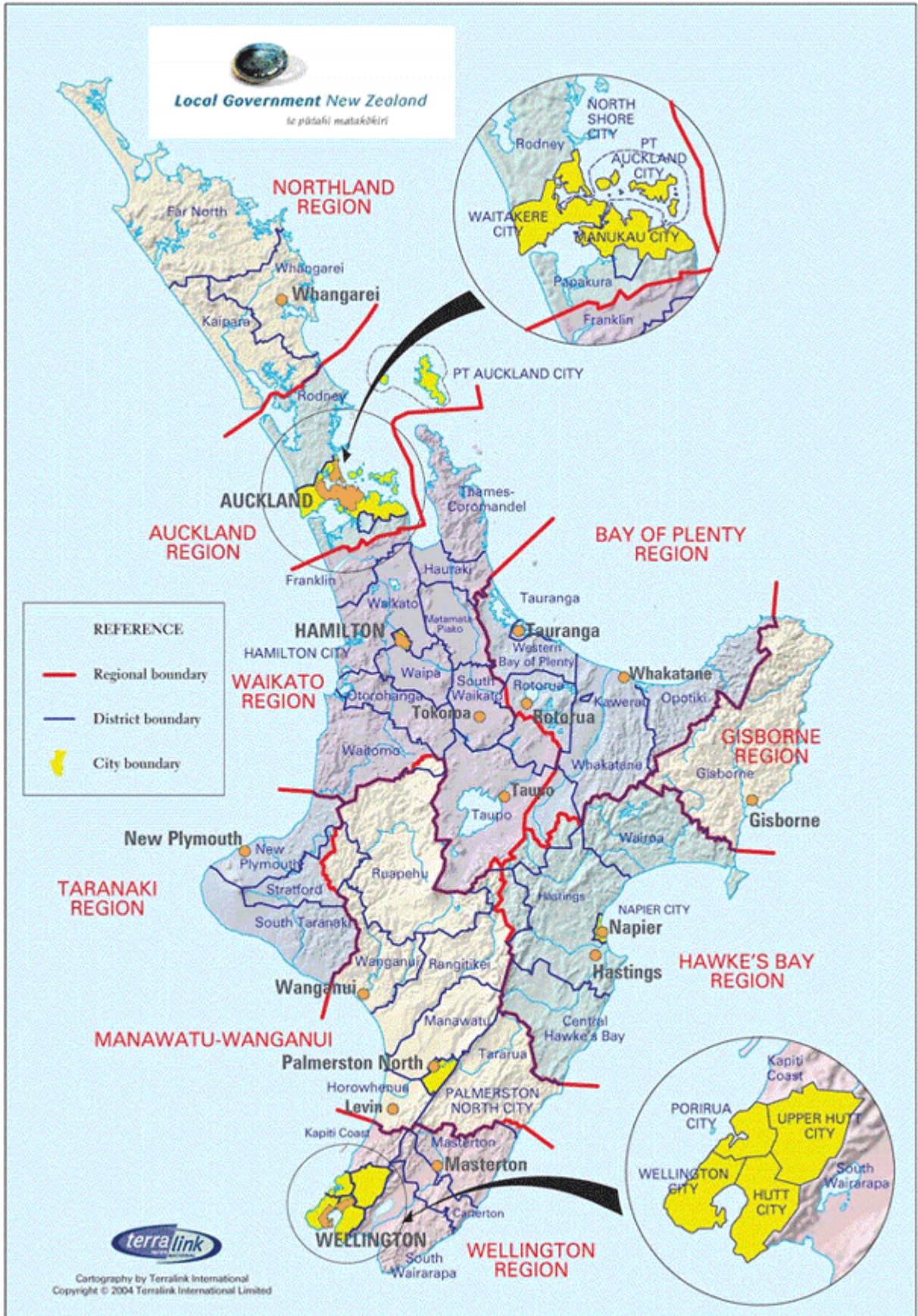
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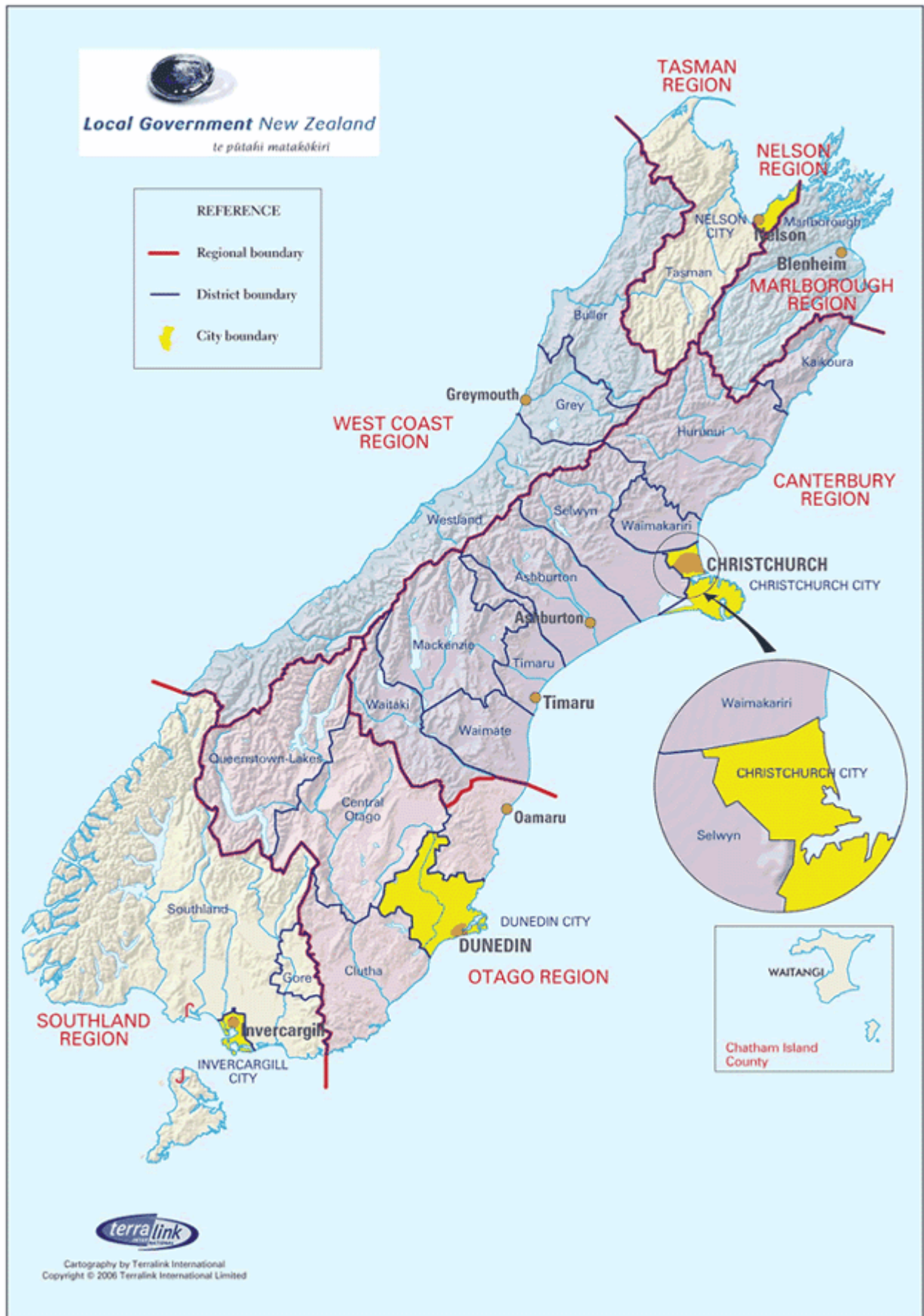
APPENDIX A

Figure 0.1 North Island map showing council boundaries



Source: <http://www.lgnz.co.nz/lg-sector/maps/north3.gif>

Figure 0.2 South Island map showing council boundaries



Source: <http://www.lgnz.co.nz/lg-sector/maps/south3.gif>

APPENDIX B

Table 0.1 Local authority population figures

Territorial Local Authorities	Population
Auckland City	380,154
Christchurch City	324,297
Manukau City	284,001
North Shore City	185,262
Waitakere City	168,465
Wellington City	167,190
Dunedin City	118,038
Hamilton City	116,223
Hutt City	95,106
Tauranga City	91,836
Porirua City	47,292
Rodney District	77,385
Palmerston North City	73,125
Whangarei District	68,478
Rotorua District	68,772
Hastings District	68,757
New Plymouth District	66,573
Far North District	58,065
Napier City	55,137
Franklin District	51,951
Invercargill City	50,118
Wanganui District	43,683
Kapiti Coast District	42,543
Timaru District	42,315
Waipa District	40,509
Papakura District	40,380
Waikato District	39,870
Western BOP District	38,478
Upper Hutt City	36,684
Waimakariri District	36,645
Taupo District	34,557
Whakatane District	32,955
Southland District	31,884
Horowhenua District	29,580
Matamata-Piako District	29,403
Thames-Coromandel Dist	28,008
Selwyn District	27,969
Manawatu District	27,393
South Taranaki District	27,222
Ashburton District	25,344
Queenstown Lakes District	25,152
South Waikato District	23,268
Masterton District	22,926
Waitaki District	20,934
Kaipara District	17,811
Tararua District	17,586
Clutha District	17,388

Territorial Local Authorities	Population
Hauraki District	16,662
Rangitikei District	15,369
Ruapehu District	15,201
Central Otago District	14,952
Grey District	13,635
Central Hawkes Bay District	12,837
Gore District	12,372
Hurunui District	10,821
Buller District	10,440
Westland District	10,371
Waitomo District	9,618
Otorohanga District	9,402
Opotiki District	9,219
Wairoa District	9,129
Stratford District	8,991
Banks Peninsula District	8,874
Sth Wairarapa District	8,754
Waimate District	7,128
Kawerau District	6,951
Carterton District	6,897
Mackenzie District	5,184
Kaikoura District	4,401
Chatham Islands Council	714
Regional Authorities	Population
Auckland Region	1,173,639
Environment Canterbury	494,952
Greater Wellington	427,545
Environment Waikato	364,986
Environment Bay of Plenty	245,100
horizons.mw	222,123
Otago Region	194,487
Hawkes Bay Region	146,109
Northland Region	144,360
Taranaki Region	102,684
Environment Southland	94,374
West Coast Region	34,464
Unitary Authorities	Population
Tasman District	44,880
Gisborne District	44,115
Nelson City	43,560
Marlborough District	42,483

Source: <http://www.lgnz.co.nz/faq/population-statistics/index.html>

(Figures as at 2001 census)

APPENDIX C

Table 0.2 Land areas for territorial authorities

Territorial Local Authorities		
Council	Hectares	Square Kilometres
Ashburton District Council	618,740	6,187
Auckland City Council	63,275	633
Buller District Council	795,509	7,955
Carterton District Council	118,013	1,180
Central Hawkes Bay District Council	332,792	3,328
Central Otago District Council	995,924	9,959
Christchurch City Council	45,197	452
Chatham Islands Council	963	963
Clutha District Council	636,286	6,363
Dunedin City Council	334,153	3,342
Far North District Council	732,386	7,324
Franklin District Council	218,794	2,188
Gisborne District Council	835,503	8,355
Gore District Council	125,162	1,252
Grey District Council	351,648	3,516
Hamilton City Council	9,427	94
Hastings District Council	521,732	5,217
Hauraki District Council	118,766	1,188
Horowhenua District Council	106,360	1,064
Hurunui District Council	866,043	8,660
Hutt City Council	37,674	377
Invercargill City Council	49,134	491
Kaikoura District Council	204,641	2,046
Kaipara District Council	311,709	3,117
Kapiti Coast District Council	73,125	731
Kawerau District Council	2,194	22
Mackenzie District Council	743,563	7,440
Manawatu District Council	262,411	2,624
Manukau City Council	68,281	683
Marlborough District Council	1,249,409	12,494
Masterton District Council	229,876	2,299
Matamata-Piako District Council	175,402	1,754
Napier City Council	10,561	106
Nelson City Council	444,354	444
New Plymouth District Council	220,931	2,209
North Shore City Council	12,981	130
Opotiki District Council	310,454	3,105
Otorohanga District Council	206,344	2,063

Territorial Local Authorities		
Council	Hectares	Square Kilometres
Palmerston North City Council	33,562	336
Papakura District Council	11,859	119
Porirua City Council	18,239	182
Queenstown-Lakes District Council	935,794	9,358
Rangitikei District Council	447,942	4,479
Rodney District Council	242,701	2,427
Rotorua District Council	261,490	2,615
Ruapehu District Council	673,019	6,730
Selwyn District Council	655,546	6,555
Southland District Council	3,097,932	30,979
South Taranaki District Council	357,546	3,575
South Waikato District Council	181,696	1,817
South Wairarapa District Council	245,734	2,457
Stratford District Council	216,335	2,163
Tararua District Council	436,056	4,361
Tasman District Council	1,453,736	14,537
Taupo District Council	695,548	6,955
Tauranga District Council	16,829	168
Thames-Coromandel District Council	229,743	2,297
Timaru District Council	273,712	2,737
Upper Hutt City Council	53,969	540
Waikato District Council	318,889	3,189
Waimakariri District Council	221,872	2,219
Waimate District Council	358,219	3,582
Waipa District Council	147,347	1,473
Wairoa District Council	411,918	4,119
Waitakere City Council	36,741	367
Waitaki District Council	72,192	7,212
Waitomo District Council	354,676	3,547
Wanganui District Council	237,266	2,373
Wellington City Council	29,011	290
Western Bay of Plenty District Council	212,068	2,121
Westland District Council	1,188,019	11,880
Whakatane District Council	444,207	4,442
Whangarei District Council	285,540	2,855

Source: <http://www.lgnz.co.nz/faq/land-area.html>

Table 0.3 Land areas for regional and unitary authorities

Regional Land Areas (including the four Unitary Councils)	
Regional Council	Hectares
Auckland	1,628,240
Bay of Plenty	2,186,358
Canterbury	5,661,187
Gisborne (unitary)	1,370,324
Hawke's Bay	2,117,773
Manawatu-Wanganui	2,531,791
Marlborough (unitary)	1,747,158
Northland	3,010,463
Nelson (unitary)	111,344
Otago	3,837,404
Southland	5,484,775
Taranaki	1,263,927
Tasman (unitary)	1,453,736
Waikato	3,460,341
Wellington	1,547,097
West Coast	3,611,668

Source: <http://www.lgnz.co.nz/faq/land-area.html>

APPENDIX D

Introductory letter to participants

Waikato Management School

Te Raupapa

11 December 2006



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Dear Sir/Madam,

I am currently undertaking research into the intellectual capital reporting of local government bodies in New Zealand as part of my master's thesis at the University of Waikato. This research aims to assess the extent and quality of intellectual capital disclosures being made in the annual reports of local government authorities. Intellectual capital reporting has gained momentum in recent years and is a relative new topic in the New Zealand literature. This study will be the first piece of research that looks specifically at intellectual capital reporting by local authorities.

I would like to invite your participation to be part of a 'stakeholder panel' that is instrumental in the construction of a disclosure index to measure the level of intellectual capital in annual reports. By incorporating your opinion as a stakeholder of local government into the disclosure index, I aim to establish whether local governments are discharging their accountability requirements with respect to intellectual capital disclosure in their annual reports.

If you are interested in participating in this research, I ask that you complete an online questionnaire. This questionnaire should take 10-15 minutes to complete and can be accessed by clicking on the following link:

<http://wms-access.mnqt.waikato.ac.nz/q4/open.dll?NAME=ANON&GROUP=ANON&SESSION=6351287638590563>

If the link doesn't open, copy and paste it into your internet browser and click 'go'.

I thank you in advance for your time and participation. Your input into this exciting research project is much appreciated. If you require any further information about the study or have queries regarding your participation, please do not hesitate to contact myself or my supervisor, Dr Grant Samkin.

If you know of any one else in your organisation who would be interested in intellectual capital reporting or local government reporting, please feel free to pass on the link to the survey.

Yours truly,
Annika Schneider

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APPENDIX E

Survey Instrument

Intellectual Capital reporting in the New Zealand local government sector

Thank you for agreeing to participate in this survey. Your responses will be used to construct a disclosure index model that will be used to determine the extent and quality of current intellectual capital disclosure in the annual reports of local government.

There has been limited research to date in the area of intellectual capital reporting by local or regional government organisations. This research aims to address this gap, and ultimately provide a 'best practice' disclosure guide that can be used by local governments as part of their annual reports.

On the next page you will see a number of intellectual capital items. For each item, please indicate using the scale provided the importance of disclosing that item in the annual report of local governments. The score is as follows:

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

As the list of items has been developed from prior research in the corporate sector, you may feel some items are not applicable to local government. Similarly, there may be items that have been omitted from the list that, in your opinion, should be disclosed to provide a more complete picture of intellectual capital available to local bodies.

If there are any items that you feel should be included, please type them in the spaces provided, and indicate their importance of disclosure by placing a number (1-4) in brackets following the item.

Once again, thank you for your time in contributing to this valuable research.

Please be assured that your anonymity will be maintained at all stages of your research participation

Age bracket

- Under 25 25 - 30 31 - 40 41 - 50 51 - 60 61 - 70
 70+

Job Title: (please type)

Type of organisation:

- a. Please select which organisation you belong to:
- (i) City, District or Regional council
 - (ii) Ratepayers association
 - (iii) Stakeholder/watchdog group
 - (iv) Auditors
 - (v) Minister/MPs/Central Government
 - (vi) Professional Accounting Firm
 - (vii) Other

if other please specify

Number of years work experience

a.

Intellectual capital is most commonly described as being the ‘knowledge’ or the ‘know how’ of an organisation. Most intellectual capital assets are intangible and are not conventionally found on the balance sheet.

A list of intellectual capital items is presented below. For each item you add, please indicate whether your opinion on its inclusion in the annual reports of local government according to the following scale:

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

Blank space has been provided for you to add any other items you feel should be disclosed. For each item you add, please indicate its importance by placing a number (according to the scale above) in brackets after the item.

Internal Capital

Refers to the knowledge embedded in organisational structures and processes the knowledge that has been captured/institutionalised within the structures, processes and culture of an organisation.

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

1. Intellectual property, (Detail of patents, copyrights, trademarks held by local authority) 0 1 2 3 4
2. Management philosophy, (As evidenced by vision/mission statements) 0 1 2 3 4
3. Management processes, (Relating to processes within local authority) 0 1 2 3 4
4. Corporate culture/values, (Comprises the attitudes, experiences, beliefs and values of the local authority) 0 1 2 3 4
5. Information/networking systems, (Details on the development, use, application and influence of information systems) 0 1 2 3 4
6. Financial relations, (Relationships between the local authority and finance providers) 0 1 2 3 4
7. Promotional tools, (Advertising the local authority does to promote its services or its region) 0 1 2 3 4

Comments and/or other (please add)

External Capital

Comprises elements of an organisation's customer relations and is the perception of value obtained by a customer from doing business with the supplier of goods or services.

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

- | | | | | | | | | | | |
|--|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|
| 1. Brands, (Details of brands associated with the local authority) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 2. Ratepayers database, (Database of all ratepayers) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 3. Ratepayer demographics, (Information relating to ratepayers) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 4. Ratepayer satisfaction, (Indicators of ratepayer satisfaction) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 5. Backlog work, (Relating to unfinished/un-started projects) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 6. Distribution channels, (Information on how local authority services/products reach users) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 7. Business collaborations/joint ventures, (That the local authority is involved with) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 8. Licensing agreements, (Held by the local authority) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 9. Quality standards, (Adherence to quality assurance programs/standards) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |

Comments and/or other (please add)

Human Capital

Refers to the set of all the knowledge and routines carried within the minds of the members of the organisation. It is the knowledge that each individual has and generates.

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Should not be disclosed	Should be disclosed but is of minor importance	Intermediate importance	Should be disclosed and is very important	It is essential to disclose this item

- | | | | | | | | | | | |
|--|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|
| 1. Know how (Employee knowledge) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 2. Employee education programs, (Education/ongoing programmes initiated by local authority) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 3. Vocational qualification of employees, (Non academic qualifications held by employees) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 4. Work-related knowledge of employees, (Gained 'on the job' or as part of ongoing training) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 5. Cultural diversity, (Demographic information of employees) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 6. Entrepreneurial innovativeness, (Focusing on cost-minimisation rather than profit-maximisation) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |
| 7. Equal Employment Opportunities, (Details of EEO programs/initiatives) | <input type="checkbox"/> | 0 | <input type="checkbox"/> | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 |

8. Executive compensation plan, (Details of executive remuneration) 0 1 2 3 4
9. Training programs, (Undertaken/provided by the local authority) 0 1 2 3 4
10. Union activity, (Details of unions representing employees) 0 1 2 3 4

Comments and/or other (please add)

If you would like to make any other comments regarding this research or on the topic of intellectual capital reporting by local governments, please feel free to detail them here:

Would you be interested in participating in a follow-up interview once the annual reports have been analysed for intellectual capital disclosure?

Yes No

If you answered Yes please provide your email address in the below field

Thank you for your time.

APPENDIX F

Follow-up email to participants

Good afternoon,

I recently contacted you regarding my Master's Thesis: Intellectual Capital Reporting by Local Governments in New Zealand. I requested your participation in an online survey to gather opinions about whether local government authorities in New Zealand should report intellectual capital information in their annual reports.

I thank you for participating in this ground-breaking research. Your help is much appreciated.

If you have yet to complete the survey please **click on the link below** to complete it now. Your participation in this survey is much appreciated, and will contribute to the current lack of literature in this area.

<http://wms-access.mnqt.waikato.ac.nz/q4/open.dll?NAME=ANON&GROUP=ANON&SESSION=6351287638590563>

If the link doesn't open, copy and paste it into your internet browser and click 'go'.

If you require any more information regarding this research, please do not hesitate to contact either myself, or my supervisor, Dr Grant Samkin.

Regards,
Annika Schneider

APPENDIX G

Table 0.4 IC annual reporting results

1.0	Internal Capital	Stakeholders														Total	Mean	Median	Mode	Adjusted Mean
		1	2	3	4	5	6	7	8	9	10	11	12	13	14					
1.1	Intellectual property	1	3	3	3	3	3	1	1	0	2	3	3	4	2	32	2.3	3	3	2.5
1.2	Management philosophy	3	4	3	2	2	3	3	2	1	3	4	3	1	4	38	2.7	3	3	2.7
1.3	Management processes	3	2	2	2	2	2	2	2	0	3	4	1	1	4	30	2.1	2	2	2.3
1.4	Corporate culture/ values	3	4	3	2	2	2	3	3	0	3	4	1	1	4	35	2.5	3	3	2.7
1.5	Information/networking systems	1	2	2	2	1	2	0	1	0	2	4	2	1	1	21	1.5	1.5	2	1.8
1.6	Financial relations	2	2	4	3	3	3	3	3	3	4	3	2	4	3	42	3.0	3	3	3.0
1.7	Promotional tools	2	1	1	2	1	2	1	1	1	3	1	2	4	1	23	1.6	1	1	1.6
	Average score in this group	2.1	2.6	2.6	2.3	2.0	2.4	1.9	1.9	0.7	2.9	3.3	2.0	2.3	2.7					
2.0	External Capital																			
2.1	Brands	1	3	2	3	3	0	0	0	0	2	1	3	4	2	24	1.7	2	0, 3	2.4
2.2	Ratepayer database	1	0	2	2	0	0	0	0	0	0	3	2	0	3	13	0.9	0	0	2.2
2.3	Ratepayer demographics	3	0	3	3	4	2	3	1	2	3	4	1	4	3	36	2.6	3	3	2.8
2.4	Ratepayer satisfaction	2	3	4	3	4	4	4	1	4	4	4	2	3	4	46	3.3	4	4	3.3
2.5	Backlog work	2	3	4	3	3	3	2	2	1	3	4	1	1	3	35	2.5	3	3	2.5
2.6	Distribution channels	1	3	3	3	2	1	1	1	0	2	4	0	1	3	25	1.8	2	1	2.1
2.7	Joint ventures/ collaborations	3	3	4	3	4	4	4	2	2	3	4	1	4	3	44	3.1	3	4	3.1
2.8	Licensing agreements	1	3	3	3	4	1	1	1	1	2	2	0	2	2	26	1.9	2	1	2.0
2.9	Quality standards	2	3	4	3	4	1	2	2	2	3	4	1	1	4	36	2.6	3	2, 4	2.6
	Average score in this group	1.8	2.3	3.2	2.9	3.1	1.8	1.9	1.1	1.3	2.4	3.3	1.2	2.2	3.0					
3.0	Human Capital																			
3.1	Know-how	1	1	2	2	2	2	0	0	1	0	2	4	0	0	17	1.2	1	2	1.9
3.2	Education programs	2	2	2	2	2	1	0	0	2	0	2	4	0	1	20	1.4	2	2	2.0
3.3	Vocational qualifications	1	1	2	1	2	2	0	0	1	0	2	4	0	1	17	1.2	1	1	1.7
3.4	Work-related knowledge	1	1	2	2	2	2	0	0	1	0	2	4	0	1	18	1.3	1	2	1.8
3.5	Cultural diversity	2	2	3	2	2	2	0	2	1	1	2	2	0	2	23	1.6	2	2	1.9
3.6	Entrepreneurial innovativeness	1	1	2	3	3	2	1	2	2	0	2	3	0	4	26	1.9	2	2	3.2
3.7	Equal Employment Opportunities	2	2	2	2	3	3	1	2	1	1	2	3	2	1	27	1.9	2	2	1.9
3.8	Executive compensation plans	3	3	4	4	2	4	1	3	3	3	3	2	1	4	40	2.9	3	3	2.9
3.9	Training programs	1	1	2	2	2	1	0	0	2	0	1	4	0	3	19	1.4	1	0, 1, 2	1.9
3.10	Union activity	0	0	2	2	2	2	0	0	1	0	1	2	2	4	18	1.3	1.5	2	2.0
	Average score in this group	1.4	1.4	2.3	2.2	2.2	2.1	0.3	0.9	1.5	0.5	1.9	3.2	0.5	2.1					

Local government stakeholder panel members

1. *Partner*: Auditing Firm, 30 yrs experience.
2. *Manager Human Capital*: Professional Accounting Firm, 20 years experience.
3. *Associate Director*: Professional Accounting Firm, 28 yrs experience.
4. *Chief Financial Officer*: Local government authority, 30 yrs experience.
5. *Professor*: University, 35 yrs experience.
6. *Financial Controller*: Local government authority, 11 yrs experience.
7. *Accountant*: Professional Accounting Firm, 12 yrs experience.
8. *Finance*: Local Government Authority, 1 yrs experience.
9. *Chief Financial Officer*: Local Government Authority, 30 yrs experience.
10. *Manager*: Stakeholder/watchdog group.
11. *Advisor*: Local Government Authority, 2 yrs experience.
12. *Systems Analyst*: Local Government Authority, 9 yrs experience.
13. *Consultant Solicitor*: Legal Firm, 5 yrs experience.
14. *Senior Policy Analyst*: Local Government Authority, 2 yrs experience.

APPENDIX H

Table 0.5 Intellectual capital disclosure model: results 2005

		Mean Score	Lowest Score	Highest Score	Frequency							% of local authorities with each score						
					0	1	2	3	4	5	total	0	1	2	3	4	5	total
1.0	Internal Capital																	
1.1	Intellectual property	0.0	0	0	82	0	0	0	n/a	n/a	82	100%	0	0	0	n/a	n/a	100%
1.2	Management philosophy	2.4	0	3	16	0	2	64	n/a	n/a	82	20%	0%	2%	78%	n/a	n/a	100%
1.3	Management processes	2.9	0	3	3	0	2	77	n/a	n/a	82	4%	0%	2%	94%	n/a	n/a	100%
1.4	Corporate culture/ values	2.7	0	3	7	0	1	74	n/a	n/a	82	9%	0%	1%	90%	n/a	n/a	100%
1.5	Information/networking systems	2.5	0	5	24	0	12	21	5	20	82	29%	0%	15%	26%	6%	24%	100%
1.6	Financial relations	4.0	0	5	9	0	6	10	3	54	82	11%	0%	7%	12%	4%	66%	100%
1.7	Promotional tools	3.7	0	5	10	0	4	20	7	41	82	12%	0%	5%	24%	9%	50%	100%
2.0	External Capital																	
2.1	Brands	0.6	0	5	68	0	2	5	1	6	82	83%	0%	2%	6%	1%	7%	100%
2.2	Ratepayer database	0.3	0	5	75	0	3	2	1	1	82	91%	0%	4%	2%	1%	1%	100%
2.3	Ratepayer demographics	1.9	0	5	38	0	10	8	16	10	82	46%	0%	12%	10%	20%	12%	100%
2.4	Ratepayer satisfaction	3.9	0	5	16	0	0	4	0	62	82	20%	0%	0%	5%	0%	76%	100%
2.5	Backlog work	2.8	0	5	24	0	2	22	9	25	82	29%	0%	2%	27%	11%	30%	100%
2.6	Distribution channels	4.7	0	5	4	0	0	3	1	74	82	5%	0%	0%	4%	1%	90%	100%
2.7	Joint ventures/ collaborations	4.5	0	5	3	0	1	10	2	66	82	4%	0%	1%	12%	2%	80%	100%
2.8	Licensing agreements	0.1	0	5	80	0	1	0	0	1	82	98%	0%	1%	0%	0%	1%	100%
2.9	Quality standards	4.4	0	5	5	0	2	6	3	66	82	6%	0%	2%	7%	4%	80%	100%
3.0	Human Capital																	
3.1	Know-how	1.2	0	3	43	0	16	23	n/a	n/a	82	52%	0%	20%	28%	n/a	n/a	100%
3.2	Education programs	3.7	0	5	14	0	1	15	7	45	82	17%	0%	1%	18%	9%	55%	100%
3.3	Vocational qualifications	0.9	0	5	60	0	8	8	0	6	82	73%	0%	10%	10%	0%	7%	100%
3.4	Work-related knowledge	1.1	0	5	54	0	5	18	2	3	82	66%	0%	6%	22%	2%	4%	100%
3.5	Cultural diversity	1.0	0	5	59	0	7	4	7	5	82	72%	0%	9%	5%	9%	6%	100%
3.6	Entrepreneurial innovativeness	0.2	0	3	75	0	4	3	n/a	n/a	82	91%	0%	5%	4%	n/a	n/a	100%
3.7	Equal Employment Opportunities	2.1	0	5	46	0	0	4	0	32	82	56%	0%	0%	5%	0%	39%	100%
3.8	Executive compensation plans	0.8	0	5	65	0	4	5	1	7	82	79%	0%	5%	6%	1%	9%	100%
3.9	Training programs	3.0	0	5	26	0	3	10	4	39	82	32%	0%	4%	12%	5%	48%	100%
3.10	Union activity	0.4	0	5	74	0	1	3	0	4	82	90%	0%	1%	4%	0%	5%	100%

APPENDIX I

Table 0.6 Manukau City Council score sheet

			Manukau City Council					
			Raw Mark			Weighted Mark		
1.0	Internal Capital	Weighting	Max score	Score	%	Max Score	Score	%
1.1	Intellectual property	2.3	3.0	0	0%	6.9	0.0	0%
1.2	Management philosophy	2.7	3.0	3	100%	8.1	8.1	100%
1.3	Management processes	2.1	3.0	3	100%	6.4	6.4	100%
1.4	Corporate culture/ values	2.5	3.0	3	100%	7.5	7.5	100%
1.5	Information/networking systems	1.5	5.0	5	100%	7.5	7.5	100%
1.6	Financial relations	3.0	5.0	5	100%	15.0	15.0	100%
1.7	Promotional tools	1.6	5.0	5	100%	8.2	8.2	100%
	total		27.0	24	89%	59.6	52.8	89%
2.0	External Capital							
2.1	Brands	1.7	5.0	0	0%	8.6	0.0	0%
2.2	Ratepayer database	0.9	5.0	0	0%	4.6	0.0	0%
2.3	Ratepayer demographics	2.6	5.0	5	100%	12.9	12.9	100%
2.4	Ratepayer satisfaction	3.3	5.0	5	100%	16.4	16.4	100%
2.5	Backlog work	2.5	5.0	5	100%	12.5	12.5	100%
2.6	Distribution channels	1.8	5.0	5	100%	8.9	8.9	100%
2.7	Joint ventures/ collaborations	3.1	5.0	5	100%	15.7	15.7	100%
2.8	Licensing agreements	1.9	5.0	0	0%	9.3	0.0	0%
2.9	Quality standards	2.6	5.0	5	100%	12.9	12.9	100%
	total		45.0	30	67%	101.8	79.3	78%
3.0	Human Capital							
3.1	Know-how	1.2	3.0	2	67%	3.6	2.4	67%
3.2	Education programs	1.4	5.0	5	100%	7.1	7.1	100%
3.3	Vocational qualifications	1.2	5.0	0	0%	6.1	0.0	0%
3.4	Work-related knowledge	1.3	5.0	3	60%	6.4	3.9	60%
3.5	Cultural diversity	1.6	5.0	5	100%	8.2	8.2	100%
3.6	Entrepreneurial innovativeness	2.7	3.0	2	67%	8.1	5.4	67%
3.7	Equal Employment Opportunities	1.9	5.0	5	100%	9.6	9.6	100%
3.8	Executive compensation plans	2.9	5.0	2	40%	14.3	5.7	40%
3.9	Training programs	1.4	5.0	5	100%	6.8	6.8	100%
3.1	Union activity	1.3	5.0	0	0%	6.4	0.0	0%
	total		46.0	29	63%	76.8	49.2	64%
TOTAL SCORE			118.0	83.0	70%	238.2	181.3	76%

APPENDIX J

Table 0.7 Analysis of weighted and unweighted scores

Local Authority	Weighted Scores				Raw Scores			
	Internal Capital	External Capital	Human Capital	Final Score	Internal Capital	External Capital	Human Capital	Final Score
Manukau City	89%	78%	64%	76%	89%	67%	63%	70%
Manawatu District	73%	81%	54%	70%	74%	73%	50%	64%
Rotorua District	76%	81%	51%	70%	70%	73%	54%	65%
North Shore City	83%	65%	66%	70%	81%	56%	70%	67%
Palmerston North City	86%	65%	58%	68%	85%	56%	57%	63%
Hutt City	83%	75%	43%	66%	81%	67%	43%	61%
Upper Hutt City	70%	78%	47%	66%	70%	67%	52%	62%
Wanganui District	83%	53%	67%	65%	81%	44%	67%	62%
Auckland City	63%	75%	53%	65%	70%	67%	59%	64%
Waitomo District	57%	80%	49%	65%	59%	71%	50%	60%
Kapiti Coast District	89%	73%	34%	64%	89%	62%	30%	56%
Masterton District	78%	70%	43%	64%	74%	60%	48%	58%
Tauranga City	70%	69%	51%	63%	63%	60%	57%	59%
Mackenzie District	84%	69%	38%	63%	85%	60%	39%	58%
Hamilton City	89%	81%	18%	63%	89%	73%	22%	57%
Auckland Region	83%	53%	58%	62%	81%	44%	57%	58%
Thames-Coromandel District	81%	59%	51%	62%	78%	53%	52%	58%
Southland District	73%	65%	46%	61%	67%	56%	52%	57%
Rangitikei District	73%	79%	25%	60%	67%	71%	26%	53%
South Waikato District	81%	70%	29%	60%	78%	60%	26%	51%
Nelson City	70%	54%	31%	59%	63%	47%	33%	49%
Whangarei District	78%	70%	28%	59%	78%	60%	35%	54%
Christchurch City	76%	60%	42%	58%	78%	51%	46%	55%
Queenstown Lakes District	81%	70%	25%	58%	78%	60%	30%	53%
Wellington City	89%	53%	40%	58%	89%	44%	48%	56%
Waitakere City	63%	64%	43%	57%	70%	56%	43%	54%
Waikato District	62%	65%	40%	56%	52%	56%	46%	51%
Central Otago District	46%	84%	25%	56%	48%	82%	26%	53%
Environment Waikato	81%	37%	58%	55%	78%	33%	52%	51%
Timaru District	70%	59%	36%	54%	63%	53%	39%	50%
Taupo District	67%	73%	19%	54%	67%	62%	24%	48%
Taranua District	67%	73%	19%	54%	67%	62%	24%	48%
Rodney District	83%	63%	19%	54%	81%	53%	24%	48%
Kaipara District	75%	60%	29%	54%	70%	51%	35%	49%
Waitaki District	81%	70%	11%	54%	78%	60%	13%	46%
Otorohanga District	83%	44%	42%	53%	81%	40%	46%	52%
Dunedin City	76%	69%	14%	53%	70%	62%	17%	47%
Napier City	68%	74%	14%	53%	70%	64%	17%	47%
Central Hawkes Bay District	70%	61%	28%	53%	63%	56%	35%	49%
Stratford District	83%	54%	25%	52%	81%	49%	26%	47%
Franklin District	43%	65%	41%	52%	48%	56%	39%	47%
Gisborne District	63%	60%	31%	52%	70%	51%	33%	48%
Kaikoura District	75%	64%	16%	51%	70%	56%	20%	45%

Local Authority	Weighted Scores				Raw Scores			
	Internal Capital	External Capital	Human Capital	Final Score	Internal Capital	External Capital	Human Capital	Final Score
Environment Southland	89%	42%	35%	51%	89%	40%	37%	50%
Tasman District	62%	70%	40%	51%	59%	60%	33%	45%
Westland District	62%	69%	16%	50%	59%	60%	15%	42%
horizons.mw	89%	52%	17%	50%	89%	42%	22%	45%
Ruapehu District	47%	65%	29%	49%	44%	56%	24%	41%
Environment Bay of Plenty	84%	44%	28%	49%	85%	42%	35%	49%
Environment Canterbury	70%	65%	9%	49%	63%	56%	11%	40%
New Plymouth District	76%	49%	26%	48%	78%	40%	28%	44%
Porirua City	75%	53%	21%	48%	78%	44%	26%	45%
Waimakariri District	78%	53%	18%	48%	74%	44%	22%	42%
Hastings District	76%	50%	21%	47%	78%	44%	26%	45%
Taranaki Region	63%	33%	53%	47%	63%	31%	61%	50%
Clutha District	70%	46%	30%	47%	63%	42%	33%	43%
Gore District	60%	56%	24%	47%	63%	51%	30%	46%
Chatham Islands Council	46%	64%	20%	45%	44%	56%	26%	42%
Waimate District	71%	47%	24%	45%	74%	40%	28%	43%
Western BOP District	57%	61%	15%	45%	52%	51%	17%	38%
Carterton District	75%	41%	25%	45%	74%	33%	26%	40%
Kawerau District	76%	44%	19%	44%	70%	33%	24%	38%
Wairoa District	51%	65%	9%	44%	52%	56%	11%	37%
South Taranaki District	76%	53%	6%	43%	70%	44%	7%	36%
Hurunui District	83%	38%	19%	43%	81%	40%	24%	43%
Grey District	47%	65%	9%	42%	48%	56%	11%	36%
Horowhenua District	70%	46%	13%	42%	67%	44%	17%	39%
Selwyn District	67%	48%	13%	41%	59%	40%	11%	33%
Otago Region	56%	38%	32%	41%	52%	36%	26%	36%
Northland Region	70%	37%	22%	40%	70%	33%	22%	37%
Hauraki District	50%	51%	18%	40%	52%	44%	24%	38%
Hawkes Bay Region	76%	37%	15%	40%	70%	33%	17%	36%
Sth Wairarapa District	70%	47%	6%	39%	63%	40%	7%	32%
Ashburton District	55%	52%	7%	38%	52%	44%	9%	32%
Far North District	37%	57%	14%	38%	41%	49%	17%	35%
Matamata-Piako District	33%	64%	9%	38%	30%	58%	11%	33%
Opotiki District	49%	57%	3%	37%	44%	49%	4%	31%
Buller District	49%	48%	14%	37%	52%	49%	17%	37%
Waipa District	53%	42%	16%	36%	48%	31%	15%	29%
Greater Wellington	49%	44%	9%	34%	41%	40%	11%	29%
Papakura District	37%	54%	4%	34%	33%	42%	4%	25%
Whakatane District	32%	44%	21%	33%	33%	42%	22%	32%
MEAN	69%	59%	29%	52%	67%	52%	31%	47%

Table 0.8 Tests of normality for weighted and unweighted scores

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Final Score (Weighted)	.059	82	.200(*)	.983	82	.340
Final Score (Unweighted)	.061	82	.200(*)	.989	82	.688

* This is a lower bound of the true significance.
a Lilliefors Significance Correction

Kolmogorov-Smirnov & Shapiro-Wilk tests

These tests compare the set of scores in the sample to a normally distributed set of scores with the same mean and standard deviation. If the test is non-significant ($p > 0.05$) the distribution is not significantly different from a normal distribution (i.e. it is probably normal). If the test is significant ($p < 0.05$) the distribution is significantly different from normal (i.e. it is not normal).

Kolmogorov-Smirnov

Weighted scores Sig. = 0.200 which is greater than 0.05 so is NOT significantly different from normal (i.e. it is probably normal).

Unweighted scores Sig. = 0.200 same as above: NOT significantly different (is probably normal).

The results of the Kolmogorov-Smirnov tests are confirmed with the following histograms which show that the data are fairly normally distributed.

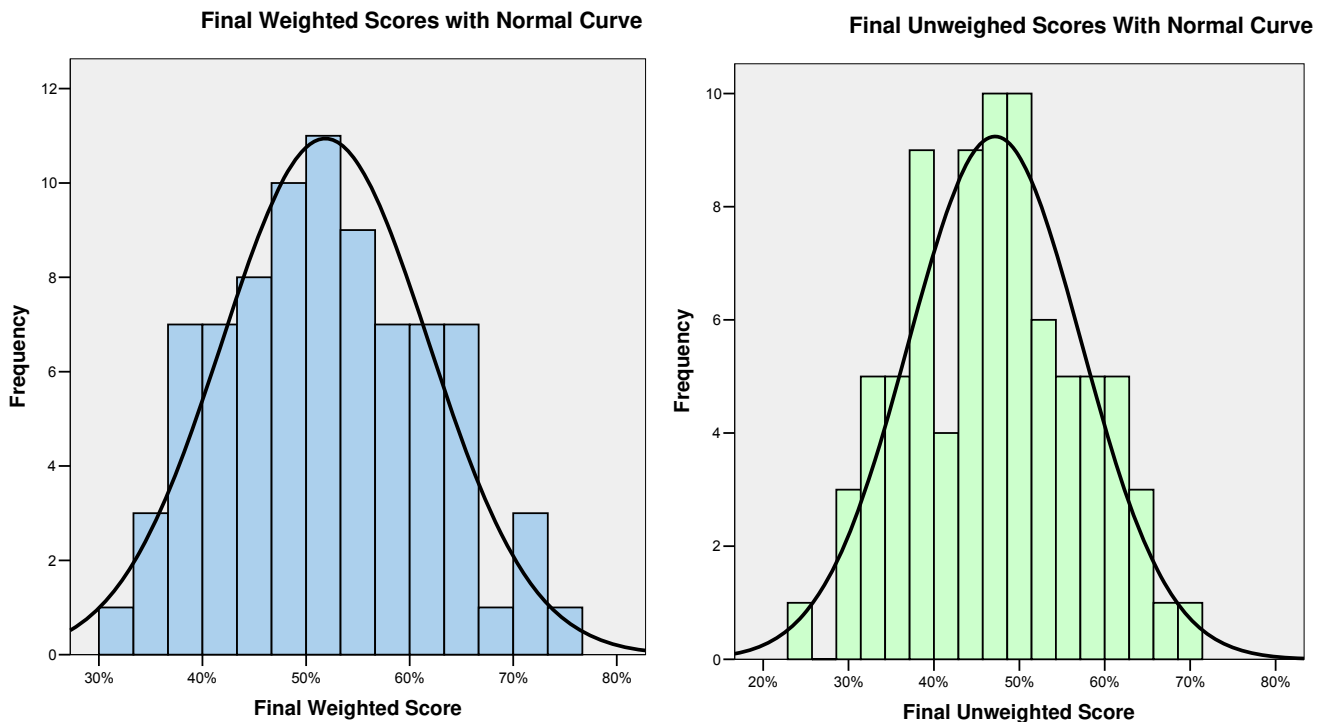


Table 0.9 Paired samples t-test for weighted and unweighted scores

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Final Weighted Score – Final Unweighted Score	.04671	.02373	.00262	.04149	.05192	17.824	81	.000

Mean = difference between the mean scores of each condition

Standard Deviation = of the differences between the means

Standard error: of the differences between local authority scores in each condition (weighted vs. unweighted).

SPSS⁸ uses the df (degrees of freedom, n-1) to calculate the exact probability that a value of t as large as the one obtained could occur by chance. This probability is sig. (2 tailed).

The significance (2-tailed: probability when no prediction was made about the direction of the group differences) is very low (0.000) which indicates there is no chance that a value of t this large could happen by chance alone.

95% confidence interval shows the boundaries between which 95% of the population means would lie. When pairs of random samples from a population are compared, it is expected that most of the differences between samples means is zero. This interval shows that, based on the two samples, 95% of differences between samples means will not be zero. Therefore the tests suggest that the two samples do not represent random samples from the same population. Instead they represent samples from different populations induced by experimental manipulation, i.e. there is a significant difference between the Weighted and Unweighted scores.

⁸ The statistical analysis in this research was conducted using SPSS 13.0 for Windows.

APPENDIX K

Analysis of scores by local authority type

Table 0.10 Tests of normality of scores by local authority type

	Type†	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Internal Capital	0	.163	68	.000	.923	68	.000
	1	.129	14	.200(*)	.953	14	.607
External Capital	0	.096	68	.200	.973	68	.148
	1	.192	14	.170	.917	14	.198
Human Capital	0	.135	68	.004	.942	68	.003
	1	.126	14	.200(*)	.928	14	.283
Overall Score	0	.074	68	.200(*)	.979	68	.303
	1	.165	14	.200(*)	.964	14	.790

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

† Type 0 = Territorial authorities, Type 1 = Regional and Unitary authorities

Kolmogorov-Smirnov & Shapiro-Wilk tests

These tests compare the set of scores in the sample to a normally distributed set of scores with the same mean and standard deviation. If the test is **non-significant** ($p > 0.05$), the distribution is not significantly different from a normal distribution (i.e. it is probably normal). If the test is significant ($p < 0.05$), the distribution is significantly different from normal (i.e. it is not normal).

In this case Internal Capital scores for Territorial Authorities and Human Capital scores for Territorial Authorities are not normally distributed ($p < 0.05$ so is significant; shown by shaded boxes in the table). This means that non-parametric tests must be used. However, the independent t-test is considered to be reasonably forgiving of non-normally distributed data (Field, 2000) therefore will be used for determining significant differences in scores by local authority type.

Table 0.11 Independent samples t-test for scores by local authority type

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Internal Capital	Equal variances assumed	.560	.456	-.819	80	.415	-.03477	.04243	-.11921	.04967
	Equal variances not assumed			-.922	21.418	.367	-.03477	.03770	-.11307	.04354
External Capital	Equal variances assumed	.000	.983	4.118	80	.000	.14046	.03411	.07259	.20833
	Equal variances not assumed			4.126	18.784	.001	.14046	.03404	.06915	.21177
Human Capital	Equal variances assumed	.093	.761	-.662	80	.510	-.03168	.04785	-.12691	.06355
	Equal variances not assumed			-.655	18.560	.520	-.03168	.04836	-.13307	.06970
Overall Score	Equal variances assumed	2.775	.100	1.332	80	.187	.03884	.02917	-.01920	.09689
	Equal variances not assumed			1.609	23.679	.121	.03884	.02413	-.01100	.08869

Internal Capital

Levene's Test: Not significant because $p > 0.05$ ($p = 0.456$) so equal variances are assumed (read equal variances assumed row in table).

t-test: Sig. (2-tailed) $p > 0.05$ ($p = 0.415$) therefore no significant difference between group 0 (territorial authorities) and group 1 (regional/unitary)

External Capital

Levene's Test: Not significant because $p > 0.05$ ($p = 0.983$) so equal variances are assumed (read equal variances assumed row in table).

t-test: Sig. (2-tailed) $p < 0.05$ ($p = 0.000$) therefore there **is** significant difference between group 0 (territorial authorities) and group 1 (regional/unitary)

Human Capital

Levene's Test: Not significant because $p > 0.05$ ($p = 0.761$) so equal variances are assumed (read equal variances assumed row in table).

t-test: Sig. (2-tailed) $p > 0.05$ ($p = 0.510$) therefore there is no significant difference between group 0 (territorial authorities) and group 1 (regional/unitary)

Final Score

Levene's Test: Not significant because $p > 0.05$ ($p = 0.100$) so equal variances are assumed (read equal variances assumed row in table).

t-test: Sig. (2-tailed) $p > 0.05$ ($p = 0.4187$) therefore there is no significant difference between group 0 (territorial authorities) and group 1 (regional/unitary)

APPENDIX L

Analysis of scores by local authority size

Table 0.12 Tests of normality of scores by local authority size

	Size Code†	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Internal Capital	0	.234	13	.051	.889	13	.094
	1	.157	69	.000	.939	69	.002
External Capital	0	.129	13	.200(*)	.955	13	.672
	1	.092	69	.200(*)	.973	69	.146
Human Capital	0	.192	13	.200(*)	.917	13	.229
	1	.106	69	.052	.953	69	.011
Overall Score	0	.124	13	.200(*)	.982	13	.986
	1	.065	69	.200(*)	.976	69	.210

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

† Size Code 0 = rates value > \$50 million; Size Code 1 = Rates value < \$50 million.

If sig. < 0.05 then distribution is **not** normal.

In this case all scores are normally distributed, *except* Internal Capital Final Scores for small local authorities; these are not normally distributed. However, independent t-tests are reasonably reliable when data is not normally distributed (Field, 2000).

Table 0.13 Independent samples t-test for scores by local authority size

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Internal Capital	Equal variances assumed	3.008	.087	2.633	80	.010	.11086	.04211	.02706	.19466
	Equal variances not assumed			3.541	24.625	.002	.11086	.03131	.04632	.17539
External Capital	Equal variances assumed	4.087	.047	2.454	80	.016	.09155	.03730	.01731	.16578
	Equal variances not assumed			3.170	22.979	.004	.09155	.02888	.03181	.15129
Human Capital	Equal variances assumed	1.648	.203	2.863	80	.005	.13478	.04708	.04109	.22847
	Equal variances not assumed			2.393	14.797	.030	.13478	.05631	.01461	.25495
Final Score	Equal variances assumed	1.605	.209	3.974	80	.000	.11033	.02776	.05508	.16559
	Equal variances not assumed			4.728	20.349	.000	.11033	.02334	.06170	.15896

If Levene's test is significant at $p \leq 0.05$ it can be concluded the assumption of homogeneity of variances has been violated. If this occurs the row 'equal variances not assumed' should be used.

Internal Capital

Levene's Test: Not significant because $p > 0.05$ ($p = 0.087$) so equal variances assumed (read equal variances assumed row in table)

t-test: Sig. (2-tailed) $p < 0.05$ ($p = 0.010$) therefore **there is significant difference** between large territorial authorities (rates value > \$50million) and small local authorities (rates value < \$50million).

External Capital.

Levene's Test: Is significant because $p < 0.05$ ($p = 0.047$) so equal variances not assumed (read equal variances **not** assumed row in table)

t-test: Sig. (2-tailed) $p < 0.05$ ($p = 0.004$) therefore **there is significant difference** between large territorial authorities (rates value > \$50million) and small local authorities (rates value < \$50million).

Human Capital

Levene's Test: Not significant because $p > 0.05$ ($p = 0.203$) so equal variances assumed (read equal variances assumed row in table)

t-test: Sig. (2-tailed) $p < 0.05$ ($p = 0.005$) therefore **there is significant difference** between large territorial authorities (rates value > \$50million) and small local authorities (rates value < \$50million).

Final Score

Levene's Test: Not significant because $p > 0.05$ ($p = 0.209$) so equal variances assumed (read equal variances assumed row in table)

t-test: Sig. (2-tailed) $p < 0.05$ ($p = 0.000$) therefore **there is significant difference** between large territorial authorities (rates value > \$50million) and small local authorities (rates value < \$50million).

APPENDIX M

Relationship analysis: Pearson correlation and R²

Table 0.14 Pearson correlation analysis

		Population	Rates Revenue (\$000)	Total Assets (\$000)	Number of Pages
Final Score	Pearson Correlation	.195	.436(**)	.405(**)	.482(**)
	Sig. (2-tailed)	.082	.000	.000	.000
	N	81	81	81	81
	R ²	.038	.190	.164	.232

** Correlation is significant at the 0.01 level (2-tailed).

If Sig. 2-tailed < 0.001 then the correlation is significant. All significant correlations are marked with ** as above. This significance indicates that the probability of this correlation being a coincidence is very low (close to zero in fact) and we can be confident that the relationship between the two variables is genuine.

For this data: Final Score is not correlated with Population, but it is correlated to Rates Revenue, Total Assets and Number of Pages. All coefficients are positive so this indicates as Rates Revenue, Total Assets or Number of Pages increases, the Final Score also increases.

R² is a measure of the amount of variability in one variable that is explained by the other (Field, 2000). For example, consider the relationship between Final Score and Rates Revenue. R² indicates how much of the variability in the overall score is accounted for by Rates Revenue.

The variables Final Score and Rates Revenue have a correlation coefficient of 0.436 and therefore R² will be $(0.436)^2 = 0.190$. This value explains how much of the variability in overall score can be explained by rates revenue. This figure can be converted to a percentage by multiplying by 100. Therefore Rates Revenue accounts for 19% of the variability in Final Scores. Therefore, although Final Score was highly correlated to Rates Revenue, it can account for only 19% of the variation in Final Scores. This leaves 81% of the variability still to be accounted for by other variables.

R² is extremely useful measure of the substantive importance of an effect; it cannot be used to infer causal relationships (Field, 2000). Therefore although Rates Revenue can account for 19% of the variation in Final Scores, it does not necessarily cause this variation.

In summary, Rates Revenue, Total Assets and Number of Pages are all significantly correlated to Final Scores. Rates Revenue accounts for 19.0% of the variation, Total Assets accounts for 16.4% of the variation and Number of Pages accounts for 23.2% of the variation (total variation accounted for 58.6%).

Table 0.15 Partial correlation analysis

Control Variables			Final Score	Total Assets	Number of Pages	Rates Revenue
Rates Revenue	Final Score	Correlation	1.000	-.015	.321	
		Significance (2-tailed)	.	.898	.004	
		Df	0	78	78	
		R ²		2.25 x 10 ⁻⁴	.103	
Number of Pages	Final Score	Correlation	1.000	.205		.231
		Significance (2-tailed)	.	.068		.039
		Df	0	78		78
		R ²		.042		.053
Total Assets	Final Score	Correlation	1.000		.347	.176
		Significance (2-tailed)	.		.002	.118
		Df	0		78	78
		R ²			.120	.031

Partial correlations can be used to determine the effect of one variable on another variable without the interference of other variables.

When Rates Revenue is controlled, the effect of the other two variables (Total Assets and Number of Pages) on Final Score can be determined:

- *Total Assets* explains only 0.02% of variance in Final Scores ($R^2 = ((-0.015)^2 \times 100)$). And is **not significant** ($p > 0.04$, $p = 0.898$) (shaded in green).
- *Number of Pages* explains 10.3% of variance in the Final Scores. ($R^2 = ((0.321)^2 \times 100)$) which is still significant because $p < 0.05$ ($p = 0.004$) (shaded in blue).

When Number of Pages is controlled the effect of the other two variables (Total Assets and Rates Revenue) on Final score can be determined:

- *Rates Revenue* explains only 5.3% of variance in Final Scores ($R^2 = ((0.231)^2 \times 100)$). And is **significant** ($p < 0.05$, $p = 0.039$) (shaded in blue).
- *Total Assets* explains 4.2% of variance in the Final Scores. ($R^2 = ((0.205)^2 \times 100)$) which is **not significant** because $p > 0.05$ ($p = 0.068$) (shaded in green)

When Total Assets is controlled, the effect of the other two variables (Rates Revenue and Number of Pages) on Final Score can be determined:

- *Rates Revenue* explains only 3.1% of variance in Final Scores ($R^2 = ((0.176)^2 \times 100)$). And is **not significant** ($p > 0.05$, $p = 0.118$) (shaded in green).
- *Number of Pages* explains 12.0% of variance in the Final scores. ($R^2 = ((0.347)^2 \times 100)$) which is **significant** because $p < 0.05$ ($p = 0.002$) (shaded in blue).

APPENDIX N

Annual report references of local authorities used in this research

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