
University of Southern Queensland (Australia)

Faculty of Business

**The role of shared mental models of strategic thinking in
the development of organisational strategy**

A dissertation by

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Submitted for the award of Doctor of Philosophy in Management

June 2010

ABSTRACT

Strategic thinking is a popular research topic in management and business fields and mental models are studied extensively in the area of cognitive psychology. However, there is a dearth of research focused on mental models of strategic thinking. Limited empirical research and paucity in assessment or exploration of mental models of strategic thinking result in a theoretical gap that this study addresses. Although it is well noted in the strategic management theory that finding a competitive strategy is essential in achieving sustainable competitive advantage, few models include strategic thinking as a specific aspect in the strategy development process. Because strategic thinking relies on the mental models of strategic thinking, the cognitive aspects of strategic thinkers need to be investigated. This study specifically addresses the gap in investigating strategy development from a business and psychology perspective. Furthermore, limited research on strategy development in Australian local government and the newly-established regional councils in Queensland creates an opportunity to conduct a study focussing on organisational strategy in these councils to assist councils in achieving the aims of the local government reform. In this context, the aim of this dissertation study is to investigate the role of shared mental models of strategic thinking in the development of organisational strategy.

This investigation of shared mental models includes the content of task mental models and group-functioning mental models of individual group members and also the content of the strategy groups' shared mental models of the task of strategic thinking and group-functioning. The levels of agreement of these mental models are investigated within specific strategy groups and among strategy groups on various organisational levels.

Within the three Queensland regional councils which participated in the study, three levels of strategy groups are studied. The first level strategy group includes the mayors, councillors and chief executive officers. The second level strategy group includes the chief executive officers and directors of the council departments. The third level strategy group includes the directors of those departments or directorates that are responsible for developing corporate plans,

plus other employees on operational levels involved in strategy development. Nine strategy groups are investigated—three on each level—and the results of the study are presented according to the level of strategy groups and not according to individual regional councils.

Primarily, a qualitative approach is applied, although the survey section of the interview protocol includes a secondary quantitative approach. Multiple sources of data gathering are applied, including the interview protocol, a scenario exercise and documentation. Multiple data analysis methods are incorporated, including qualitative content analysis, scenarios, documentary analysis and Leximancer analysis. Triangulation is applied to compare the results obtained from the different methodologies, to seek for similarities and to integrate the different sets of results.

The results of the study indicate that strategy group members applied strategic thinking in their involvement in developing organisational strategy. The content of their task mental models of strategic thinking includes the four elements of strategic thinking, namely to think about sustainable competitive advantage, thinking holistically, thinking creatively and analytically and thinking long-term about the future when they consider the long-term direction for their organisation. Medium to high levels of agreement about the task of strategic thinking occurs within and across strategy groups but this does not reflect identical mental models because individual characteristics influence individual mental models. High levels of agreement refer to similarity about strategic thinking although individual mental models ensure distinctiveness in thinking. Furthermore, the results indicate that although strategic thinking occurs in all three levels of strategy groups, employees on various levels contribute differently towards strategy development. A high degree of strategic thinking is required for first level strategy groups and this decrease progressively on the second and third level strategy group.

Perceptions of strategy group members about the functioning of their strategy groups are investigated and the findings show that group members share

perceptions about the roles and responsibilities of fellow group members and the knowledge and skills of fellow group members, but they do not share perceptions about how the groups interact. When the strategy groups were investigated, they were only recently established and in the initial stages of development. The results suggest that individual mental models develop in the initial phases of group development and that shared mental models only start to develop when groups mature. Regarding the levels of agreement within and among strategy groups about group-functioning mental models, the results indicate varied levels of agreement within strategy groups and overall medium levels of agreement across the groups.

This study predominantly contributes to bridging the gap in the theory between strategic thinking literature and mental models literature by investigating mental models of strategic thinking. It also addresses strategy making within various organisational levels and develops a set of strategic thinking elements that include aspects of sustainability that do not feature prominently in current literature about strategic thinking.

Finally, the study contributes to the development of methodology to investigate mental models of strategic thinking and the research methods was applied to real employees in real organisations, as opposed to studies in laboratory settings. The research methods can be applied in local government to assess strategic thinking as part of their internal analysis of competencies or in selection and assessment processes in the appointment of new staff. More specifically, this study contributes to learning and development of the regional councils that were investigated through the feedback provided to these councils about strategic thinking in their strategy groups.



CERTIFICATION OF DISSERTATION

I certify that the ideas, results, analyses and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

Signature of Candidate

Date

ENDORSEMENT

Signature of Supervisor

Date

Signature of Supervisor

Date

ACKNOWLEDGEMENTS

It's DONE...and this would not have been possible without the encouragement, enthusiasm, help and support of my two excellent supervisors, Prof. Ronel Erwee and Dr. Dennis Rose. You have been amazing - what a privilege to work with you –thank you.

I would also like to thank my Head of School, Prof. Doren Chadee, staff from the Faculty of Business' Research Office, Prof. Raj Gururajan and Liz Watson and colleagues in the Faculty of Business for your assistance and support; your contributions are greatly appreciated. Special thanks to Chris O'Reilly for editing this huge document, sacrificing her weekends – many thanks, Chris!

I would like to acknowledge my fellow PhD students and dear friends who supported me through this process – thank you for your friendship and kindness!

For all the council employees who participated in this study – many thanks for your wonderful participation. Thank you for trusting me with your personal opinions and for your honest responses to my many questions. I really appreciate your time and contributions.

To my parents who taught me resilience, to NEVER give up and to be strong – thank you for your encouragement, love and support, your prayers; and for always believing in me. Thank you also to my sisters, Janie, Heidi and Anita for your encouragement and love. To my dearest husband Mel and children, Stephan and Chene: a huge thank you for your love, patience, kindness, motivation and support – I can't imagine my life without you. Thank you for graciously allowing me to complete this study - I promise that I will make up for all the hours that I was unavailable to you! I have to also mention my little dog, Lyla, for the many hours she patiently waited by my feet while I worked on my thesis.

Finally and most of all, my thanks and praise to God for all His blessings!

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Chapter 1

Introduction

'New insights fail to get put into practice because they conflict with deeply held internal images of how the world works – images that limit us to familiar ways of thinking and acting. That is why the discipline of managing mental models – surfacing, testing and improving our internal pictures of how the world works – promises to be a major breakthrough for learning organisations'

(Peter Senge, 1990, *The Fifth Discipline*)

Strategic thinking is an integral part of the strategy development process and it is generally accepted that strategic thinking plays an important role in strategic planning (Bonn 2001; Graetz 2002; Mintzberg 1994). Because strategic thinking entails developing options for the long-term strategy of an organisation (Bonn 2001; Graetz 2002; Mintzberg 1994) and the long-term strategy plays an important role in the success of an organisation (Hubbard, Rice & Beamish 2008), strategic thinking is viewed as a critical component in organisational success (Hamel & Prahalad 1994).

The effectiveness of strategic thinking, however, depends on mental models of strategic thinking of individuals and shared mental models among strategic thinkers (Bonn 2001). Shared mental models play an important role in group effectiveness (Davison & Blackman 2005; Klimoski & Mohammed 1994) and ultimately in successful strategy development. This study addresses the role of shared mental models of strategic thinking in strategy development.

1.1 Background and outline

To be successful and sustainable, organisations need to develop strategies that are different, unique and better than their competitors in addressing the needs of their core customers. Because no organisation can be 'everything to everyone', decision-makers need to find a specific overall strategy that will outperform their competitors, and organisational resources should be focused on this strategy. To find a competitive strategy, decision-makers need to create, develop and consider

a wide range of strategy options and, from that, choose a strategy that has the potential to ensure success (Abraham 2005). During this period of considering strategic options, strategic thinking is stimulated, and mental models about strategic thinking are activated. Individuals' mental models of strategic thinking are based on their knowledge, previous experiences and beliefs about the long-term direction of their organisation (Jacobs & Heracleous 2005; Langfield-Smith 1989; Mathieu et al. 2000). Multiple mental models can co-exists among group members when they think about a domain. Furthermore, the multiple mental models are related to all aspects of the domain. Mathieu et al. (2000) identified two major areas of shared mental models, namely, task related features of the situation (for instance, the task itself, technology and equipment) and group-related aspects of the situation (for instance group interaction, group member roles and perceptions about other group members). These authors argued that in order to be successful, group members need to not only perform task related functions well, they also must work well together as a group. In the same vein, Fiore and Schooler (2004) argue that, to have a shared mental model for a group task, group members must be aware of the problem structure, the roles and skills of the group members and have a shared awareness that each member of the group possesses this knowledge.

Another aspect that needs to be considered in the field of shared mental models is the link to group formation. When work groups are formed, the group evolves through stages of forming, storming, norming, performing and adjourning (Tuckman & Jensen 1977). Processes underlying group formation are task-oriented activities and maintenance-oriented activities (Bratton, Grint & Nelson 2005). These processes are similar to the two areas of shared mental models as discussed in the previous paragraph. It is argued that individual and shared mental models related to the task and process play an important role in the stages of group development and group formation benefits from shared mental models.

1.1.1 Shared mental models of strategic thinking

Shared mental models of strategic thinking develop as the strategy group members work together on achieving the goals of the strategy group (see Section 1.6 for a definition of the term ‘shared mental models of strategic thinking’). Shared mental models provide employees with a collective interpretive framework that assists them in understanding the nature of the problem and help them to creating solutions. The level of agreement among these mental models is linked to effective team performance, effective team coordination and organisational performance (Swaab et al. 2002).

Because the development of the long-term direction of the organisation is performed by strategy groups in organisations and individual and shared mental models about strategic thinking influence how these group members think about organisational strategy, it is argued that shared mental models of strategic thinking play an important role in strategy development in organisations.

Although strategic management and strategic planning have been extensively researched over the last four decades, the focus has mostly been on frameworks of strategic planning. Mental models of strategic thinking as a research area has not been sufficiently addressed. There are limited empirical studies on the topic of strategic thinking (Hutzschenreuter & Kleindienst 2006) and the cognitive context of strategists (Bonn 2001; Zahra & O'Neill 1998). There is a distinct lack of theoretical and empirical research on mental models of strategic thinking; especially in the Australian local government context.

Furthermore, there is a debate in the literature about participation in strategic thinking in organisations: whether individuals on various organisational levels are, or should be, involved in strategic thinking – this is explained later in this chapter and in Chapter 2. This leads to questions about the composition of strategy groups and their shared mental models of strategic thinking. Although this debate is related to shared mental models of strategic thinking, this study

focuses on strategy groups in organisations and not on individuals across organisational levels.

A broad literature on shared mental models exists, but their investigation remains a challenge for both researchers and practitioners (Klimoski & Mohammed 1994; Webber et al. 2000). Limited empirical studies, and the need for clarity about the role of mental models of strategic thinking in strategy development, create the potential for this research to make a significant contribution to current conceptual frameworks of strategic management and the practice of strategic thinking in organisations.

1.1.2 Context of the study

The focus of this study is on regional councils in South East Queensland. In Australia, local government acts as the third level of governance and has legislative responsibility for many functions and activities relevant to a local area. Local governments can be classified as service organisations and their focus is on service delivery in provision of water, community facilities such as libraries and parks, maintenance of local roads, planning, and local services such as waste disposal (Local Government Reform Commission 2007).

On 17 April 2007, the Queensland Government announced a state-wide reform of Queensland's local government sector to address future challenges and to ensure optimum service delivery to all Queensland communities. The Local Government Act 1993 Section 159C stipulated examination of the local government area boundaries, classes and names and an independent commission was established to guide the reform process. The Local Government Reform Commission was chartered to recommend structural changes to councils (Local Government Reform Commission 2007).

The recommended structural changes to local government focused on ensuring strong, effective and financially-viable councils capable of facilitating optimum service delivery to all Queensland communities through undertaking effective planning and exercising sound governance (Local Government Reform

Commission 2007). Through structural changes, the previous one hundred and fifty-seven councils have been amalgamated into seventy-three local councils. The major objective of the local government reform, according to the Local Government Act 1993 and the Local Government Reform Commission Report 2007, was the establishment of a regionally-based structure. This was viewed as vital in responding to the changes in regional economies regarding transportation, telecommunications and economic interdependencies.

In the new structure, the seventy-three local councils are made up of seven city councils, thirty-six shire councils and thirty regional councils. The Local Government Act 1993 s18 stipulates that a local government area may be classified as a city, town, shire or region (Local Government Reform Commission 2007). Specific criteria are set for each classification.

A significant change to the previous structure is the creation of regional councils. Where local government areas amalgamated and do not closely fit the criteria for city or town, a regional council is declared. The term 'regional council' reflects the genesis of these large entities, and the need for more robust and sustainable units which have the capacity to address and manage a range of economic and social development issues which interplay over a considerable area.

Regional councils were created according to size and scale to generate cost effective and efficient services and to manage sustainable economic and social growth and development over large areas. These regional councils were created by amalgamation of between two and nine previous shire councils.

The major challenge for all councils, regional councils and shires is to provide excellent and sustainable services to their community within their allocated budget. Effective governance in local government is important because local governments are accountable to the communities they serve by specifically meeting the communities' needs through efficient and effective planning and decision-making and long-term sustainable service delivery. Excellent governance requires councils to develop strategic plans and a vision of their

long-term direction. Strategic thinking is a critical component in developing organisational strategy (Local Government Reform Commission 2007).

The amalgamations in regional councils create a situation where new strategy groups are formed within the new regional councils and the members of these groups came from the previous shire councils. Each member has a mental model of strategic thinking based on his or her previous experiences and knowledge of the former shire council and each member is now required to contribute to developing strategy for the new regional council. It is expected that shared mental models of strategic thinking develop as strategy groups share ideas and work together towards developing organisational strategy for the council. The individual and shared mental models impact on the group formation processes and may have an influence on the effectiveness of strategy groups. There is a need to recognise and identify both task and process aspects of these mental models to understand their influence on strategic thinking. This study investigates task and group-functioning mental models of strategic thinking and the level of agreement within and among strategy groups.

1.2 Justification for the research and problem statement

This study contributes to both theory and practice. Undertaking this research is justified on the basis of four aspects. Firstly, the identification of the theoretical gap in the area of strategic thinking and, secondly, the importance of strategic thinking in the strategic management process. Thirdly, the important influence of shared mental models of strategic thinking on strategy development and, fourthly, conducting shared mental model research in a field setting.

The theoretical gap in the area of strategic thinking relates to two aspects: firstly, the limited empirical research on mental models of strategic thinking and the paucity in assessment or exploration of these mental models (Bonn 2001; Hutzschenreuter & Kleindienst 2006; Zahra & O'Neill 1998). Secondly, there is limited empirical research on organisational strategy within the context of

Australian local government. Addressing the theoretical gap contributes to both theory and practice.

The importance of strategic thinking in the strategic management process: Although many researchers acknowledge the importance of finding a competitive strategy to achieve sustainable competitive advantage (Hanson et al. 2008; Johnson et al. 2005), few strategic management theoretical models include strategic thinking as a precursor to strategic planning and as a specific aspect in the strategy development process. Investigation and clarification of this aspect is viewed as a theory contribution.

The influence of shared mental models of strategic thinking: Further to the previous point, few theoretical models include the cognitive aspects of decision-makers in presenting the strategy development process. Hitt et al. (2007) argue the case for applying multilevel designs to existing models and incorporating collaboration across disciplines on multidisciplinary topics. By investigating shared mental models from a psychology perspective and strategic thinking from a business perspective, different disciplines are incorporated in this study and this can be considered as making a theory contribution.

Conducting shared mental model research in a field setting: The majority of research studies on shared mental models are confined to laboratory settings and Webber et al. (2000) argue that validation of the findings is needed in real group environments. Shared mental models need to be assessed and examined in organisational settings. The value of conducting a study on shared mental models in real group situations (strategy groups) about real organisational issues (strategic thinking) lies in the applicability of the results in organisations. In laboratory settings, groups often consist of volunteers who are not usually working together as a group and the tasks are often also fictitious which means that real work groups and organisational tasks are not investigated. The research methods applied in this study to investigate shared task and group-functioning mental models can be utilised by other local government organisations in their

strategy development processes. This can be considered as a contribution to practice.

The majority of studies on strategic thinking are focused on the private sector and there are limited research and empirical studies focusing on strategic thinking in public organisations, especially Australian local government. Strategic thinking in regional councils has not been investigated before because this is a new structural form of local government.

Strategic thinking is different in public and private organisations. Because the government exercises control over public sector organisations, strategic choices and priorities are restricted (Johnson et al. 2008) and this has an influence on strategic thinking in regional councils. This study investigates strategic thinking within the public sector, and this can be considered a theory and practice contribution.

The above aspects are addressed in the research questions.

1.3 Research objective and research questions

In view of the above, the overall objective of this research is to:

Investigate the role of shared mental models of strategic thinking in the development of organisational strategy.

Essentially it is argued that the development of organisational strategy is influenced by the shared mental models of the strategic thinkers in the organisation and that the levels of agreement of task mental models and group-functioning mental models play an important role in strategy development.

Following from the research objective, four research questions emerge, namely:

RQ1: What is the shared task mental model of strategic thinking of strategy groups?

RQ2: What is the level of agreement of the task mental models of strategic thinking amongst strategy groups?

RQ3: What is the shared group-functioning mental model of strategy groups?

RQ4: What is the level of agreement of the group-functioning mental models amongst strategy groups?

These issues form the basis of this research study and are further addressed in the literature review in Chapter 2.

1.4 Conceptual framework

This research study addresses two major issues, namely, strategic thinking and mental models. Strategic thinking is a combination of ‘strategy’ and ‘thinking’. Strategy refers to an integrated set of plans, commitments and actions with a medium to long-term impact, directed at achieving competitive advantage (Grant 2005; Hanson et al. 2005; Hubbard et al. 2008). ‘Thinking’ is described from a psychology perspective as a cognitive activity, and includes activities such as reasoning, decision-making and problem solving aimed at creating productive ideas or conclusions about something (Ericksson & Hastie 1994). When ‘strategy’ is connected to ‘thinking’ within the context of organisations, strategic thinking is defined as a clear mental picture of the future of the organisation and the individual’s role in the larger system (Liedtka 1998), focused on problem solving and understanding the wider business context (Wilson 1994) and involving internal and external stakeholders (Mintzberg 1994).

When people think about something, in this case, the long-term strategy of their organisation, mental models are activated. Mental models are the mental frameworks that people have about a specific domain. These frameworks influence their thinking processes in understanding, interpreting and predicting the domain. Mental models are based upon core beliefs and values, as well as relevant experiences and exposure (Denzau & North 1994; Fiske & Taylor 1991;

Gentner & Stevens 1983; Jacobs & Heracleous 2005; Langfield-Smith 1989; Mathieu et al. 2000). Mental models can be individual, representing individual understanding of domain, and they can be shared. When people work together in a group, they share in group work, task work and belief structures through their experience in working together to accomplish the same goal and this leads to the development of shared mental models (Cooke et al. 2000; Mathieu et al. 2000; Mohammed & Dumville 2001). Shared mental models provide a common understanding among the individuals within a group, presenting frameworks of value and belief systems which act as the basis for analysing new ideas, concepts, policies and cultural developments being considered by a group (Davison & Blackman 2005).

Organisational strategy is developed by the employees of organisations. The employees include organisational members within an organisation, across organisational levels, functions and positions. In this study, the focus is on specific strategy groups within regional councils. Strategic thinking is part of the strategy development process and occurs before strategy formulation; it guides strategy formulation and implementation and it influences and is influenced by the strategic planning process (Bonn 2001; Mintzberg 1994). The long-term direction of an organisation needs to be considered before the planning process of identifying specific steps to accomplish the organisational goals and breaking down of organisational goals into tasks can commence (Graetz 2002).

From a rational model perspective, creating the long-term direction for the organisation (strategic thinking) is viewed as the responsibility of the strategic decision makers—the senior managers in an organisation (Ansoff 1965; Child 1972; Drucker 1970; Porter 1980). These managers are responsible for ensuring an organisational strategy is created that will result in a sustainable competitive advantage for the organisation.

In contrast to this, it is argued that the organisation should ideally involve employees from all levels in the strategy development process (Andrews 1995; DiVanna & Austin 2004; Guth & MacMillan 1986; Kosgaard, Schweiger &

Sapienza 1995; Mintzberg 1990; Rhyne 1986; Wooldridge & Floyd 1990). Strategic thinking at multiple organisational levels is proposed as essential in creating and sustaining competitive advantage. With regard to strategic management in local government in Australia, it is suggested that mayors and councillors take part in formulating, adopting and reviewing the local government's corporate and operational plans; and the policies and goals of the local government (Australia Local Government 2001-2).

The contention of this study is that to develop organisational strategy, members of strategy groups (whether they are senior managers or employees on lower organisational levels) first have to engage in strategic thinking to develop and create a range of strategic options for the long-term direction of the organisation. From these options, a strategy that has the potential for long-term success of the organisation is chosen. When strategy group members engage in strategic thinking for the long-term direction of their organisation, their mental models of strategic thinking, based on their previous experiences and beliefs about strategy, are activated (Langfield-Smith 1989; Mathieu et al. 2000). These are their pre-existing mental models of strategic thinking. As they work together on the task of developing or revising the long-term direction of their organisation, strategy group members communicate and share their experiences, beliefs and ideas, and a shared mental model develops (Cooke et al. 2000; Mohammed & Dumville 2001). The development of a shared mental model follows an iterative process—the individuals' mental models of strategic thinking influence, and is influenced by, other group members' mental models of strategic thinking as mutual learning takes place. Shared mental models may lead to a mutual understanding of role expectations and complementary task behaviour. These mental models consist of mental models about the task of strategic thinking, but also mental models about the functioning of their strategy group. Task mental models include task details (Mathieu et al. 2000; Swaab et al. 2002) which are related to the elements of strategic thinking, and these are explored in the study. Group-functioning mental models is the second type of mental models that are investigated and present the way that group members perceive each other's knowledge, skills and attitudes and the way in which the group functions (Rentsch & Woehr 2004). If

group members' mental models of strategic thinking are aligned and high levels of agreement in their shared mental models of strategic thinking are present, they may be more successful in developing an appropriate long-term direction for their organisation.

The aim of this study is to clarify the role of shared mental models of strategic thinking in strategy development by:

- exploring the shared task mental model and the shared group-functioning mental model of strategic thinking of strategy groups; and
- determining the level of agreement of these mental models among strategy groups.

1.5 Research Methods

Based on the exploratory nature of the research question, case study methodology is appropriate within the realism scientific paradigm. Perry (1998) claims that realism is the preferred scientific paradigm for case studies because it entails the collection and study of unobservable phenomena such as mental models, whereas positivism requires only observable phenomena. This study includes a combination of inductive theory building research and deductive reasoning where conclusions about the elements of strategic thinking derived from the literature are made.

The research design for this study incorporates primarily a qualitative approach, but quantitative research is also included. Cavana, Delahaye & Sekaran (2001) argue that the aim of qualitative research is to discover how people construct meanings in their contextual settings and that the focus is on understanding human behaviour. The qualitative approach allows for exploration of thoughts and behaviour and reveals people's values, interpretative schemes, mind maps and belief systems in their constructs of reality (Cavana et al. 2001 p. 34). Qualitative research acknowledges that viewpoints and practices in the field are different and based upon individual subjective perspectives and social backgrounds (Flick 2006). Given the objective of this study, the qualitative approach is well-suited as the primary approach.

Case study research can include single and multiple case studies, as well as qualitative and quantitative evidence. The evidence derived from multiple case studies is often considered more compelling and the overall study is considered more vigorous (Yin 2003). This study applies multiple case studies and the criteria for case selection include the following:

- Local government councils
- South East Queensland
- Regional councils

Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council are included as the major cases for this study; each with three strategy groups per case as embedded cases to form a total of nine cases. Cross-case analysis is applied to enable comparison of the nine cases. To overcome the effects of information-processing biases and to capture novel findings, Eisenhardt (1989) proposes cross-case comparisons through the use of structured and diverse lenses on the data. Cross-case analysis enables the comparison of multiple cases in many different ways. Cases can be compared against predefined categories in search of patterns of similarities and differences, or by classifying the data according to data sources.

For data analysis, three methods are applied and include: electronic content analysis through Leximancer Software program, qualitative content analysis, and documentary analysis. With Leximancer, actionable meaning is extracted from textual documents to visually display a conceptual map showing the main concepts that are found within the text. This type of data analysis is appropriate in this study.

To explore the meanings underlying the textual messages, qualitative content analysis is applied as a second method of analysis. Thirdly, documentary analysis based on the corporate plans of each of the cases is executed. The results obtained from these methods are triangulated to ensure stronger validation of concepts.

1.6 Key definitions and terminologies

Term	Definition	Sources
Strategic thinking	Strategic thinking is the creative development of strategic options for the long-term direction of an organisation.	(Bonn 2001; Graetz 2002; Mintzberg 1994)
Mental models of strategic thinking	Mental models of strategic thinking include individual and shared mental models of strategic thinking of employees about the long-term direction of an organisation.	(Dundon 2005; Johnson-Laird 1983; Norman 1983; Stumpf 1989)
Shared mental models of strategic thinking	Shared mental models of strategic thinking present the organised understanding of <ul style="list-style-type: none"> • the task of developing options for the long-term direction of the organisation, and • the group involved in the task regarding mutual expectations and complementary task behaviour. 	(Klimoski & Mohammed 1994; Kraiger & Wenzel 1997; Mathieu et al. 2005; Mohammed, Klimoski & Rentsch 2000; Webber et al. 2000)
Shared task mental models	‘Shared task mental models’ is one of the two subsets of shared mental models of strategic thinking and include a shared organised understanding to the task of strategic thinking. The term ‘group mental model’ is used by some researchers to refer to shared task mental models.	(Klimoski & Mohammed 1994)
Shared group-functioning mental models (term developed for this study)	‘Shared group-functioning mental models’ is the other subset of shared mental models of strategic thinking and include shared beliefs and perceptions about how the group interacts and also about group members (their knowledge, skills, strengths, weaknesses) and their roles in the group. Because the term ‘group mental models’ is used in the literature by some researchers to refer to shared mental models of a group and by other researchers to refer to the subset of shared mental models, the researcher developed the term ‘shared group-functioning mental models’ to avoid confusion.	(Klimoski & Mohammed 1994)

1.7 Ethical considerations

The study has been endorsed by the USQ Human Research Ethics Committee and full ethical clearance for this study, according to the appropriate processes, has been granted on 29/11/2008.

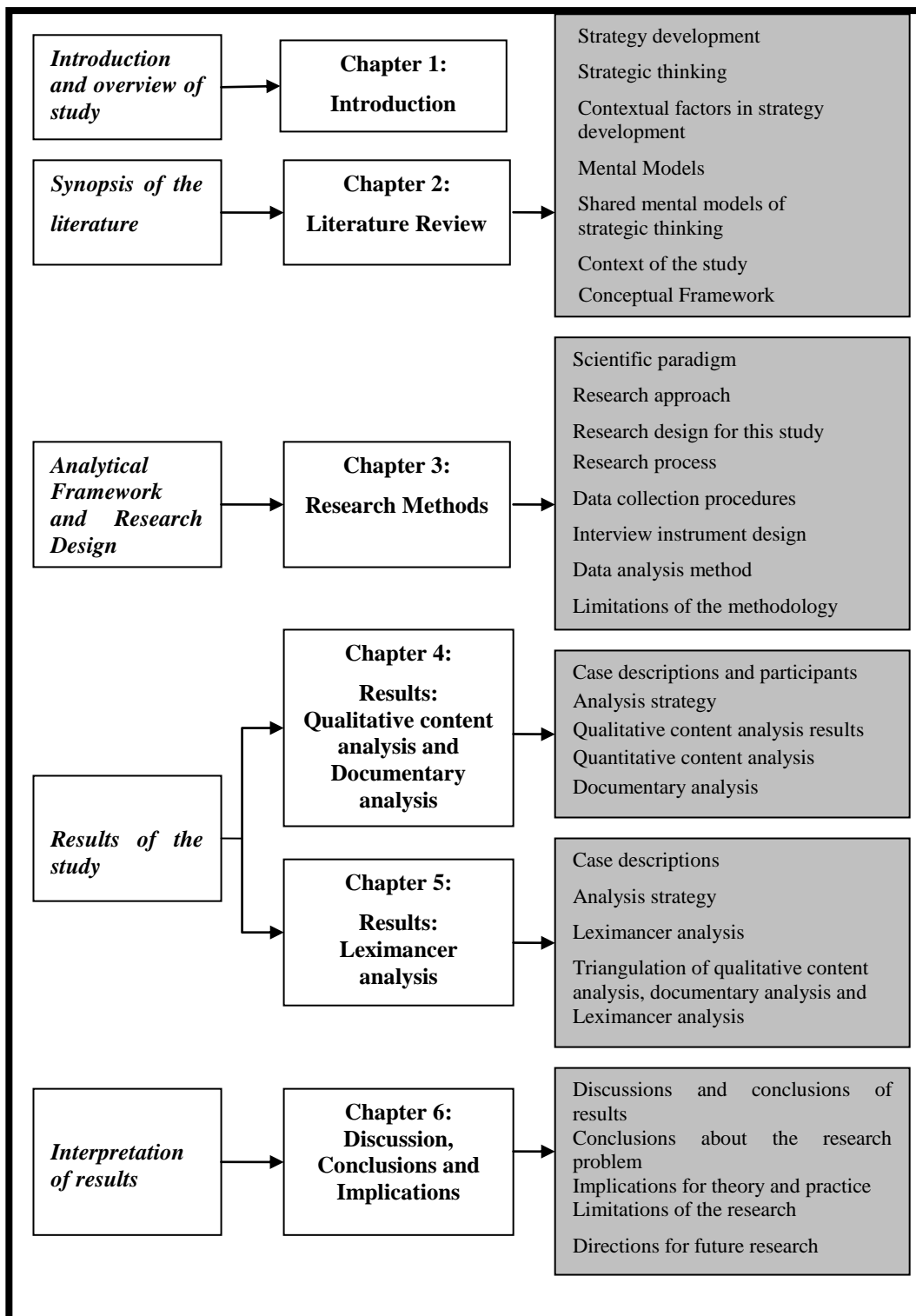
1.8 Delimitations of the scope and key assumptions

This study is based on findings of three regional councils (including the pilot study) within South East Queensland which limits the scope of the study. Only the major strategy groups in these councils are included: the mayor and councillors groups, the senior management groups (Chief Executive Officer and Directors) and staff of the Strategic Services departments. Other strategy groups within and across departments were excluded to reduce the scope of the project to a manageable size.

Although this study includes three different regional councils (Toowoomba, Dalby and Lockyer Valley) the aim is not to compare the mental models of strategic thinking between the regional councils but, rather, to explore mental models of strategic thinking in the major strategy groups. Therefore, the results of the study are not reported for individual regional councils, but for the major strategy groups.

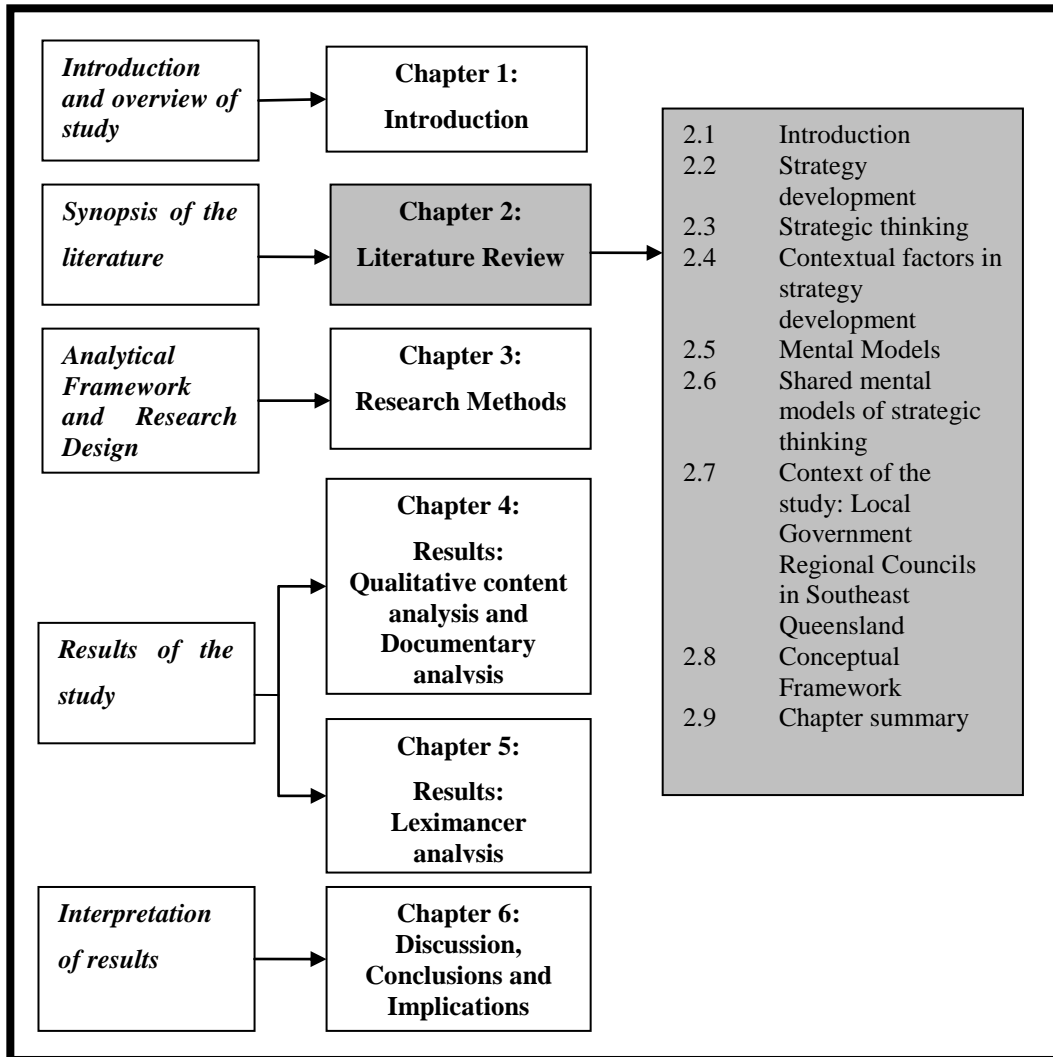
1.9 Structure of the dissertation

This dissertation is structured into six chapters and the following diagram provides the framework for the dissertation:



Chapter 2

Literature Review



2.1 Introduction

As the research questions focus on the role of shared mental models of strategic thinking on strategy development in organisations, this chapter builds the theoretical foundation upon which the study is based by reviewing the literature

related to the main components of the study, namely strategy development in organisations, strategic thinking and shared mental models. This chapter commences with a discussion about strategy development that is followed by a section on strategic thinking. Next, the contextual factors related to strategy development are addressed. The following section introduces mental models, and ‘mental models of strategic thinking’ is then explored. After addressing the main components of the study; the context of the study, namely local government regional councils in South East Queensland, is considered. Finally, the conceptual framework for the study is presented and discussed.

2.2 Strategy development

One of the issues addressed in this study is the different ways in which strategy develops in organisations (Johnson et al. 2005). Traditionally, the strategy process is viewed as a rational planning process that commences at top-management level where action plans are developed and cascaded down in the organisation to be implemented at all levels (Child 1972). This relates to the ‘entrepreneurial mode’ that Mintzberg (1973 p. 44) describes as ‘one strong leader takes bold, risky actions on behalf of his organization’. Other modes of strategy development include the adaptive mode where organisations incrementally adapt to changes in the fast changing environment; and the planning mode where formal analysis is applied to plan specific strategies for the future (Mintzberg 1973).

Strategy development can be classified in two main types, namely, intended strategies, or as Mintzberg (1994) labels it, deliberate strategies; and emergent strategies. Intended strategies, as described by Ansoff (1991), are those intentional strategies that arise as result of careful deliberation of the desired long-term direction of the organisation. This approach follows the rational model of decision-making and implies that decision-making is based on thorough analysis (Ansoff 1965; Hart 1992; Hofer & Schendel 1978). Emergent strategies (Mintzberg 1994), on the other hand, are those strategies that are not the outflow of some grand plan, but strategies that develop over time: they come about through everyday activities and actions that lead to decisions about the long-term

direction of the organisation (Johnson et al. 2008). Researchers realised that although strategists set the ultimate direction for their organisation, they have no control over changes taking place over time in the internal and external environment and therefore they introduced the concept of emergent strategies or incrementalism (Mintzberg 1994; Quinn 1978). The emergent process relies on top management to adapt the organisation's vision for the ultimate direction for organisations as the environment changes (Nonaka 1988). When compared, the deliberate or intended strategies can be characterised as rigid and mechanistic and following a top-down approach, whereas the emergent process is described as flexible and empowering and more informal (Dibrell, Down & Bull 2007). Hamel and Prahalad (1993 p.84) acknowledge the importance of both a 'grand plan' (intended strategy) and incrementalism (emergent strategy), but include the notion of 'strategy as stretch' to bridge the gap between intended strategy and emergent strategy. Their view on 'strategy as stretch' recognises the paradox of competition; that to be the leader in the market requires developing deliberate plans but, on the other hand, it cannot be planned for (Hamel & Prahalad 1993). They argue that the single most important task for senior management is to create stretch, a misfit between resources and aspirations (Hamel & Prahalad 1993 p.78). This will drive organisations to achieve more with their current resources and increase efficiency. This study centres on intended strategies and more specifically, the focus is on mental models of strategic thinking that strategy makers apply in developing the long-term direction of the organisation. The intended strategies entail thinking about how to achieve sustainable competitive advantage through applying the 'stretch' that Hamel and Prahalad (1993) refers to. Within this setting, strategic thinking concentrates on deliberate and intentional thinking about options for the long-term development of the organisation, creating an overall vision for the organisation.

During the past period of economic stability and growth, strategy making included the development of top-down corporate plans and the monitoring of those plans to ensure that organisational goals have been achieved (Dunphy, Griffiths & Benn 2007). The aim of strategy development was to create the strategic intent of an organisation—to identify a position that the organisation

wants to achieve in the long term (Hubbard et al. 2008). In the current period of economic instability and rapid changes in the environment, the approach to strategy making has changed. One of the most important challenges today is consideration of the impact that the organisation will have on all stakeholders and the impact on the environment, including social and environmental sustainability (Dunphy, Griffiths & Benn 2007). The term ‘sustainability’ is used to refer to this aspect: balancing the quest to meet stakeholders’ needs with the impact that this will have on the environment and communities in the future (Hubbard et al. 2008). Dunphy et al. (2007) argue that a sustainable world can only be achieved with the establishment of creative alliances between organisations, citizens and governments. In this regard, they identify phases that organisations go through in how they treat and employ the natural resources it utilises. These phases range from the historic approach towards human and natural resources as exploitable sources for immediate economic gain, to the final phase of organisations working towards a sustainable world (Dunphy, Griffiths & Benn 2007). Organisational success is viewed as much more than just economic success, and measurement processes such as the ‘triple bottom line’ were developed to measure the environmental, social and community performance of the organisation (Hubbard et al. 2008 p.144). These aspects must be closely aligned to the organisational strategy. Human and ecological sustainability are fundamental issues in strategy development and strategic thinking (Dunphy, Griffiths & Benn 2007) and will be addressed in more detail later in this chapter.

The term ‘strategy development’ comprises terms such as ‘strategic management’ and ‘strategic planning’ and although these terms are directly related to strategy development, they refer to different aspects of strategy development and cannot be used interchangeably. The following two subsections define these terms, but do not provide an extensive analysis as the focus is on mental models of strategic thinking.

2.2.1 Strategic management

Although strategic management has been studied for a number of decades, it is a relatively young academic discipline (Nerur, Rasheed & Natarajan 2008). During the early 1960s, researchers such as Chandler, Ansoff and Rumelt became interested in corporate planning of organisations and published the following works: ‘Strategy and Structure’ (Chandler 1962), ‘Corporate Strategy’ (Ansoff 1965) and ‘Strategy, Structure and Economic Performance (Rumelt 1974). Corporate planning focused on tools and techniques to assist in business decisions and direction (Whittington 1996). This developed during the 1970s into investigation and a research orientation towards diversification and portfolio planning in response to the individualised, normative prescription that was previously followed (Furrer, Thomas & Goussevskaia 2008). It continued into the 1980s with a focus on core business planning (Kay, McKiernan & Faulkner 2006; Rumelt, Schendel & Teece 1995). During this period, researchers were interested in investigating how organisations approach strategic changes and implement those changes (Whittington 1996). This approach developed into the ‘strategy-as-practice’ approach (Whittington 1996 p.732) where the fast changing world demands a practical approach to strategy and researchers became interested in how practitioners and managers actually develop strategy. This approach emphasizes human activity and how strategy making is implemented in practice (Chia 2004; Chia & MacKay 2007) and links to strategic thinking. This approach shifts concern from the competencies of the organisation to the competencies of the manager as strategist (Hendry 2000; Whittington et al. 2006) and the social interaction in accomplishing strategy making (Hendry & Seidl 2003; Jarzabkowski, Balogun & Seidl 2007).

Chandler, as one of the first to explain strategy as a descriptive concept, defined strategy in 1962 as ‘the determination of the basic long-term goals and objectives of the enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals’ (Snow & Hambrick 1980 p.528). This definition includes the most important components of strategic management as it is understood today. These are the cognitive aspects in the formulation phase and the action component in the implementation phase (Snow & Hambrick

1980). Hambrick views strategy as a pattern of important decisions that (a) guides the organization in its relationships with its environment, (b) affects the internal structure and processes of the organization, and (c) centrally affects the organization's performance (Hambrick 1980). In follow-up research, Cho and Hambrick (2006) posit that the psychological and demographical attributes of executives translate into organisational outcomes. This important finding also link specifically to the concept of mental models of strategic thinking that is addressed in detail later in this chapter.

The term used in more recent research to explain strategy is strategic management. Strategic management developed from a simple approach of providing answers to managerial questions to a rigorous search for intellectual foundations with explanatory and predictive value (Furrer, Thomas & Goussevskaja 2008). Strategic management involves understanding the strategic position of an organisation in the environment, the strategic capabilities and the expectations of the stakeholders, making strategic choices for the future, and implementing strategies (Johnson et al. 2008). Hill, Jones, Galvin and Haidar (2007) describe strategic management as a process by which top managers select and implement a set of strategies for their organisation. These authors view strategy as part of a formal planning process. The strategic management process includes the obligations, decisions and actions required to achieve strategic competitiveness (Hanson et al. 2008).

A popular way of describing strategic management is through the resource-based view where resources are viewed as important antecedents to production of goods or services and resources are directly related to organisational performance (Priem & Butler 2001). Supporters of this view link the application of resources of the organisation directly to competitive advantage. Eisenhardt and Sull (2001 p.108) describe the resource-based view as 'traditional strategy' where advantage comes from exploiting resources or stable market positions. The resource-based view contrasts sharply with Hamel and Prahalad's (2005 p.148) work on 'strategic intent' as part of strategic management. They argue that organisations that achieved global leadership over the past twenty years had ambitions or intent

that were far bigger than their resources and capabilities. Strategic intent 'envisions a desired leadership position and establishes the criterion the organization will use to chart its progress' (Hamel & Prahalad 2005 p.150). Through applying creative thought with respect to means, it stretches current resources and capabilities. Another contrasting view to the resource-based view is the 'strategy as simple rules' approach that Eisenhardt and Sull described as building competitive advantage from 'successfully seizing fleeting opportunities' (Eisenhardt & Sull 2001 p.108). This approach is based on the view that competitive advantage can be achieved when opportunities arise during market confusion and organisations purposefully look for opportunities in chaotic markets by applying flexibility and adapting to changing circumstances.

Although strategy is viewed from different perspectives (resource-based, strategic intent and strategy as simple rules), there is an underlying mutual understanding of strategic management. Strategic management is described as the process of selecting strategies based on internal and external analyses, to achieve competitive advantage, planning how to accomplish those strategies and implementing the plans. The planning aspect is explained in the next section.

2.2.2 Strategic planning

After exploring strategic management literature, Heracleous (1998) concludes that although it is acknowledged that strategic planning and strategic thinking are different models of thinking and that strategic thinking precedes strategic planning, there is no agreement on what strategic planning is and what strategic thinking is. Following from this view, he argues that planning follows strategy formulation, planning is a formalised and analytical process and planning cannot produce strategies (Heracleous 1998). Strategic planning is part of the strategic management process (Hill et al. 2007) and entails 'systematised, step-by-step, chronological procedures to develop or coordinate an organisation's strategy' (Johnson et al. 2008 p. 857). Acur and Englyst (2006) view these procedures as success criteria for strategic planning. They argue that information gathering during the strategy formulation process is essential to enable decision makers to revise and reconsider strategic issues for strategic planning. This is supported by

Heracleous' view that the real purpose of strategic planning is to facilitate strategic thinking (Heracleous 1998 p. 482). Furthermore, the construct of a clear, written action plan, objectives and procedures, as well as delegation of responsibilities for strategy implementation, are seen as important success criteria for strategic planning (Acur & Englyst 2006). Mintzberg (1994) views strategic planning as analysis: breaking organisational goals down into steps and actions. He expresses the role of strategic planning as 'to realise and support strategies developed through strategic thinking process and integrate these back into the business' (Graetz 2002 p. 457). Strategic planning is viewed as a process of operationalising the future vision of the organisation by articulating strategies at corporate, business and functional level and the developing of action plans in a step-by-step manner.

Strategic management can be viewed as the process of selecting strategies for the organisation; and strategic planning as the implementation plan of those strategies. When the process of strategic management is explored, another concept is added to the strategy development process, namely, strategic thinking. Strategic thinking plays a key role in strategy development and also in this study and the following section addresses this important concept.

2.3 Strategic thinking

Strategic planning and strategic thinking are two different concepts (Bonn 2001; Garratt 1995; Heracleous 1998; Mintzberg 1994). Strategic planning is explained as the planning and formalisation of existing strategies, whereas strategic thinking is defined as creating new perspectives and vision of direction for the organisation. Strategic thinking can be considered as a combination of 'strategy' and 'thinking'. Strategy is described as an integrated and coordinated set of commitments and actions (Hanson et al. 2005) that have a medium to long-term impact on an organisation (Hubbard et al. 2008) seeking to exploit core competencies (Hanson et al. 2005) and aimed at achieving competitive advantage (Grant 2005; Hanson et al. 2005; Hubbard et al. 2008). Ireland and Hitt (2005)

explain that competitive advantage is achieved when strategic leadership processes are created that are difficult for competitors to understand and imitate. 'Thinking', on the other hand, is defined from a psychology perspective as a cognitive activity, including activities such as reasoning, decision-making and problem solving aimed at creating productive ideas or conclusions about something (Ericksson & Hastie 1994).

When 'strategy' is connected to 'thinking', within the context of organisations, strategic thinking is defined as a clear mental picture of the future of the organisation and the individual's role in the larger system (Liedtka 1998), focused on problem solving and understanding the wider business context (Wilson 1994) and involving internal and external stakeholders (Mintzberg 1994). This requires an engagement of the cognitive activities of the individual strategic thinker. Nadkarni and Barr (2008) emphasize the cognitive aspects in strategic management and posit that it is the subjective cognitive representations of decision-makers and not the objective environments that directly influence an organisation's strategic priorities. Not only does the cognitive aspects of decision-makers impact on the strategic priorities, the decision-makers' personal characteristics are also translated into strategic outcomes via the mediating role of managerial action (Cho & Hambrick 2006). These cognitive activities need to be structured into a strategic reasoning process which requires certain cognitive abilities, simplification models (mental models) and specific cognitive activities (reasoning) (De Wit & Meyer 2005). Strategic thinking entails the process of finding alternative ways of competing, and providing customer value (Abraham 2005) through a process of creative, intuitive, dynamic and responsive thinking (Graetz 2002; Mintzberg 1994) combined with rational, analytical and convergent approaches to problem solving (Bonn, 2001). Strategic thinking is explained as finding a vision for an organisation by obtaining continual strengthening for the vision (Pellegrino & Carbo 2001). Dundon (2005 p. 16) aptly defines it as '...connecting creativity with value... seeing the bigger picture, knowing the effect a change in one area will have on the other parts...look to the future, explore the opportunities and then develop a vision of what you what to be in the future'.

Strategic thinking is part of the strategy development process and occurs before strategy formulation; it guides strategy formulation and implementation and it influences and is influenced by the strategic planning process (Bonn 2001; Mintzberg 1994). Before the strategic plan can be developed, the strategy makers should think strategically about the core dilemmas that the organisation will face in the future; reflecting on the deepest nature of these dilemmas and the central challenges that they pose (Senge et al. 1994). These challenges include consideration of factors related to the triple bottom line and the impact the organisation will have on the environment, communities and society; incorporating sustainability into the thinking processes of strategy makers (Hubbard et al. 2008). Because traditional values in organisations were often not directed at sustainability of society and the planet—leading to a situation where life on our planet is currently under threat from humanity—it is crucial that strategic thinking in organisations be transformed (Dunphy, Griffiths & Benn 2007). Dunphy et al. (2007) contend that leadership within and outside organisations has to bring about change by transforming their thinking to focus on the future and take responsibility for the interests of more than their own organisation. This is the essence of strategic thinking. Strategic thinking is the development of a vision and direction for the organisation and includes consideration of capabilities that are future-oriented and dynamic, but also include consideration of the natural environment. The long-term direction of an organisation needs to be considered before the planning process of identifying specific steps to accomplish the organisational goals and breaking down of organisational goals into tasks can commence (Graetz 2002).

Linked to arguments supporting strategic intent, some researchers argue for an integration of entrepreneurial and strategic thinking (Hitt et al. 2001). They defined entrepreneurship as ‘the identification and exploitation of previously unexploited opportunities...(it) entails creating new resources or combining existing resources in new ways to develop and commercialize new products, move into new markets, and/or service new customers’ (Hitt et al. 2001 p. 480). Strategic entrepreneurship is seen as the creation of new and viable options for

the direction of organisations and the development of actions to accomplish these options (Venkataraman & Sarasvanthy 2001). Compared to definitions of strategic thinking (Abraham 2005; Dundon 2005; Graetz 2002; Mintzberg 1994; Pellegrino & Carbo 2001), it is argued that the aims of strategic entrepreneurship are similar to those of strategic thinking.

While strategic planning is a rational process requiring analysis skills in planning how to accomplish the organisational strategy, strategic thinking also includes thinking, intuition and creativity (Graetz 2002; Mintzberg 1994). Strategic thinking is viewed as ‘...synthesis. It involves intuition and creativity. The outcome of strategic thinking is ‘an integrated perspective of the enterprise, a not-too-precisely articulated vision of direction’ (Mintzberg 1994 p. 107). Strategic planning and strategic thinking are thus distinct but interrelated: they complement and sustain each other and are both essential in effective strategic management (Graetz 2002). The role of strategic thinking is ‘to seek innovation and imagine new and very different futures that may lead a company to redefine its core strategies and even its industry’ (Graetz 2002 p. 457). The importance of strategic thinking in the strategic management process is clear—the strategic plan is the result of an extensive and creative process of considering multiple options for the long-term direction of an organisation, that is, strategic thinking.

2.3.1 Strategic thinking and operational thinking

In practice, the term ‘strategic thinking’ is often used incorrectly to refer to operational thinking. Operational thinking is not synonymous to strategic thinking (Bates & Dillard 1993), but applies to day-to-day operational strategies that are concerned with delivering current corporate strategies through the application of resources, people and processes (Johnson et al. 2008). Operational thinking considers how long-term improvements in the current work area can be made through developing better processes and procedures, and increasing effectiveness and efficiency in the tasks allocated to them (Johnson et al. 2005). Therefore, it pertains to thinking about the most effective ways to accomplish corporate strategies. In contrast, strategic thinking entails a shift from process-

orientated tactics to a future-orientated approach to deal with issues of the future and survival (Hanford 1995). Strategic thinking requires creative thinking and to enable the development of strategic initiatives, operational thinking cannot dominate; both need to co-exist (Dunphy, Griffiths & Benn 2007). In this regard, Porter (1996 p. 61) warns against substituting strategy for operational effectiveness. He claims that management tools such as reengineering, benchmarking, total quality management and change management have taken the place of strategy, and has taken the attention away from finding viable competitive positions. Although operational effectiveness is essential for superior performance, Porter argues that it is not strategy (Porter 1996). Where operational effectiveness provides the platform for change, flexibility and efforts to achieve best practice, strategy is the platform for defining a unique position, reinforcing and extending the organisation's position (Porter 1996). Strategic thinking is required to consider the organisation's position.

Strategic thinking and operational thinking require different orientations and skills, but competencies in both are essential for sustainable organisational success. The main differences between strategic and operational thinking are as follows:

Strategic thinking deals with proactively seeking and exploring the future in the longer term, applying reflective learning in an abstract context and following a helicopter perspective. Strategic thinking requires a 'hands-off' approach towards operations while focusing on conceptual issues. Operational thinking, on the other hand, entails thinking about concrete actions to address day-to-day operational problems or issues related to organisational effectiveness, following a 'hands-on' approach and ground perspective in finding ways to accomplish the organisational strategies (Hanford 1995).

Following from the distinction between strategic and operational thinking, it is concluded that these are different concepts and that the terms 'strategic thinking' and 'operational thinking' cannot be used interchangeably. Apart from the characteristics mentioned in the above comparison, strategic thinking is

characterised by specific elements and these elements are investigated in the following section.

2.3.2 Elements of strategic thinking

Several research studies on strategic thinking reveal sets of key elements of strategic thinking and there is a high level of overlap among these sets of elements. For this study, it is important to develop a set of key elements of strategic thinking. The elements play an important role in the mental models of strategic thinking as they provide a foundation for the task of strategic thinking. Mental models of the task of strategic thinking are established around these issues.

Table 1.2 provides an overview of the main elements of strategic thinking as presented by Venkatraman (1989), Liedtka (1998), Graetz (2002), O'Shannassy (2003) and Acur and Englyst (2006). Different terms are used by researchers to represent the essential characteristics of strategic thinking. These terms include 'dimensions' (Venkatraman), 'elements' (Liedtka), 'individual correlates' (Graetz), 'elements' (O'Shannassy) and 'success criteria' (Acur & Englyst). Also included in this table is a set of elements derived from the overlap of the elements identified by these researchers that will be used in this study. First, an overview of these researchers' approaches is given, followed by Table 1.2 presenting the details of each researcher's elements, after which the elements selected for this study are further investigated.

Venkatraman (1989) contributes to the measurement stream of strategic management research with his set of operational measures for the strategy construct that can be used by other researchers for theory testing. He posits that measure development cannot be separated from the broader theoretical network and, therefore, he identifies key traits or dimensions for the strategy construct. Because the strategy concept can be interpreted in many ways, Venkatraman delineates the strategy construct in terms of four premises. The first premise is that strategies aim to achieve desired goals; secondly, business-level strategies are more appropriate and useful for analysis; thirdly, a holistic approach to study

all organisational parts is appropriate; and, fourthly, the focus of the strategy construct is on realised strategies.

It is important to note that Venkatraman focuses on the *strategy construct* and not specifically on *strategic thinking*. For strategic thinking, the focus is on considering the long-term direction of the organisation before strategic planning commences, and this implies that strategic thinking is focused on the development of creative new options for the long-term vision (Graetz 2002; Mintzberg 1994; Senge et al. 1994), rather than on developing strategies to achieve those goals (Venkatraman's first premise). Furthermore, although strategic thinking may take place on different organisational levels, it is centred on the corporate level (Hanson et al. 2008; Johnson et al. 2005; Schermerhorn et al. 2004), not the business level (Venkatraman's second premise). Finally, strategic thinking is linked to intended strategies rather than realised strategies (Venkatraman's fourth premise) and the focus is on the desired strategic direction (Dundon 2005; Pellegrino & Carbo 2001), rather than the strategy that is actually followed in practice.

Although Venkatraman's (1989) operational measures have been found reliable and valid, they apply to the *strategy construct* as explained above and not particularly to *strategic thinking*. Therefore, operational measures related to *strategic thinking* are carefully selected from the set of operational measures appropriate for the *strategy construct* by comparing the dimensions to elements of strategic thinking as identified by other researchers.

In contrast to Venkatraman's focus on the strategy construct, Liedtka's (1998) research is focused specifically on the concept of strategic thinking. Liedtka supports Mintzberg's view that strategic thinking is a particular way of thinking rather than using the term interchangeably with other concepts such as strategic management or strategic planning. Because she views strategic thinking as a particular mode of thinking, specific characteristics or attributes can be related to this. These characteristics are presented by Liedtka (1998) as the elements of strategic thinking.

Graetz' (2002) research is based on Mintzberg's view of strategic thinking as intuitive, innovative and creative thinking (1994), Liedtka's (1998) characteristics of strategic thinking (elements) and Heracleous' (1998) belief that strategic thinking is a distinct thought process. Graetz argues that to study strategic thinking in organisations, the characteristics of the individuals involved need to be investigated, as the ability to think strategically depends on the interaction between the characteristics of the individuals and the organisational context. Graetz (2002) identifies four individual correlates of strategic thinking related to individual abilities. These abilities include the ability to identify external opportunities and integrate it into the business, to build multiple options, to think laterally and intuitively and to deal with novelty and ambiguity (Graetz 2002 p.458). These abilities coincide closely with two of the elements identified by Liedtka, namely the intent-driven focus of the organisation and the hypothesis-driven approach, including creative and analytical thinking (1998 p.122-3). Liedtka's (1998) second element regarding thinking holistically and having a systems perspective is not directly addressed, although Graetz's third element may imply this with 'interpret and evaluate events and determine what action needs to be taken' (2002 p.458). Also, Liedtka's element about thinking long-term and about the future (1998) is not directly addressed, but Graetz may imply this in her element 'see external opportunities and integrate these back into the business' (2002 p.458).

A further interesting contribution is Graetz's (2002 p. 458) identification of the organisational context's impact on the 'creative spirit' of employees within the organisation. She argues that situational factors can make or break the creative spirit in organisations and identifies issues such as the encouragement of new ideas and inputs into strategic thinking and planning, and employee participation in change and innovation, as contributing to the development of a creative spirit among employees. Although these issues are mentioned in the purpose of her study, it is not clear how it was dealt with in her methodology.

O'Shannassy (2003) follows Graetz's approach and identifies five elements of strategic thinking that are based on Mintzberg's (1994), Liedtka's (1998) and

Heracleous' (1998) work. His focus is also on identifying characteristics of strategic thinkers and requirements for strategic thinking. Apart from personal characteristics, he indicates in his first element that organisations require access to flexible inputs that include flexible technology, flexible people, flexible structures and flexible systems and processes to support strategic thinking (2003). This links to Graetz's (2002) argument about the importance of the organisational context on strategic thinking. O'Shannassy does not identify an element that coincides directly with Liedtka's first element, the intent-driven focus towards competitive position, and Graetz's first element about seeking external opportunities that is also linked to competitive position. However, his reference to the need for flexible inputs to enable the organisation to respond to customers and markets implies indirectly that thinking about competitive position is also required.

The aim of Acur and Englyst's (2006) research is to develop a tool to proactively assess the strategy formulation process to ensure high quality outcomes. They identify three phases in the strategy formulation process that include strategic thinking, strategic planning and embedding of strategy. From an in-depth literature review, they selected key conclusions and reformulated this as success criteria. The success criteria describe issues related to strategic thinking and are closely correlated to the elements identified by the other researchers.

Table 2.1 provides a summary of the key elements of strategic thinking as presented by the researchers identified above. These elements provide the basis for investigating strategic thinking. After the table, these elements are discussed in more detail.

Table 2.1: Elements of strategic thinking

Venkatraman's six dimensions of the strategy construct (Venkatraman, N. 1989)	Liedtka's elements of strategic thinking (Liedtka 1998)	Graetz's individual correlates of strategic thinking (Graetz 2002) based on Liedtka's work	O'Shannassy's key elements (O'Shannassy 2003) drawing on the work of Liedtka	Success criteria for strategy formulation (Acur & Englyst 2006)	Proposed set of elements of strategic thinking for this study
<p>Aggressiveness : the posture adopted by a business in its allocation of resources for improving market positions at a relatively faster rate than the competitors in the chosen market</p> <p>Proactiveness: proactive behaviour in relation to participation in emerging industries, continuous search for market opportunities and experimentation with potential responses to the changing environmental trends</p>	<p>Intent-driven focus of the organisation; conveying a sense of direction, destiny and directed energy towards competitive position</p>	<p>See external opportunities and integrate these back to the business</p> <p>Build multiple, simultaneous alternatives – be comfortable working with a large range of options</p>		<ul style="list-style-type: none"> • Develop awareness of industry and competitors • Awareness of strengths and opportunities and how to exploit them • Confidence that the business is more successful as a result 	<p>Thinking about sustainable competitive advantage</p> <ul style="list-style-type: none"> • Customer value • Efficiency measures – cheaper, faster, smarter • Flexibility – adapt to changes quickly • Strategic proactivity – seeking competitive advantage through human and ecological sustainability (Dunphy, Griffiths & Benn 2007) • Seek new opportunities
<p>Analysis: the extent of tendency to search deeper for the roots of problems and to generate the best possible solution alternatives</p>	<p>Holistic view, systems perspective</p>		<ul style="list-style-type: none"> • The strategic thinker requires a clear mental picture of the complete system of value creation within the organisation and the individual's role with the larger system • Encourages the participation of internal and external stakeholders – employees given greater autonomy and responsibility 	<ul style="list-style-type: none"> • Decision-making through effective and adaptive process • The maintenance and understanding of changing organisational processes and procedures 	<p>Thinking holistically</p> <ul style="list-style-type: none"> • Systems thinking – how change in one component affects other • Understand process of value creation • Coordinated action

Venkatraman's six dimensions of the strategy construct (Venkatraman, N. 1989)	Liedtka's elements of strategic thinking (Liedtka 1998)	Graetz's individual correlates of strategic thinking (Graetz 2002) based on Liedtka's work	O'Shannassy's key elements (O'Shannassy 2003) drawing on the work of Liedtka	Success criteria for strategy formulation (Acur & Englyst 2006)	Proposed set of elements of strategic thinking for this study
Defensiveness: emphasis on cost reduction and efficiency seeking methods	Hypothesis-driven: strategic thinking is both creative and analytical. Hypothesis generation entails the creative question: "What if...?" and the hypothesis testing bears on the analysis of the "If..., then...?" question.	Think laterally and intuitively Deal with novelty and ambiguity, to interpret and evaluate events and determine what action needs to be taken.	<ul style="list-style-type: none"> Core focus is problem solving – systems perspective – all organisational levels- identifying problems, hypotheses or propositions for investigation within an understanding of the wider business context – using either or both intuition or analysis depending on needs 	<ul style="list-style-type: none"> Self-criticism regarding strengths, weaknesses, opportunities and threats Awareness of key problem areas 	Thinking analytically and creatively <ul style="list-style-type: none"> Developing new strategies rather than building on previous Develop alternative ways of competing – options for the long-term Focus on problem-solving through analysis of problem and developing creative solutions
Futurity: refers to the notion of 'desired future' and the process through which a business plans to reach the desired state	Intelligent opportunism: within the intent-driven focus, new opportunities must be recognised and possibilities for new strategies emerging must be accommodated Thinking in time: recognition that the future departed from the past, the past has predictive value for the future. Strategic thinking about the future also considers the history of the organisation.		<ul style="list-style-type: none"> Requires consideration of the past, present and future of the organisation, thinking in time A need for clear, direct intuitive understanding among employees of the future direction of the org, the strategic intent 	<ul style="list-style-type: none"> Understanding of the strategic priorities of top-management Learning from experience 	Thinking long-term about the future <ul style="list-style-type: none"> Connecting past, present & future Develop a vision of where the organisation will be in the future –desired future

Source: Developed for this study

After comparing, contrasting and reviewing the overlap in the sets of elements as outlined in the table above, a set of elements representing the elements of strategic thinking that are used in this study was developed (Malan, Erwee & Rose 2009). The column containing these elements is shaded yellow in Table 2.1. These elements are:

- Thinking about sustainable competitive advantage
- Thinking holistically
- Thinking analytically and creatively
- Thinking long-term about the future.

Each of these elements is now discussed in more detail. The first element, thinking about sustainable competitive advantage has an overarching effect on the other three elements and characterises the main objective of strategy development and, hence, will be discussed in more detail than the other elements.

Thinking about sustainable competitive advantage

Table 2.1 provided a comparison of the contents of each element according to various researchers. From this comparison it is clear that competitive advantage is a vital aspect of strategic thinking. The element identified by Liedtka (1998 p. 122) that is applicable here is ‘Intent-focused’; referring to an intent-driven focus for the organisation, expressing a sense of direction and destiny where all energies are directed to achieving a competitive position. Graetz (2002 p.458) explains this as seeing external opportunities and integrating them back to the business to enable the development of multiple, simultaneous alternatives. The success criteria developed by Acur and Englyst (2006 p.74)—and related to this element—include understanding the industry and competitors; awareness of strengths, weaknesses and opportunities and how to exploit them; and a confidence that the organisation will be more successful if these opportunities are utilised. The dimensions developed by Venkatraman (1989 p.959) that correspond to this element are ‘Aggressiveness’ and ‘Proactiveness’. ‘Aggressiveness’ refers to the stance adopted by the organisation in applying resources to improve market position at a faster pace than its competitors in the market. ‘Proactiveness’ entails a constant search for new market opportunities

and experimentation with potential responses to the changing environmental trends.

In this comparison, sustainable competitive advantage is considered as the way in which organisations can ensure a competitive market position. Competitive advantage addresses cost efficiencies and occurs in organisations when an organisation can provide the same products or services to its customers at a lower cost than its rivals, or provide better products or services at a similar cost (Grant 2005; Hill et al. 2007). Two aspects not clearly addressed in this comparison or the definitions of competitive advantage are that competitive advantage needs to be maintained over the long-run and that competitive advantage entails more than only economic success—the social and environmental implications must also be considered. Hamel and Prahalad (1994) explains that strategic thinking is focused on ensuring *ongoing* competitive advantage for the organisation and Hubbard et al. (2008 p.12) refers to *sustainability* as development that aims to meet the current needs of all stakeholders without compromising the ability to meet their needs in the future.

Sustainability was briefly addressed earlier in this chapter and refers to an enduring state of meeting economic, social and environmental demands (Dunphy, Griffiths & Benn 2007). Sustainability is an important issue for stakeholders these days and, in practice, it was found that sustainability reports have become increasingly essential because stakeholders demand information about the approaches that organisations take to manage their environmental, social and community impact (2003). With regard to competitive advantage, sustainability focuses on how organisations can achieve long-term success and out-perform rivals in a socially and environmentally responsible and sustainable manner.

Sustainable competitive advantage is created when an organisation is able to exercise strategic leadership in a competitively superior manner (Ireland & Hitt 2005) and occurs in the strategic proactivity phase (Dunphy, Griffiths & Benn 2007) where organisations contribute towards a fully sustainable society. This phase follows the efficiency phase where cost efficiency and simplification of product, process and service flows are required. The efficiency approach is

inadequate to achieve sustainable competitive advantage because it can be easily copied by competitors and, therefore, organisations need to progress to the strategic proactivity phase to fully achieve sustainable competitive advantage (Dunphy, Griffiths & Benn 2007). The term ‘strategic sustainability’ is defined as:

‘an organizational commitment to achieving competitive advantage through the strategic adoption and development of ecologically and socially supportive production processes, products and services and innovative human and knowledge resource management practices’ (Dunphy, Griffiths & Benn 2007 p. 156).

Dunphy et al. (2007) argue that strategic sustainable organisations are highly responsive to their environment, they apply innovative practices to address environmental issues and they are in close relationships with their communities. Handy (1989) argues that public sector organisations (such as regional councils) should be viewed not as the property owned by the current shareholders but as a community, including citizens pursuing a common purpose. Without the inputs from governments and communities, sustainability cannot be achieved. Community citizens (including organisational employees) rely on one another to create an environment in which knowledge is created and dispersed constantly and innovations occur regularly (Ireland & Hitt 2005). This requires cultural and behavioural shifts in organisations focused on development and utilisation of corporate competences in human and ecological areas and building relationships with communities. Ultimately, a strategic sustainability commitment by the board and executive team of an organisation must include the development of innovative, future-directed strategies by including all stakeholders—which, in turn, can lead to competitive advantage (Dunphy, Griffiths & Benn 2007).

To progress from the efficiency phase to the strategic proactivity phase, changes in mental models about how decision-makers think and value natural resources are required. By thinking about opportunities to increase cost efficiency through improved production methods and reducing waste; by building the capacity of employees through training and development; and by being flexible and

developing incorporating innovative ideas related to cost savings and elimination of waste, sustainable efficiencies can be gained. Dunphy et al. (2007) explain that sustainability hinges on both short-term gains through an emphasis on cost control; and longer-term gains through the development of human systems and cultural values to support value adding and innovation.

The challenge for efficiency approaches lies in integrating human and ecological efficiency and Dunphy et al. (2007) collected evidence that suggests that the quest for value-orientated eco-efficiencies depends upon simultaneous development of human capabilities. The first step is to develop mindsets focused on identifying new efficiency opportunities and develop capabilities for flexible responses to new challenges. Then human capabilities need to be developed and the skills and knowledge of each employee fully utilised. Finally, new systems and programs that will lead to increases in human capital need to be developed at the corporate level. Dunphy et al. (2007) find that senior managers need to advocate efficiency programs, and line managers must implement these measures aimed at building future human capabilities. The development of human capabilities centres around human resource management programs and operations and relies on integrated human resource information, development of multi-skilled work teams, culture change programs, virtual teams, networks and communities of practice (Dunphy, Griffiths & Benn 2007 p. 140).

The message from Dunphy et al. is clear—to achieve sustainable competitive advantage and be socially and environmentally responsible requires new ways of thinking about sustainability that need to be incorporated into the development of organisational strategy. This entails a transformation of thinking about effective organisational change that is centred in shared mental models. New attitudes and approaches towards human and natural resources need to be cultivated; and shared mental models about sustainability must be developed to support true commitment to human and ecological sustainability. This relates to the discussion in Section 2.5.2 about Shared Mental Models.

With regard to the context of this study, local government councils, the question arises to what extent have regional councils made the transition from an

organisation with a focus on efficiency to an organisation that focuses on strategic sustainability for competitive advantage. This will be further discussed in Chapter 6.

For this study, *thinking about sustainable competitive advantage* (see shaded column in Table 2.1) includes thinking about issues such as:

- production costs: finding ways to improve customer value while keeping the costs down at the same time;
- efficiency measures: finding ways to do things cheaper, faster or smarter;
- flexibility: finding ways to adapt to changes quickly and effectively;
- new opportunities: considering and experimenting with new technologies for producing goods and services at lower costs and higher quality; and
- strategic proactivity through human and ecological sustainability.

When employees apply strategic thinking to consider the long-term direction of their organisation, the abovementioned aspects influence their thinking about sustainable competitive advantage.

Thinking holistically

Thinking holistically about strategy refers to dealing with the organisation as a holistic system that integrates each part in relationship to the whole (Hanford 1995). It is about systems thinking: seeing the synergy of whole systems, rather than focusing on individual parts, and learning how to strengthen or change whole system patterns (Daft & Pirola-Merlo 2009 p. 135). It also spreads wider than the organisation—including external stakeholders as portrayed in the value network, and the inter-organisational links and relationships that impact on developing products and services (Johnson et al. 2008). When strategic thinking is applied, the organisation as a whole should be considered. How long-term options will impact on the organisation as a system needs to be taken into account. This also links to the previous section on sustainable competitive advantage where the wider community and environment are taken into consideration.

Liedtka (1998) uses the term ‘a systems perspective’ to refer to thinking holistically. Strategic thinkers consider vertical linkages and relationships within the system from different perspectives, including corporate, business and functional levels. Horizontal linkages are also considered, that is, the relationships and connections across departments, functions, suppliers and buyers. O’Shannassy (2003 p.55) refers to a ‘clear mental picture of the complete system of value creation within the organisation and the individual’s role within the larger system’. He acknowledges the importance of participation of internal and external stakeholders in strategic thinking. Success criteria applicable in thinking holistically include understanding the influence of changes in organisational processes and procedures, and following an adaptive process in decision-making (Acur & Englyst 2006 p.74). Venkatraman’s (1989 p. 959) ‘Analysis’ dimension is valid here; focusing on searching for the roots of problems by investigating different functional areas using information systems and control systems.

For this study, *thinking holistically* (see shaded column in Table 2.1) entails the following:

- systems thinking: how changes to one component affects other components;
- an understanding of the complete value network in the organisation, including horizontal and vertical intra-organisational networks, as well as inter-organisational networks; and
- co-ordinated action.

Thinking holistically is required when strategy makers develop options for the long-term direction of the organisation.

Thinking analytically and creatively

Strategic management relies on analytical approaches to provide information for understanding the strategic position of the organisation. The strategic position provides a representation of the impact of the external environment on the organisation, the internal capabilities of resources and competences within the

organisation, and also a view of the expectations and influences of stakeholders (Johnson et al. 2008 p.13). Although strategy analysis is an essential component of strategic thinking, it is not the only component required. As defined in Section 2.3, strategic thinking also requires synthesis and involves intuition and creativity (Mintzberg 1994) and, for developing strategic initiatives, creative thinking is essential (Dunphy, Griffiths & Benn 2007).

From the resource-based view of organisations it is contended that, in order to achieve competitive advantage, organisations must develop competencies or resources that are valuable, rare, inimitable and non-substitutable (Barney 1991). Miller (2003) argues that because organisations cannot achieve sustainable resources by copying others, they need to develop creative ways of competing with rivals. Strategic thinking is hypothesis driven, focused on generating ideas and testing options, and it spans the analytic-intuitive dichotomy that Mintzberg refers to (Liedtka 1998). It is not a linear step-by-step process because it requires nonlinear thinking (Ohmae 1982). It is also not a process that stakes everything on intuition, excluding real breakdown or analysis (Hussey 2001). The analysis involves breaking a situation or issue up into elements to reach a full understanding of the character of each element and then, using human brainpower, restructuring the elements in the most advantageous way (Ohmae 1982). Without thorough analysis and creative strategic thinking, successful strategies are difficult to construct: these two mindsets, operational thinking and creative thinking, need to coexist (Dunphy, Griffiths & Benn 2007). Creativity involves insight, imagination and adaptability which are human thinking qualities (Hussey 2001). In referring to creativity, Ohmae (1982) uses the term ‘mental elasticity’; an intellectual flexibility to come up with realistic responses to changing situations. Analysis guides creativity to the right problem and is used to ensure that ideas make business sense (Hussey 2001).

The element of strategic thinking that Liedtka (1998 p. 123-4) identifies as ‘Hypothesis-driven’ is connected to thinking analytically and creatively. She argues that strategic thinking is not a question of ‘either/or’ analysis and intuition, as both are required. Using the scientific method of hypothesis testing as a manner of strategic thinking, both creative and analytical thinking are applied

sequentially in generating and testing hypothesis. Graetz (2002) supports this view and adds ‘thinking laterally’ in dealing with innovation and uncertainty to interpret, evaluate and deal with environmental changes. This is in line with O’Shannassy’s (2003) view that the challenge is problem solving and the way to deal with it is to follow a systems perspective, develop hypotheses or propositions for investigation and use either, or both, intuition and analysis to solve these problems. In terms of success criteria for strategic thinking, Acur and Englyst (2006 p.74) identify awareness of key problem areas through self-criticism regarding strengths, weaknesses, opportunities and threats. The nature of exploring these issues is based on analysis and creativity. For Venkatraman (1989 p. 959), the ‘Defensiveness’ dimension applies—where the focus is on cost reduction and efficiency seeking methods, both analysis and creativity are required.

For this study, *thinking analytically and creatively* (see shaded column in Table 2.1) include the following:

- focusing on problem-solving through problem analysis and developing creative solutions;
- developing alternative ways of competing, to create different options for the long-term direction of the organisation and analysing these options to find the most suitable option; and
- considering the development of new strategies, rather than renewing or building upon previous strategies.

By applying both analytical and creative thinking, the disadvantages of applying either one or the other may be compensated for.

Thinking long-term about the future

One of the key issues related to strategic thinking, as derived from the definitions presented in Section 2.3, is ‘long-term’. Long-term relates to the future in this context. Strategy is about the future and the long-term effects of decisions made in the organisation. Again, this links to the element ‘sustainable competitive advantage’ as ‘sustainable’ refers to the maintenance of competitiveness over the

long-term. The duration of ‘long-term’ depends on the character of the industry: for high-tech industries two years may be considered long-term, whereas in other more stable industries, up to ten years may be long-term. As a rule of thumb, three years normally qualifies as long-term for most organisations (Hubbard et al. 2008 p. 3).

Two of Liedtka’s (1998 p.123) elements relate to thinking long-term about the future—‘Intelligent opportunism’ and ‘Thinking in time’. Intelligent opportunism addresses recognising new opportunities and accommodating possibilities for new strategies arising. ‘Thinking in time’ deals with thinking about the future by connecting the future to the present and the past. Liedtka argues that the future can only be created when it is recognised that it departed from the past and the past has predictive value for the future. The past, present and future are connected by strategic thinking. O’Shannassy (2003) supports the view that strategic thinking requires consideration of the past, present and future of the organisation, thinking in time. He includes the need for clear, direct and intuitive understanding among employees of the strategic intent of the organisation, the futuristic vision. Venkatraman’s (1989 p. 959) ‘Futurity Dimension’ addressed the notion of the ‘desired future’ that includes the processes organisations go through in reaching the desired state. With regard to the success criteria for strategic thinking (Acur & Englyst 2006 p. 75), ‘learning from experience’ connects the past and the future through the present and is relevant in this element. Also, ‘understanding of the strategic priorities of top-management’ relates to this element as strategic priorities have a futuristic and long-term focus.

For this study, *thinking long-term about the future* (see shaded column in Table 2.1) includes the following:

- recognising the influence of the past, present and future on long-term thinking; and
- developing a vision of the future of the organisation, the desired future.

From the review of various elements of strategic thinking, four major elements of strategic thinking are identified: thinking about sustainable competitive advantage, thinking holistically, thinking analytically and creatively, and thinking long-term about the future. These elements form the basis of the investigation of task mental models of strategic thinking that are addressed in Section 2.6.1.

Now that the elements of strategic thinking are established, the discussion moves to identify employees in organisations who are responsible for strategic thinking.

2.3.3 Role players in strategic thinking

At this point, strategic thinking has been defined and discussed and the elements related to strategic thinking applicable to this study have been distinguished. The issue that needs to be addressed next is who is responsible for strategic thinking in the organisation and on which organisational levels strategic thinking occurs.

There seems to be no consensus in the literature on whether strategic thinking should take place at the senior management level of the organisation (including the CEO and senior managers), or if employees from all organisational levels should be involved in strategic thinking. Tsoukas and Knudsen (2002) contend that there are different perspectives on who in an organisation sets strategy. The first perspective views strategy as being set by the CEO and a few selected individuals. The second perspective views strategy as being set by the planning system (administrative system of data collection and analysis involving employees throughout the organisation); and the third perspective views strategy formation as a social process, that is, a collective process involving relations of influence of employees (Tsoukas & Knudsen 2002).

A number of researchers argue that the organisation should ideally involve employees from all organisational levels in the strategy development process (Andrews 1995; DiVanna & Austin 2004; Guth & MacMillan 1986; Kosgaard, Schweiger & Sapienza 1995; Mintzberg 1990; Rhyne 1986; Wooldridge & Floyd 1990). Strategic thinking at multiple organisational levels is proposed as essential in creating and sustaining competitive advantage (Graetz 2002), but it is a skill that needs to be developed (DiVanna & Austin 2004). DiVanna and

Austin (2004) propose that all employees should develop a strategic mindset; a mindset of placing operational issues within the corporate goals and objectives framework. This approach suggests that employees throughout the organisation are actively involved in designing the future of the organisation (Dunphy, Griffiths & Benn 2007). It is proposed that top-management communicate organisational goals and priorities to all employees to ensure that they work towards the same corporate goals (Ketokivi & Castaner 2004; Mintzberg 1994; Wooldridge & Floyd 1990). This coincides with Hart's (1992) transactive mode of strategy making. According to this mode, strategy is developed through continuous interaction with employees throughout the organisation and other stakeholders. Lateral and vertical communication channels are used to accommodate employee involvement and a customer focus (Hart 1992). Issues within the goals framework are categorised as pertaining to long-term or short-term action items by individuals faced with the issue, and it is the task of the management team to prioritise the resource allocation to address these issues (DiVanna & Austin 2004). This approach suggests that strategic thinking within the organisation should occur on all organisational levels and it implies that all individuals, regardless of their organisational level, have the latent skills to think strategically about the organisation and are required to apply strategic thinking.

From another perspective, creating the long-term direction for the organisation (strategic thinking) is viewed as the responsibility of the strategic decision makers—the senior managers in an organisation (Ansoff 1965; Child 1972; Drucker 1970; Porter 1980). This follows the rational approach to strategy-making and can be described as 'the top-down model of strategy' where senior management formulates the strategy and then pushes it down through the organisation (Dunphy, Griffiths & Benn 2007 p. 154). This method of strategy-making includes high levels of information processing, formal data analysis, formalised strategic planning and detailed plans of action (Hart 1992). This mode requires top management to set the strategy and other organisational members to provide upward sharing of data and information (Hart 1992; Hofer & Schendel 1978). Dunphy et al. (2007) suggest major limitations to this approach related to assumptions that managers are rational decision makers who can

accurately predict future challenges; have a narrow focus of the environment to only include the competitive market environment while excluding the social and eco-environment; and focus only on the content of the plan while ignoring the process of achieving it. Theories about strategic choice (Child 1972) and upper echelon theory (Hambrick & Mason 1984) indicate that it is the role of top managers to integrate and interpret information for organisational level decisions. Although individuals throughout the organisation contribute to scanning and data processing, it is the top managers who determine the direction of an organisation (Nadkarni & Barr 2008). These managers have to ensure that an organisational strategy is created that will ensure sustainable competitive advantage for the organisation.

It would be expected that top-managers be selected and appointed for their ability to think strategically. Strategic thinking competencies include the specific attitudes, knowledge and skills that decision-makers should have (Garratt 1995). Crucial strategic thinking competencies identified by Linkow (1999) include reframing, scanning, abstracting, multivariate thinking, envisioning, inducting and evaluating. External factors required for competent strategic thinking include experience, selection and ‘smart luck’—which refer to making the right choices (Linkow 1999 p. 36). This is supported by the results of a qualitative study that found explicit work experiences (such as participating in strategic planning, starting a major organisational project, having a career mentor and serving as a CEO of an organisation) contribute to the development of an individual’s strategic thinking abilities (Goldman 2009).

Mintzberg (1995) explains that lateral and creative thinking skills are required for strategic thinking to foresee the expected future by seeing and understanding the past and seeing the bigger picture. These skills, combined with intuition, will provide top managers with the ability to envision future states as vivid visual images (Linkow 1999). These skills are normally not required from middle-managers or operational staff (Johnson et al. 2005). Employees are inclined to focus on their immediate goals of their position and organisational unit rather than on the overall organisational goals and this has a negative effect on the strategy process (Ketokivi & Castaner 2004).

Where individuals and strategy groups at top-management level are responsible for setting organisational strategy and the long-term direction of the organisation to ensure competitive advantage and sustainability, individuals and groups on the middle-management and operational levels of an organisation are responsible for tactical planning and the implementation of tactical strategies (Hanson et al. 2005; Johnson et al. 2005; Schermerhorn et al. 2004). Johnson et al. (2005) posit that the skills required from middle-managers and operational staff are more aligned to the specific tasks assigned to their position in the organisational hierarchy. Middle-managers are generally responsible for aligning the organisational goals received from top-management with operational tasks related to accomplishing those goals. Operational level staff are generally responsible for executing the specific operational tasks (Johnson et al. 2005).

Although there are different views about the specific role-players in strategic thinking, it is proposed in this study that different strategy groups are present in organisations and that each strategy group is making a specific contribution to strategic thinking. Therefore, the shared mental models of strategic thinking within and across strategy groups are investigated in this study. Because the focus of the study is on groups, the link between mental models theory and group formation processes is also investigated and related to the development of shared mental models. This aspect is discussed in Section 2.5.3.

Up to this point, the discussion on strategy development and strategic thinking has focused on organisations in general. Because this study addresses a particular category of organisations, that of local government, the next section will investigate the context of strategy development.

2.4 Contextual factors in strategy development

The development of concepts and theories of strategic management occur mainly within the context of the competitive environment that private organisations operate in because market-driven competition provides the foundation for understanding strategy (Hill et al. 2007). In mainstream strategic management literature, strategy development is generally focused on the private sector context

(De Wit & Meyer 2005; Grant 2005; Hanson et al. 2008), while others may include brief reference to the public sector (Hubbard et al. 2008; Johnson et al. 2008). It appears that further investigation and empirical studies specifically focused on public sector organisations is needed to clarify the concept of competition in public sector.

Differences between private and public sector

The private sector context is distinctly different from the public sector context and the major differences between private and public organisations can be related to markets and funding. Hill et al. (2007 p. 393) posit that private organisations are market organisations. Market organisations have ‘input markets’ where resources are obtained to produce their output, and ‘output markets’ where products/services are sold to voluntary buyers to fund their organisation with the profits. Public organisations, on the other hand, are not market organisations—they do not sell products to voluntary buyers and do not obtain their revenue from those they sell their products/services to (Nutt & Backoff 1992). Their funding is through donations, sponsors or the government (Hill et al. 2007). Another key difference between private and public sectors is the degree of political influence on decision-making. Public organisations are constrained by mandates and obligations, whereas private organisations are constrained by law and internal consensus (Nutt & Backoff 1992). While chief executive officers in private organisations make decisions to maximise value for key stakeholders, the general public is involved in decision making in public organisations which makes it difficult to get consensus on decisions from such a diverse group (Euske 2003). This leads to personal politics that influence these outcomes (Hubbard et al. 2008). Other differences between private and public sectors include political influence, public scrutiny, coercion, separation of powers, control over goals, different priorities of efficiency or social equity, red tape, the degree of personnel constraints and ease of measuring performance (Allison 1982; Hill et al. 2007). The main differences, however, are:

- private organisations compete with each other in specific industries; public organisations are expected to collaborate in

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- providing public services and because of statutory requirements; public organisations' autonomy is limited.
- private organisations deal with voluntary customers or clients; public organisations have the authority to exercise coercion.
 - private organisations deal with issues concerning their product/service; public organisations also have to deal with a variety of social concerns related to the wider community such as education, crime, poverty and racism.
 - in contrast to undisclosed private organisations, public organisations are required to make their strategies, plans and operations freely available to the public and open to scrutiny of all community members, the press and all judicial bodies.
 - private organisations are privately owned and answer to the owners of the organisation, but public organisations are owned by the whole society and are expected to take care of the social infrastructure.
 - power is concentrated at the top echelon in private organisations; public organisations are characterised by separation of powers. This means that the power is distributed among role players where the executive recommends strategies and policies, the legislature endorses these and the judiciary decides upon the implementation of it (Hill et al. 2007).

A number of researchers investigated differences between private and public sectors and Euske (2003) suggests that they should also focus on the similarities between sectors because all sectors are fundamentally alike in many aspects. By using arguments based on the differences between the public and private sector, some managers demonstrate that their organisations are unique and that solutions to their problems are also unique. By framing the organisation as 'unique', the applicability of solutions to the problems is limited and thereby useful change may be restrained (Euske 2003 p. 10). One of the major similarities between private and public sector is the collection and analysis of data that is used for decision-making. Regardless of the economic sector, senior managers need useful, relevant data to enable effective decision-making (Euske 2003). Although

it is important to acknowledge also the similarities between the private and public sector, the differences relating to the context of organisations do have a significant impact on the development of strategy and do need to be considered when investigating strategy development. Because this study is focused on strategy development in local government and local government is categorised as public sector, strategy development in the public sector is now further investigated.

Local Government Context

During the 1980's, the British Government launched a firm attempt at improving efficiency, effectiveness and economy (the "3E's") in government organisations by focusing on changing management styles, cost cutting and contracting out to increase competition (Rhodes 1991). This sparked the development of the New Public Management approach in the public sector. This approach has its roots in the 'new institutional economics' aiming to generate reform in the public sector based on contestability, user choice, transparency and incentive structures; but also in business-type management practices (Hood 1991 p.5). The New Public Management approach is encouraging public-sector organisations to outsource and downsize their service (Butler 2003) and has a particular impact on local governments in developing new strategies to ensure viable provision of services (Galera, Rodriquez & Hernandez 2008).

This creates a new challenge for senior local government managers - these managers now need managerial tools and competencies that were not required previously (Eden & Cropper 1992). Apart from the difficulties related to effectiveness and efficiency in delivering viable services, the additional challenge for local government is to ensure community participation and involvement in strategy development (Yang & Callahan 2007).

Yang and Callahan (2007) found that although local governments are open to develop mechanisms for community participation, they are less likely to incorporate community involvement in strategic decision making. The reason for this is that strategic decisions are viewed as more risky and may have an important effect on power in the council (Yang & Callahan 2007).

With regard to strategy development in local government, the elected officials (councillors) also have an impact. Elected officials, who want to appear as responsive to constituents, will demand greater transparency and accountability of the council employees and may get overly involved with operational matters (Nalbandian 2004). These elected officials play an important role in strategy development and because of the pressures to be re-elected for a next term, their contributions to developing a long term strategy for the council may be influenced by this. In contrast, council employees are employed by the council and their aim with regard to strategy development is to ensure the long-term success of the council. However, the council employees are fully aware that they serve the elected officials and that their recommendations can be supported or vetoed by these officials and that creates a degree of tension between these two parties who are actually required to work as a team (Feldman & Khademian 2002).

Strategy development in the public sector

The public sector plays a crucial role in world economies. In almost all countries in the world, including Australia, the public sector is one of the largest employers and affects everyone in numerous ways (Hill et al. 2007). Local government councils are categorised as public sector organisations.

According to a US study in 1997, fifty-two percent of cities had used community-based strategic planning during the past year (Berry 2007). The aim of community-based strategic planning is to develop agreement between citizens and businesses in the community to develop joint solutions to community problems. Moore (1995) contends that managers who engage in strategic management are creating public value. They do more than just carrying out the mandated services: through strategic management they help define what would be valuable for their business, engage the politics of their organisation to participate in defining public value, and reengineer how to accomplish those goals. Strategic management is important in public organisations, particularly government organisations, for several reasons. Hill et al. (2007) argue that because of the changing environment and rapid development in technology and globalisation, communities are demanding more and better services at lower

costs. Secondly, because government organisations are funded by government through taxation, the community insist on efficiency in these organisations and a better application of funding. Thirdly, government organisations need to focus on the output of their services, and serving public interest instead of an input driven focus on internal empire building and serving their own interests (Johnson et al. 2005). These reasons demand better ways of managing government organisations and strategic management is viewed as a tool to be used by governments to respond to these issues (Hill et al. 2007). Strategic planning with a focus on creative thinking can direct public sector managers in the complex terrains that they face (Berry 2007).

For public organisations, the challenge is to develop strategies to sustain the quality of its services within the agreed budget and to provide the best value services (Johnson et al. 2005). The strategy development process recommended for strategy development in public sector includes steps (Bryson 2004) that resemble Mintzberg's (1994) intended strategic planning process. These steps include: agreement on the planning effort, identification and clarification of the statutory framework, developing and clarifying mission and values, external and internal environmental assessment, identification of strategic issues, developing strategies to deal with the issues, and describing what the organisation should look like in the near future (Hill et al. 2007 p. 410). These steps represent a rational model of the strategy process and it is proposed that strategy makers move through the steps sequentially (Hill et al. 2007). The steps in this model are underpinned by strategic thinking.

Strategy development in local government councils

As with any other private or public organisation, councils in local government need to have a clear strategic vision and corporate strategies to guide the accomplishment of those strategies. Although public organisations often do not have 'competitors' as such, they do strive towards sustainable competitive advantage to ensure their survival (Hubbard et al. 2008). If private organisations do not perform successfully, they might be closed down, or their business

outsourced or privatised. Public organisations such as councils are largely dependent on financial and political support from the government and to grow and prosper, these councils compete with other councils for government funding to develop their regions to attract more residents and businesses (Hill et al. 2007).

Because of increasing financial pressures and service requirements in local government, there is a push for local government organisations to become more 'business-like', more efficient, improve the quality of services and become more market-oriented and customer-centred. Although these principles are sensible, it is important to understand that local government is unique and that attempts to import strategic management principles that are applicable to private organisations are misplaced (Worrall, Collinge & Bill 1998). The danger lies in reducing 'government' to 'service provision' and to substitute accountability to customers to accountability to the public. The challenge for councils is to find ways to become more strategic within the context of local government (Worrall et al. 1998). This context requires planning based on solid knowledge rather than on assumptions. Although discovery-driven planning may seem a tempting and powerful tool to use in fast-changing world, local government needs to value previous experience and knowledge to base their strategy-making practices on (McGrath & MacMillan 1995). The aim is to find a direction for council to deliver sustainable economic, social, environmental and cultural outcomes. This can be addressed through strategic thinking and is the focus of this study.

With regard to strategy makers in local government in Australia, it is suggested that mayors and councillors take part in formulating, adopting and reviewing the local government's corporate and operational plans; and the policies and goals of the local government (Local Government Australia 2001-2). To support these strategy makers, Marton (2001) suggests that the top management team of a local council plays a key role. He argues that top management play a role in coordinating the politics, policy and administration domains of councils and in the systematic development of individual councillors and the councillors as a group so that they are equipped to make appropriate decisions.

A USA survey of senior municipal officials in all jurisdictions with populations of 25,000 residents or more investigated the involvement of stakeholders in strategy development. The results indicated that senior municipal workers viewed the involvement of the city manager and heads of departments in strategy development as higher than the involvement of the mayor and councillors in this process (Poister & Streib 2005). These results are interesting because it is expected that the mayor and councillors, as the most senior council employees, have the highest involvement in strategy development. Similar studies pertaining to Australian local government could not be found. It should be noted that the results of Poister & Streib's (2005) study reflect the involvement in strategy development in general; including corporate, business and operational plans and it is generally expected that a high percentage of staff on various organisational levels are involved in developing these plans. This study did not focus specifically on strategic thinking as a part of the strategy development process. The limited empirical research on strategy development in local government councils in Australia represents a gap in the literature and this gap is addressed by this research study.

Now that the major constructs of the study, strategy development and strategic thinking have been investigated, the discussion will go onto the next construct, namely mental models. Mental models are defined and explained and ultimately the term 'shared mental models of strategic thinking' is investigated.

2.5 Mental models

From a business perspective, mental models theory is related to the study of managerial and organisational cognition which is based on the cognitive psychology discipline. Huff and Eden (2009) contend that the field of managerial and organisational cognition has always been split between the interests in individual cognition and organisational cognition. This can be attributed to the relationships among mind, management and organisation that are studied to answer the basic question about how managers and organisations make sense of situations and events (Meindl, Stubbart & Porac 1994). Managerial and organisational cognition also focus on the link between cognitive processes and

structures of management teams and organisational outcomes such as profitability, adaptability to change and innovativeness (Meindl, Stubbart & Porac 1994). In this regard, Priem (1994) explores Chief Executive Officers' beliefs about linkages between strategy, structure and environment and indicate a link between managerial judgment policies and organisational performance.

In this study, mental models of strategic thinking are investigated as part of individual cognition but it also addresses group cognition - although the aim is not to directly relate mental models of strategic thinking to organisational performance. This study is more interested in the role that these mental models play in the strategy development process. This section commences with an investigation of mental model theory and then the focus shifts to shared mental models where the types of mental models are identified and explained. The connection to strategic thinking is made and the construct 'shared mental models of strategic thinking' is analysed. Finally, ways to investigate mental models are addressed to provide a foundation for the research methods used in this study.

2.5.1 Mental model theory

When an individual thinks about something, mental models about the 'something'—the object or issue—are activated. Mental models are the mental frameworks that people have about a specific domain. These frameworks influence individual thinking processes in understanding, interpreting and predicting that domain. Mental models are based upon individuals' core beliefs and values, relevant experiences and exposure to specific events or issues (Denzau & North 1994; Fiske & Taylor 1991; Gentner & Stevens 1983; Jacobs & Heracleous 2005; Langfield-Smith 1989; Mathieu et al. 2000).

The characteristics of mental models can be summarised as follows:

- Individual thinking processes are influenced by mental models (Jacobs & Heracleous 2005; Mathieu et al. 2000; Senge et al. 1994).
- Mental models represent a set of assumptions and generalisations that influence how the world is interpreted and what action is taken (Fitzroy & Hulbert 2005).

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- Mental models are typically tacit (Fitzroy & Hulbert 2005), represent simplifications and are influenced by leaps of abstraction where the leap is made by jumping from concrete data to generalisations (Senge 1990).
 - Mental models develop over time and through experience (Fiske & Taylor 1991; Langfield-Smith 1989).
 - Individuals use mental models to understand and predict the behaviour of the world happening around them by applying their mental models to simplify complex issues, thereby helping them to process incoming information (Davison & Blackman 2005; Fitzroy & Hulbert 2005; Mathieu et al. 2000; Walsh 1995).
 - Mental models influence what individuals see and how they react to issues (Day & Lord 1992; Johnson-Laird 1983; Knight et al. 1999; Markides 1997; Mathieu et al. 2000; Rouse & Morris 1986) and are shaped by role requirements, experience, interests and individual goals (Jacobs & Heracleous 2005; Senge 1990).

Several alternative terms are used to describe the mental model concept and its sub-dimensions. These terms include ‘cognitive structure’, ‘schemas’, ‘cognitive or mental maps’, ‘knowledge structures’, ‘cognitive knowledge structures’ and ‘cognitive simplification process’. ‘Cognitive structure’ refers to an individual’s interrelated belief systems, values, assumptions and the way that an individual relates to the world (Langfield-Smith 1989; Porac & Thomas 1994). ‘Cognitive maps’ is the term used by Fiol and Huff (1992) and they argue that cognitive maps are an important management tool. ‘Schemas’ represent cognitive knowledge structures of specific ideas, objects and events that individuals use to encode and describe incoming information (Harris 1996). The term ‘cognitive or mental maps’ is used to describe an individual’s unique perception of reality (Harris 1996; Langfield-Smith 1992; Laukkanen 1996). The terms ‘knowledge structures’ and ‘cognitive knowledge structures’ are used to describe the cognitive structure of events, ideas and objects that individuals use to encode and describe incoming information (Harris 1996; Walsh 1995). ‘Cognitive simplification process’ refers to the classification schemes that individuals use to simplify information to understand, process, store and apply complex

information (Pellegrino & Carbo 2001). In comparison to other terms, the term ‘mental models’ appears to be applied more regularly in the strategy research literature and therefore the term ‘mental models’ is applied in this study to refer to individuals’ mental frameworks that are built upon knowledge, experiences, role requirements, beliefs and values that influence the way they think about a specific domain.

Although mental models are rooted in individual thinking, mental models can also be shared. When people work together on a task, sharing ideas, thoughts and beliefs about the domain, they develop a shared mental model that is explained in the next subsection.

2.5.2 Shared mental models

The notion of shared mental models is discussed as part of mental model theory (Mathieu et al. 2000). Although mental models are, to some degree, unique to an individual, shared mental models may develop over time. When people work together in a group, they share in group work, task work and belief structures through their experience in working together to accomplish the same goals (Cooke et al. 2000; Mathieu et al. 2000; Mohammed & Dumville 2001). A ‘team mental model’ represents the shared beliefs, assumptions and perceptions of the group members (Klimoski & Mohammed 1994). Klimoski and Mohammed (1994) distinguish between the concepts of ‘team mental model’ and ‘group mental model’. They portray groups as collections of individuals whose responsibilities and shared purpose may vary considerably, whereas a team consists of interdependent and differentiated individuals. Mohammed and Dumville (2001) use the term ‘team mental models’ to describe the knowledge shared by team members that include teamwork, task work and belief structures that is similar to Cooke’s (2000) description of ‘team knowledge’ as the shared understanding in teams. On the other hand, Guzzo and Dickson (1996 p. 308-9) use the label ‘work group’ to represent ‘individuals who see themselves and who are seen by others as a social entity who are interdependent because of the tasks that they perform as members of the group who are embedded in one or more larger social system (for instance, an organisation) and who perform tasks that

affect others'. Because this study is focused on interdependent individuals within organisations working on a specific task (that is, strategy development) the term *groups* is used in this study and specific *strategy groups* are identified later. The term 'shared mental models' is used to refer to group mental models (see Section 1.6 for key definitions of terms).

The concept of a 'team mental model' describes the synchronization observed in effective teams in terms of how they operated (Cannon-Bowers & Salas 1990). Team mental models are organised mental representations that team members share of the key elements in their environment (Klimoski & Mohammed 1994). Since the 1990's, the team mental model construct was further investigated focusing on aspects such as the relationship between similarity and accuracy of team mental models in a training environment (Edwards et al. 2006), the quality of team members' mental models (Mathieu et al. 2005) and the position-goal interdependencies and cue-strategy associations in an air traffic control environment. Further recent studies in this field include the application of the expert model of teamwork to structure the process of guided team correction in U.S. Navy command and control teams (Smith-Jentsch, Mathieu & Kraiger 2008) and team schema agreement (Rentsch & Klimoski 2001). After reviewing the overall construct of team cognition, Mohammed, Ferzandi and Hamilton (2010) conclude that although team mental models focus more on team functioning and shared mental models address the 'sharedness' aspect, these terms can be treated interchangeably.

Group performance is enhanced when group members share mental models about domains because group members will have the same understanding of the domain and elaborate communication about the domain is unnecessary (Klimoski & Mohammed 1994). Individual and shared mental models determine individual and shared thinking about a domain and influences the way in which individuals and groups perceive process, store and retrieve incoming information. Shared mental models provide a common understanding among the individuals within a group, and present frameworks of value and belief systems which act as the basis for analysing new ideas, concepts, policies and cultural developments considered by a group (Davison & Blackman 2005).

It is argued that this ‘common understanding’ provided by shared mental models plays an important role in group effectiveness (Davison & Blackman 2005; Klimoski & Mohammed 1994; Rentsch & Woehr 2004). Klimoski and Mohammed (1994) contend that multiple mental models can co-exist among group members when they think about a domain. Mathieu et al. (2000) identify two major domains of shared mental models, namely, task related features of the situation (for instance, the task itself, technology and equipment) and group-related aspects of the situation (for instance, group interaction, group member roles and perceptions about other group members). They argue that in order to be successful, group members need to not only perform task related functions well, they also must work well together as a group. In the same vein, Fiore and Schooler (2004) argue that to have a shared mental model for a group task, group members must be aware of the problem structure, the roles and skills of the group members and have a shared awareness that each member of the group possesses this knowledge.

Before the two types of shared mental models namely *shared task mental models* (referring to the task related features) and *shared group-functioning mental models* (referring to the group related aspects) are further addressed, the issue of ‘sharedness’ is first explored. The term ‘sharedness’ refers to the way in which people share mental models and is further explained in the next subsection.

2.5.3 Shared mental model agreement

The terms used in the literature to refer to sharedness include ‘overlap’ or ‘commonality’ (Cannon-Bowers & Salas 2001), consensus (Kellermanns et al. 2005), ‘similarity’ (Webber et al. 2000) and ‘agreement’ (Rentsch & Klimoski 2001). Definitions of the concept of shared mental model agreement include:

‘[the] level of agreement among senior managers concerning the emphasis placed on a specific type of strategy’ (Homburg, Krohmer & Workman 1999 p.340)

‘the extent to which managers from a strategic business unit (SBU) share

similar perceptions of strategic priorities. Consensus is understood here as shared understanding (Knight et al. 1999 p. 244)

'... shared cognitions among team members. This term mainly refers to agreement or overlap among individual team members' mental models of strategy' (Bowman & Ambrosini 1997 pp. 446-7)

In this study the focus is on shared mental models to concentrate on what group members share and the level of sharedness and terms 'agreement' and 'level of agreement' are used to refer to the extent of overlap between strategy group members' mental models and the levels of similarity in judgements, perceptions or opinions among strategy groups.

Sharedness of mental models refers to the extent to which group members' mental models are consistent with one another, the level to which it is identical among group members or to which it agrees or overlaps (Klimoski & Mohammed 1994). Groups who share mental models are expected to have common expectations of the task and group, allowing them to predict the behaviour and resource needs of group members more accurately (Cannon-Bowers & Salas 2001). This includes the notion that people working together hold knowledge that is either compatible, complementary and/or in agreement with other group members (Cannon-Bowers & Salas 2001; Salas & Cannon-Bowers 2001). Miles and Kivlighan (2008) studied co-leaders' mental models and find that the degree of similarity in co-leaders' mental models increases over time. Huber and Lewis (2010) argue that cross-understanding contributes to making group members' mental models more comprehensive and useful for task achievement. In a similar vein, Rico, Sanches-Manzanares, Gil and Gibson (2008 p.165) explain 'implicit coordination' as the ability of a team to act concurrently by understanding the task and team needs and adjusting behaviour accordingly without verbal communication.

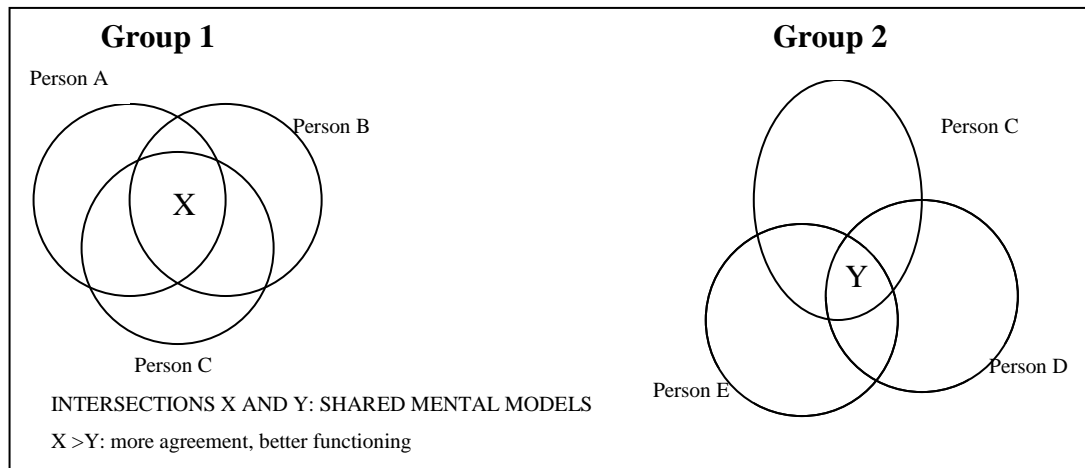
Not only is it the agreement of knowledge among group members, but also the synergy of knowledge structures that comes into play. While individual mental models are based on a person's own thoughts, perceptions, beliefs and

expectations, shared mental models are more than the sum of the individual properties; synergy is created when mental models overlap (Klimoski & Mohammed 1994). The premise that strategic consensus enhances organisational performance when coordination and cooperation is improved in organisations was studied by various researchers but the empirical evidence is conflicting (Kellermanns et al. 2005). This is explained by the lack of consensus among researchers about the construct of consensus and how it should be measured (Kellermanns et al. 2005). Researchers recommend that a better understanding of how strategic consensus develops is vital for theory development (Ketokivi & Castaner 2004).

The level of agreement of shared mental models is linked to effective group performance (Klimoski & Mohammed 1994; Mathieu et al. 2000; Mohammed, Klimoski & Rentsch 2000), effective group coordination (Webber et al. 2000) and organisational performance (Ensley & Pearce 2001). Studies on group efficacy – a group’s shared beliefs about its ability to successfully perform a group task – also indicate that it increases the smooth flow of team processes resulting in group effectiveness (Gibson & Cohen 2003; Gibson & Earley 2007). These studies indicate the important role of agreement in group efforts.

Based on the findings of Cannon-Bowers et al. (1993) this study follows the argument that the greater the level of agreement or commonality among group members’ mental models, the greater the likelihood that group members will predict the needs of the task and group, adapt to changing demands and coordinate activity with one another successfully. To visually illustrate this, Figure 2.1 below shows two groups, Group 1 and Group 2. Each group consists of three group members and the circles represent their individual mental models. The areas that intersect (areas X and Y respectively) indicate their shared mental models. Area X (group 1) is greater than Area Y (group 2) and, therefore, the level of agreement is higher. Based on the theory, it can be argued that Group 1 is likely to perform more effectively than Group 2.

Figure 2.1: Visual illustration of shared mental models



Source: Developed for this study

Although shared mental models may enhance group performance, some researchers warn against over-reliance on shared information to such an extent that ‘groupthink’ emerges where the potential for individual contributions is diminished (Klimoski & Mohammed 1994). Group members may have consensus on essentially incorrect views about an issue and, although high levels of agreement of shared mental models may exist, group performance may be misdirected. It is therefore important to ensure that individual mental models about a domain are embedded in a valid understanding of the domain. It is also suggested that in order to maintain a balance between agreement and diversity in mental models, group members must concurrently agree and disagree to some extent (Fiol 1994). Sufficient overlap to ensure coordination in groups, as well as some level of disparateness to broaden the scope of thinking, is required.

To summarise, sharedness of mental models of group members refer to the levels of agreement and the extent of overlap of their mental models. Although high levels of agreement is linked to increased group performance, complete overlap of mental models can be detrimental to group performance.

As explained in the previous subsection, two types of shared mental models are applicable, mental models of the task at hand, named the ‘task mental models’; and mental models about how the group functions, named the ‘group-functioning mental models’ and these types are now discussed.

Shared task mental models

Shared task mental models include the shared knowledge and understanding of the task at hand: what the task comprises of and how the task can be accomplished. For effective task completion it is important that group members have a shared understanding about the specific task. Mathieu et al. (2000) describe the content of shared task mental models as the knowledge about how the task should be accomplished in terms of task strategies, procedures, possible problems and environmental conditions. Swaab (2002) argue that different individual knowledge and perceptions about the task at hand lead to different conceptualisations of the problem, resulting in obstacles in developing solutions. Therefore, it is argued that shared mental models about the task may lead to more effective problem solving.

Shared Group-Functioning Mental Models

Where shared task mental models focus on task specific knowledge that group members share, the second type of mental models relevant in this study focus on aspects related to how the group operates and members' knowledge about each other. Researchers in this area use different terms to refer to how group members perceive each other's knowledge and skills and the functioning of the group. The problem with these terms is that they are also used to refer to issues beyond the focus area of this type of shared mental model. For instance, the term 'team mental model' is used by some authors to refer to all knowledge shared by team members (Mohammed & Dumville 2001; Webber et al. 2000)—and not the specific type of shared mental model that is addressed in this section. Therefore, a new term is created for use in this thesis to refer to the specific type of shared mental model addressing aspects related to how the group operates and members' knowledge about each other, namely, '*shared group-functioning mental models*'.

The literature on mental models focuses mostly on the aspects of knowledge about the task that is shared and Rentsch and Woehr (2004) highlighted the importance of research on cognitions of group members and suggested that other forms of cognition, such as the awareness of other group members' mental

models, should receive more attention. The perceptions of group-functioning are viewed as a social phenomenon where ‘reality’ is constructed by individuals acting in a social context. Shared understanding of group-functioning is considered an essential component in the study of group processes (Bettenhausen, 1991, p. 350).

In this vein, Cannon-Bowers and Salas (2001 p. 197) use the term ‘shared attitudes/beliefs’ to refer to ‘shared knowledge about each other’. They argue that when team members are alike in terms of their attitudes and beliefs, they will have compatible perceptions about the task and environment and ultimately reach effective decisions (Cannon-Bowers & Salas 2001 p.197). Mathieu et al. (2000 p. 274) agree that group members must hold shared perceptions of how the team interacts and about the skills, attitudes and knowledge of other group members and they name this the ‘team member model’. They argue that the more knowledge group members have about one another and the more this information is accurate, the more efficient and automatic the process is (Mathieu et al. 2000 p. 274). Huber and Lewis (2010 p. 7) address the extent to which group members have an accurate understanding of one another’s mental models as ‘cross-understanding’. Cross-understanding refers to a shared understanding of the group’s task and task situation that is influenced by personal experiences, formal or informal teaching or persuasion and drawing on the results of these learning processes (Huber & Lewis 2010). Cannon-Bowers et al. (1993) use the term ‘team mental models’ to refer to group members’ skills, attitudes, knowledge, and preferences. Fiore and Schooler (2004) contend that a shared mental model of a task requires group members to have a clear understanding of the problem structure, the roles and skills of group members and how they relate to the problem; and also a shared awareness that each group member holds this knowledge. They use the term ‘interpositional knowledge’ to describe the understanding that team members have of each other’s roles and skills (Fiore & Schooler 2004 p. 139). Each group member must be aware of the unique capabilities of each team member and the role that each team member plays in the group. This may help group members to overcome information-sharing problems associated with group interaction (Fiore & Schooler 2004). It is also crucial that group members share their perceptions about individual contributions

and roles within the group. To summarise, the issues that are related to group-functioning mental models include aspects related to how the group interacts and the perceptions of group members about the knowledge and skills available in the group, and the roles and responsibilities of other group members. Therefore, three issues related to group-functioning that will be addressed in this study are:

- perceptions about other group members' knowledge and skills;
- perceptions about how the group interacts; and
- perceptions about the roles and responsibilities of other group members.

The aspects of group-functioning mental models are addressed in Section 2.6.2. The term 'strategy group' is used in this study and to clarify the meaning of the term, the next paragraph defines the term.

The term 'strategy group' is used by Porter (1980 p. 129) to describe a group of organisations within an industry making similar decisions in key areas. Hunt (1972) uses the term 'strategic group' in a similar way to indicate similarities in operations across industries while Reger and Huff's (1993) 'strategic group' particularly focuses on the cognitions of strategists among organisations. In this study, the term 'strategy groups' is used to refer to groups of employees within each of the three regional councils and their shared cognitions within the groups and among the groups – an application of the term in an approach similar to Reger and Huff (1993).

As mentioned in Section 2.4, this study focuses on investigating strategy development within the context of local government; regional councils in South East Queensland in particular. In Chapter 1, Section 1.1, the amalgamation processes in regional councils was explained. Strategy groups in these councils are newly constituted groups and their members originate from previous shire councils. This may have an influence on the development of shared group-functioning mental models. It is expected that group members will have less knowledge about each other as group members and that these new groups will proceed through group development stages (Tuckman & Jensen 1977) as they commence their task to develop strategy for their council. The shared mental

models about the task and the group impacts also on the formation of groups and therefore group formation stages are now investigated.

Group formation stages

Groups go through different stages of development and this has been studied extensively in the fields of clinical psychology and organisational development. Because individuals come to a group with their own mental models of specific domains and shared mental models develop as the group interacts, it is argued that mental models do have an influence on group development and that group development has an influence on individual and shared mental models. It is important to recognise the relationship between mental models and group development, thus, group development is now further investigated.

Based on his examination of empirical studies on small group development, Tuckman proposed one of the most quoted models of group development in 1965 (Smith 2005; Tuckman 1965). Initially, he developed four stages of development, namely, forming, storming, norming and performing. Ten years later he added a fifth stage, adjourning, that is also widely accepted today (Ito & Brotheridge 2008).

The first stage of Tuckman's model, forming, commences when individuals gather to form a group and a great deal of uncertainty regarding the purpose, structure and leadership is present (Robbins et al. 2008). This stage relates to the construct of individual mental models where each individual's personal knowledge and experiences influence his or her expectations of the group in terms of the task and how the group will function. During this first stage, high levels of shared mental models are not expected. It can be argued that during the second and third stages—'storming' and 'norming'—shared mental models begin to develop. During these stages, groups progress from intra-group conflict to the development of close relationships and cohesion (Robbins et al. 2008). These stages reflect the development of shared mental models where shared goals are pursued in a group and group members share experiences and task work, and shared belief structures start to develop (Cooke et al. 2000; Mathieu et al. 2000; Mohammed & Dumville 2001). When shared mental models are

constructed in groups, it influences the group's performance (Rentsch & Woehr 2004) and this can be related to the fourth stage of group development, namely 'performing'. During this phase, the group is fully functional (Robbins et al. 2008). If high levels of similarity occur in group members' mental models, it is expected that group members will have shared expectations of the task and the group, allowing them to predict the behaviour and resource needs of group members more accurately (Cannon-bowers & Salas, 1990) which, in turn, may result in increased group effectiveness (Davison & Blackman 2005; Klimoski & Mohammed 1994; Rentsch & Woehr 2004).

The final stage of group formation, according to Tuckman's model (Tuckman & Jensen 1977), is 'adjourning'. This stage is applicable to temporary groups where the task given to the group is completed and the group prepares for disbandment (Robbins et al. 2008). Because this study is focused on strategy groups and the development of strategy is viewed as an ongoing, continuous process, this stage is not applicable to strategy groups.

Apart from the influence of group formation stages, groupthink and groupshift also play a role in shared mental models and decision-making. These aspects are now addressed.

Groupthink and groupshift

Groupthink and groupshift need to be considered when a group is required to evaluate options or alternatives in decision-making. Groupthink is a phenomenon that occurs when group members are so keen on seeking conformity within the group that the norm for consensus overpowers the realistic evaluation of alternative views (Robbins et al. 2008). Through premature consensus seeking, alternative courses of action are not investigated (Janis & Mann 1977) and some researchers conclude that groupthink is 'the primary cause of fiasco in the modern world' (Peterson et al. 1998 p. 273). Groupthink is viewed as the opposite of vigilant decision-making where deliberation is encouraged, decisions are based upon statistical and technical processes, and where extensive information processing occurs (Peterson et al. 1998). Groupthink may occur in groups where people work closely together, share

similar values, and are facing a possible crisis. These psychological pressures lead to a strong need for affiliation, and a cohesive in-group develops (Whyte 1998). This situation creates the need for unanimity and consensus seeking follows. Groupthink is not similar to shared mental models. Shared mental models are, as explained in Section 2.5.2, built upon shared experiences and shared frameworks of thinking that develop through working together over time. The process of developing shared mental models entails pooling, processing, evaluation and sharing of information, ideas and thoughts. Groupthink, on the other hand, is primarily a social process driving conformity and occurs when individuals forfeit their own opinions and resort to concurrence-seeking; it is the outcome of insufficient search for information and alternatives (McCauley 1998). Although groupthink does not impact on individual mental models, it can be argued that it may have an influence on the development of shared mental models. If, for some reason, group members are not encouraged to share their individual views and beliefs with the group and if alternative opinions or ideas are not explored, groupthink may occur and the shared mental model of the group will only present the content of the most popular view. Suggestions offered by researchers to decrease the chances of groupthink include monitoring group size (larger groups increase the possibility of individual intimidation) (McCauley 1998), moderating the role of the group leader and inclusion of a 'devils' advocate' role in some group members' roles (Robbins et al. 2008). The role of 'devils' advocate' presents the opportunity in group discussions to challenge the majority position and consider alternative courses of action without threatening group cohesiveness (Robbins et al. 2008).

Groupshift describes the phenomenon that occurs where, after a group decision has been made, individuals' initial positions about the decisions are exaggerated—either more conservative or riskier (Robbins et al. 2008). Earlier experimental studies revealed that individuals display greater degrees of risk-taking after participating in a group discussion than before the discussion (Clark III 1971). Groupshift can be viewed as a type of groupthink where the group norm of the groupthink is the decision that has been made in the group and the

shift occurs when the decision is compared to the pre-decision norm (Robbins et al. 2008).

Therefore, as with groupthink, groupshift may influence the development of shared mental models in groups. If groupshift applies in a group, it would mean that individual beliefs and experiences are intensified and this will also be represented in individuals' participation in developing shared mental models. One of the cures for groupthink is to incorporate effective search procedures for information gathering. McCauley (1998) suggests that the leader of the group should encourage search for information and evaluation from outside the group to develop alternatives. This suggestion is related to boundary-spanning that is now addressed.

Boundary-spanning

Because this study focuses on shared mental models within groups and across groups, boundary-spanning theory needs to be included in this investigation. Boundary-spanning is generated when group members liaise with important external and internal stakeholders of the group to create and transfer important sources of knowledge and know-how to the group (Ancona & Caldwell 1992; Ancona 1990; Marrone, Tesluk & Carson 2007). Marrone, Tesluk and Carson define group members' boundary-spanning as 'behaviours intended to establish relationships and interactions with external actors that can assist their team in meeting its overall objectives' (2007 p. 1424). Boundary-spanning is viewed as the primary method of expressing information about the group's progress (Golden & Veiga 2005) and groups that are practising boundary-spanning are perceived to be more effective and more likely to achieve their goals (Ancona & Caldwell 1992). Vandaele and Gemmel's (2006) study indicate that the level of group performance is related to certain types of boundary-spanning behaviour where service delivery behaviour and external representation influence group performance. Ancona and Caldwell (1992) find that although groups require group members to perform boundary-spanning activities to enhance the performance of the group, many group members only focus on the group's internal activities and processes. The reason for this may be linked to earlier findings about significant role overload that group members experience when

group-spanning activities lead to large amounts of simultaneous information that is often incompatible (Marrone et al. 2007).

In this study, strategy groups are investigated. Boundary-spanning activities include the communication and liaison between strategy groups and between strategy groups and external stakeholders. Because the development of strategy relies on communication of the vision and goals of the organisation, and strategic thinking of strategy group members is influenced by aspects within and across strategy groups and external stakeholders, it is necessary to also explore the boundary-spanning activities of strategy groups.

Now that the types of mental models, the link to group formation stages and the link to boundary-spanning have been explained, the focus shifts to determining mental models.

2.5.4 Determining mental models

Mental models are abstract concepts and because they are dynamic and can take multiple forms, the measurement of mental models is challenging (Klimoski & Mohammed 1994). Although descriptive and theoretical research on shared mental models is popular, researchers find it difficult to measure knowledge and beliefs (Markoczy 1997) and, therefore, empirical research has lagged behind. This may also be due to methodological difficulties in measuring cognition (Klimoski & Mohammed 1994). Earlier work by Hambrick and Mason (1984) suggest that because individual thinking is formed by individual experiences and is represented in personal characteristics such as background and beliefs, they should be used as substitute measures of individual cognition. Markoczy (1997) argue against using the measurements of individual characteristics as representation of cognition. Her study of 91 managers shows a partial relationship between personal characteristics and beliefs and, therefore, Markoczky concludes that the measurement of cognition includes much more than individual characteristics. She proposes that instead of relying on convenient substitutes such as individual characteristics, researchers should determine what it is what they want to measure and develop and then refine tools for its measurement (Markoczy 1997 p. 1240). In this vein, several techniques

have been applied to elicit mental representations; they include analytical modelling, verbal protocol analysis and experimental methods (Rouse & Morris 1986).

In the areas of organisational behaviour, strategic management and political sciences, the most popular methods of investigating mental models through exploring individual and shared knowledge is the mapping of cognitive structures, generally known as cognitive mapping (Carley & Palmquist 1992; Davison & Blackman 2005; Eden 2004; Gnyawali & Tyler 2005; Goodman 1968; Hodgkinson, Maule & Brown 2004; Jackson & Trochim 2002; Mohammed, Klimoski & Rentsch 2000; Porac & Thomas 2002), Interactively Elicited Cognitive Mapping (IECM) and Causal Cognitive Mapping—which include text-based causal mapping. (Hodgkinson, Maule & Brown 2004; Nadkarni & Narayanan 2005). Another method of cognitive mapping is through Leximancer, an electronic analytical text mining tool that has been used successfully by academic institutions in analysing the content of qualitative text documents (Kivunja 2009). The Leximancer concept map identifies concepts in the text and shows how they relate to each other. It also indicates the similarity in contexts in which the concept occurs; and the frequency in which the similarity occurs (*Leximancer: from words to meaning to insight*). See Chapter 3, Section 3.8.2 for further discussion about Leximancer. Similar to Leximancer, qualitative content analysis is another research method used to analyse textual data (Hsieh & Shannon 2005; Tesch 1990; Weber 1990). Although qualitative content analysis is not a method generally used to elicit mental models, it is an effective text analysis method that goes beyond counting words to obtain categories that represent similar meanings—it identifies concepts and relationships in textual documents. Qualitative content analysis provides knowledge and understanding of a phenomenon by allowing researchers to understand social reality in a subjective but scientific manner (Hsieh & Shannon 2005). Qualitative content analysis provides more than extracting and counting the frequency of objective concepts in text; it integrates the text and the context and enables the researcher to extract meaning, themes and patterns that may be latent in the text (Hsieh & Shannon 2005). In this study, qualitative content analysis will be applied to provide more insight into the meaning of concepts within the context of the study

and Leximancer analysis will be used to elicit and identify concepts, and to investigate the similarity of mental models. More details about these analysis methods are provided in Chapter 3.

Table 2.2 provides an overview of the main features of the identified methods of eliciting mental models. These methods are not discussed in detail as the focus of the study is not to study different methodologies used in investigating mental models but, rather, to investigate mental models of strategic thinking and their role in the development of organisational strategy. However, a method to investigate these mental models is needed and, therefore, the following comparisons between methods are applicable.

All of the methods investigated in the table below, with the exception of qualitative content analysis, incorporate visual representation of concepts that are derived from language as basic indicators. These indicators originate from language which is seen as the window of the individual's mind. The cognitive categories through which individuals view and experience the world are embedded in the words they use (Nag, Hambrick & Chen 2007). The verbal structure is a symbolic representation of the individual's cognitive structure (Carley & Palmquist 1992). For IECM, the indicators originate from language to represent the content of mental models (Mohammed et al. 2000). Cause mapping's indicators originate from the causal relationship between concepts that are obtained through language (Gnyawali & Tyler 2005). Leximancer's visual representations also originate from language in text based documents (Smith 2000). The language as data referred to in Cognitive Mapping, IECM, Cause Mapping, Leximancer and Qualitative Content Analysis are collected through interviews and/or questionnaires and converted to textual documents. Cause Mapping also includes essays written by participants. Interviews form an integral part of data collection for constructing mental maps. An important advantage of using interviews is that first-hand rich data are generated through conversations with participants. This allows the researcher to capture underlying cognitions of participants and the data are more likely to be reliable (Gnyawali & Tyler 2005). The interview method presents a two-way communication process

and Eden and Ackermann (1998) contend that an individual's cognition is better captured through such a process. The spoken language is transcribed to text based format and then analysed. The outcomes of the methods are, for all methods except Qualitative Content Analysis, graphic representations but different aspects are addressed by the different methods. The graphic representation of Cognitive Mapping presents a network of nodes and arrows and the direction of the arrows is an important feature. For IECM, the graphic representation depicts how variables influence each other and this is indicated by a number of out-degrees (how a specific variable influences another variable) and in-degrees (how this variable is influenced by other variables) and the number of in- and out-degrees indicate the importance of the relationships. For Cause Mapping, the focus is on causal relationships and depicts how one variable causes another. The strength of causality is represented by the number of connections between variables. Leximancer provides a map to display the conceptual structure of information through theme circles that represent the main groupings of concepts within data and the brighter the font in which the label appears, the more frequently the concept appears in the text. The relationship between concepts is also revealed by connection-lines between concepts. In contrast to these methods, Qualitative Content Analysis provides a written document where the themes and constructs obtained from the data are presented. All of the methods can be applied to individual and shared level. Individual maps can be created to display individual content and structure of mental models; individual maps can be compared to provide information about similarity of maps; and maps can be aggregated to provide mental maps of groups. For qualitative content analysis, the interview data of individual interviewees can be analysed for individual results and the data for groups can be aggregated for shared results.

Although different procedures of eliciting the graphic representations are applied in the various methods, a basic routine of steps appears to be followed. First, concepts are identified for development of the data collection tool that will be used. Then the data are gathered, analysed and maps are created. For Cognitive Mapping, the degree of similarity versus dissimilarity between maps is analysed and statistical tests are applied for further analysis. IECM analysis focuses on

how constructs influence each other and on the strength of the influence. Cause Mapping produces data sets of rank-ordered data based on the importance of the concepts and the cause-effect relationships. Leximancer, however, identifies all concepts from the text and analyses frequency of concepts, strength of relationships between concepts, clustering of concepts, and also proximity of other concepts. The location shows nearness (indicating that two concepts appear in similar conceptual contexts) and the pathways of connecting concepts on the map. See Chapter 3, Section 3.8.2 for further discussion about Leximancer.

Although all of these methods (Cognitive Mapping, IECM, Cause Mapping, Leximancer and Qualitative Content Analysis) are viewed as useful ways of exploring the content of individual and shared mental models, there are some disadvantages to certain methods that make them less desirable than others. Because Cognitive Mapping, IECM and Cause Mapping rely on pre-determined concepts for inclusion in the analysis, there may be important concepts that are excluded because the researcher identified the concepts before data gathering. In this regard, Leximancer appears to be more effective in identifying all concepts and relationships, including unexpected concepts and relationships from the text; and the researcher can select from those concepts. Furthermore, to develop and construct maps manually is time consuming, labour intensive and best suited to small sample sizes. Using computer software such as Leximancer enables both automatic analysis through machine learning and also customised content analysis using defined concept classifiers (Grech, Horberry & Smith 2002). This eliminates the cumbersome task of reading through documents and drawing key themes from the text and allows more time for analysing the results of the maps (Watson, Smith & Watter 2005). It can also accommodate large data sets and sample sizes. Although the method of qualitative content analysis is time consuming, it has been suggested as the best instrument to analyse qualitative data because it applies the abilities of the human brain to appreciate the complexities and linkages in rich data that is required for critical and in-depth analysis of data (Cavana, Delahaye & Sekaran 2001).

Because of the advantages of the Leximancer software program and Qualitative Content Analysis, as explained above, these methods are applied in this study.

Table 2.2: Methods of reviewing mental models as applied in the management field

	COGNITIVE MAPPING	IECM (INTERACTIVELY ELICITED COGNITIVE MAPPING)	CAUSE MAPPING	LEXIMANCER See Chapter 3, Section 3.8.2 for further discussion about Leximancer.	QUALITATIVE CONTENT ANALYSIS
RESEARCHERS	Goodman (1968); Carley & Palmquist (1992); Mohammed, Klimoski & Rentsch (2000); Jackson & Trochim (2002); Porac & Thomas (2002); Eden (2004); Hodgkinson, Maule & Brown (2004); Davison & Blackman (2005).	Markoczy & Goldberg (1995) Mohammed, Klimoski & Rentsch (2000)	Axelrod (1976); Langfield-Smith & Wirth (1992); Markoczy (1997); Hodgkinson, Maule & Brown(2004); Clarkson & Hodgkinson (2005); Gnywali & Tyler (2005).	Smith (2003); Stockwell et al (Stockwell et al. 2009)	Patton (1990); Krippendorff(2004); Downe-Wamboldt (1992); Hsieh & Shannon (2005)
DESCRIPTION	Visual representation of individual and shared mental models - internal representations presenting through language as networks of concepts (Carley & Palmquist 1992) Graphic representations of content and structure of an individual's understanding of a domain (Mohammed, Klimoski & Rentsch 2000).	Mapping the content of individual and shared mental models by interactively requesting data from participants through questionnaires and/or interviews (Mohammed, Klimoski & Rentsch 2000).	A cause map is a specific cognitive map that links concepts in terms of causal relationships (Gnyawali & Tyler 2005). It is a technique to reveal understanding of influence, causality and system dynamics (Clarkson & Hodgkinson 2005) 'Cause Mapping' is a method applied by to investigate to what extent cognitive maps are shared among managers in the business unit and within each level and function of the business; determining the differences between organisational levels and individual and shared levels.	Visual representation of concepts and relationships from text-based data (<i>Leximancer: from words to meaning to insight</i>) It derives main concepts within text and their relative importance using a scientific, objective algorithm. It identifies strengths between concepts and also centrality. It can assist in applying grounded theory analysis to a textual dataset. It visually explores textual information fro related themes to create new ideas or theories and it assists in identifying similarities in the context in which concepts occur (Davies et al. 2006 p.365 -6)	Method to analyse text data to provide knowledge and understanding of the phenomenon (Downe-Wamboldt 1992) Allows for interpretation of the content of text data through systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon 2005)

	COGNITIVE MAPPING	IECM (INTERACTIVELY ELICITED COGNITIVE MAPPING)	CAUSE MAPPING	LEXIMANCER	QUALITATIVE CONTENT ANALYSIS
INDIVIDUAL/SHARED LEVEL	Individual level	Individual level but shared level can also be assessed through aggregation of individual measures to determine an average of individual maps (Eden, Colin 2004).	Both individual and shared level	Analysis of both individual and shared level is possible	Analysis of both individual and shared level is possible
ELEMENTS	Cognitive content, cognitive structure and cognitive style (Porac, Joseph F & Thomas 2002)	Reliance on terms, language and concepts of individuals being studied. Participants provide the content of knowledge to be mapped (Mohammed, Klimoski & Rentsch 2000)	Dimensions and constructs, focus is on the content and the structure of the maps (Clarkson & Hodgkinson 2005).	Themes, concepts and associated relationships (Smith, A. E. 2003).	Themes, concepts, patterns connection to context (Hsieh & Shannon 2005)
REPRESENTATION	Graphic representation, network of nodes and arrows (Eden, Colin 2004; Goodman 1968; Mohammed, Klimoski & Rentsch 2000)	Graphic representation, the importance of a construct is identified by the number of out-degrees (number of other variables that this construct influence) and in-degrees (number of other variables that influence this construct (Mohammed, Klimoski & Rentsch 2000).	Graphic representation in the form of cause-effect maps and the strength of agreement is represented by the number of connections. (Gnyawali & Tyler 2005) Similarities and differences between maps (Langfield-Smith & Wirth 1992) One method used is text-based causal maps (Nadkarni & Narayanan 2005).	Graphic representation - information is displayed by means of a conceptual map that provides an overview of the material, representing the main concepts contained within the text and how they are related.	Written document
METHOD OF EXTRACTION	Interviews, questionnaires, discussions (Eden, Colin 2004; Mohammed, Klimoski & Rentsch 2000)	Interviews, questionnaires (Mohammed, Klimoski & Rentsch 2000).	Interviews and questionnaires, for text-based causal maps: essays written by participants.	Text-based sources such as documents, transcribed interviews and questionnaires (Smith 2000)	Text-based sources such as documents, transcribed interviews and questionnaires (Hsieh & Shannon 2005)

	COGNITIVE MAPPING	IECM (INTERACTIVELY ELICITED COGNITIVE MAPPING)	CAUSE MAPPING	LEXIMANCER	QUALITATIVE CONTENT ANALYSIS
PROCEDURES	<p>Identification of concepts, define relationships between concepts, codify text, statistical analysis of data (Carley & Palmquist 1992). Develop a pool of constructs prior to interviews, select constructs for each individual, analyse degree of similarity versus dissimilarity between maps, statistical tests to identify what characteristics account for similarities in thinking (Markoczy & Goldberg 1995). Specify domain of study, research questions and purpose of mapping in pre-data collection phase, then collect data, codify and identify cause-effect relationships; then analyse maps and draw inferences (Gnyawali & Tyler 2005).</p>	<p>Choose constructs from a fixed list, study the relationships between the constructs and map relationships (Markoczy & Goldberg 1995). Participants are required to select ten relevant terms from a number of predetermined constructs (Markoczy & Goldberg 1995). After the constructs are identified, the next step is to study the relationships between the constructs and map the relationships in a diagram. The importance of a concept is represented by the means of the number of outdegrees (number of other variables this concept influence) and indegrees (number of other variables that influence this concept) (Mohammed, Klimoski & Rentsch 2000).</p> <p>For mapping, the focus is on how constructs influence each other; positively/negatively and the strength of the influence: weak moderate or strong (Markoczy & Goldberg 1995).</p>	<p>Gnyawali and Tyler builds on the 5-step procedure as developed by Langfield-Smith and Wirth (1992). In the pre-data collection phase, concepts of the domain are coded and grouped into major dimensions of the domain. Two data sets are prepared from the mapping data: one based on the rank-ordered data and the other on the cause-effect relationships. Rank-ordered data are aggregated and an average of the mean rankings for each dimension is determined. The cognitive map shows the cause (origin) and effect (destination) relationships between the concepts. The level of agreement among respondents on cause-effect relationships is reflected by the number of connections. Separate maps are constructed by aggregating individual data by level.</p>	<p>Text is prepared through naming and term preservation, then concept classifiers are created and a machine-learning algorithm is used to find thesaurus words from the text; text is then classified using the concepts; text is indexed and finally mapped where concepts are clustered according to weight and relationship (Smith 2000)</p>	<p>3 Approaches to interpret text data; conventional, directed and summative.</p> <p>Conventional: No preconceived categories due to limited existing theory – categories flow from the data Use open-ended questions in interviews, apply coding scheme, sort codes into categories (Hsieh & Shannon 2005).</p> <p>Directed: goal – to validate or extend existing theory, more structured approach, identify key concepts for use in open-ended questions in interviews. Apply coding scheme, include emerging codes to form new categories (Hsieh & Shannon 2005).</p> <p>Summative: Identify codes or words in text with the purposes of understanding the contextual use of the words or content – explore usage – interpretation of content (Hsieh & Shannon 2005).</p>

	COGNITIVE MAPPING	IECM (INTERACTIVELY ELICITED COGNITIVE MAPPING)	CAUSE MAPPING	LEXIMANCER	QUALITATIVE CONTENT ANALYSIS
PROCEDURES (continue from previous page)			The analysis of the maps focuses on determining the importance placed by managers on various concepts and dimensions of the domain and comparisons of maps across levels and functions (Gnyawali & Tyler 2005). Clarkson and Hodgkinson (2005) reported on computer package, 'Cognizer™' that can be used to elicit and compare large numbers of maps.		
ADVANTAGES/ DISADVANTAGES	Cognitive mapping as the most useful way of exploring the contents of individual and shared mental models in social groups (Carley & Palmquist 1992) It is limited to a pre-selected hierarchy of concepts that is imposed on all participants even when the structure does not exist in their mental models (Mohammed, Klimoski & Rentsch 2000). Effective tool to examine meaning as a relational affair (Mohammed, Klimoski & Rentsch 2000).	The reliability of this method has not been tested extensively and because the data and consequent cognitive map depend on the interviewing skills of the researcher, low interrater and test-retest reliabilities can be expected (Hodgkinson 2002; Mohammed, Klimoski & Rentsch 2000).	It is a methodological tool that provides a way of accessing large pools of organisational data (Nadkarni & Narayanan 2005) if a computer package, such as 'Cognizer™' is used. Cause mapping is applicable in studying strategic decision-making. It provides a better understanding of organisational knowledge and it is the most popular mapping method in strategic management (Huff, Anne Sigismund 1990).	Large amounts of texts can be analysed quickly and it is highly successful for learning and classifying from the same body of texts (Davies et al. 2006). The automatic mapping process is likely to reduce expertise bias when interpreting a set of documents (Watson, Smith & Watter 2005) Davies et al reported that resource problems can be encountered during phases of learning, indexing and clustering (2006).	Cavana et al. (2001 p.176) stated that the best instrument to analyse qualitative data is the human brain 'because this is the only instrument that possesses the required breadth of perception, complex appreciation and ability to reduce data'.

	COGNITIVE MAPPING	IECM (INTERACTIVELY ELICITED COGNITIVE MAPPING)	CAUSE MAPPING	LEXIMANCER	QUALITATIVE CONTENT ANALYSIS
ADVANTAGES/ DISADVANTAGES (continue from previous page)		<p>The strengths of the IEMC method include:</p> <ul style="list-style-type: none"> - the richness of the conceptualisation and operationalisation of complexity, it gives greater emphasis to emotional aspects compared to other techniques and provides a structure around which individuals organise their experience (Mohammed, Klimoski & Rentsch 2000). <p>The limitations include:</p> <ul style="list-style-type: none"> - a cause map is the representation of an individual's perceptions and is subject to all the distortions and biases of any self-report method that may include forgetfulness, social desirability and the reluctance to disclose sensitive material - the researcher's interpretive influence in interviewing and analysing the data (Mohammed, Klimoski & Rentsch 2000) it is very labour intensive and is best suited to smaller sample sizes. 	<p>It portrays the causal relationships that managers use to order their thought processes in strategic decision-making (Gnyawali & Tyler 2005). It provides predictive logic and emphasize classification and categorisation that helps managers to see patterns.</p> <p>The study conducted by Hodgkinson et al (2004) was confined to a controlled laboratory study and included single-item Likert-type scales to gather data. These procedures lack in validity and the researchers concluded that field studies are more appropriate and that richer data needs to be collected (Hodgkinson, Maule & Brown 2004). Without using a computer software program, causal mapping can be time consuming and is then more applicable to very small sample sizes.</p> <p>Although the text-based causal maps method is very popular, the validity of measures derived from this method received limited attention (Nadkarni & Narayanan 2005).</p> <p>Text-based causal mapping assumes that causality is the only way in which information is perceived, interpreted and understood and thereby excluding other important aspects of cognitive structures.</p>	<p>The Leximancer tool is discussed in more detail in Chapter 3.</p>	<p>Qualitative content analysis enables the in-depth analysis of complex data by retrieving themes and constructs from texts and linking the content of the text to the context of the study (Patton 1990).</p> <p>A possible disadvantage of qualitative content analysis is the contamination of data by the understanding of the researcher but, the principles of qualitative content analysis lessens this danger by applying measures of accuracy and replicability (Cavana, Delahaye & Sekaran 2001).</p>

Source: Developed for this study

Up to this point, the literature review focused on two broad components, namely *strategy* (including strategy development and strategic thinking) and *mental models* (including shared mental models). In the next section, these broad concepts are connected to form the main construct of the study, namely Shared Mental Models of Strategic Thinking.

2.6 Shared mental models of strategic thinking

Although shared mental models and strategic thinking have previously been researched separately, no studies on the construct ‘Shared mental models of strategic thinking’ could be found. The objective of this study is to investigate how shared mental models of strategic thinking impact upon the development of organisational strategy in organisations.

Essentially, it is contended that to develop organisational strategy, members of strategy groups first have to engage in strategic thinking, creating and developing a wide range of strategy options and choosing a strategy that has potential for the long-term success of the organisation. When strategy group members engage in strategic thinking, their mental models of strategic thinking, based on their previous experiences and beliefs about strategy, are activated (Malan 2005). As they work together, strategy group members communicate and share their experiences, beliefs and ideas, and a shared mental model develops. Shared mental models may lead to a mutual understanding of role expectations and complementary task behaviour. If group members’ mental models of strategic thinking are aligned and high levels of agreement in their shared mental models of strategic thinking are present, they may be more successful in developing the long-term direction of the organisation.

The main constructs explored in this study include:

- shared task mental models of strategic thinking, and
- shared group-functioning mental models of strategic thinking.

These constructs are now further explored.

2.6.1 Shared task mental models of strategic thinking

In this study, the shared mental models of the task of strategic thinking are investigated. To enable the study of shared mental models of strategic thinking, the task of strategic thinking must be clarified. In Section 2.3.2, the elements of strategic thinking were discussed from the perspectives of different researchers and a general set of elements was presented. The set of elements appropriate for this study include:

- thinking about sustainable competitive advantage;
- thinking holistically;
- thinking analytically and creatively; and
- thinking long-term about the future.

These elements form the basis of exploring the shared task mental models. The focus in determining the shared task mental model of strategic thinking is on exploring how strategy groups perceive the long-term direction for their organisation in terms of the elements, and the following research question is applicable:

RQ1: What is the shared task mental model of strategic thinking of strategy groups?

It is proposed that strategy group members apply the elements of strategic thinking when they think about the long-term direction of the organisation. The following propositions are relevant:

P1: Strategy group members consider sustainable competitive advantage when thinking about the long-term direction of the organisation.

P2: Strategy group members think holistically about the organisation when they apply strategic thinking in considering the long-term direction of the organisation.

P3: Strategy group members apply analytical and creative thinking when they apply strategic thinking in considering the long-term direction of the organisation.

P4: Strategy group members think long-term about the future when they apply strategic thinking in considering the long-term direction of the organisation.

Linked to the debate regarding who in organisations apply strategic thinking and on which organisational levels it occurs, it is generally accepted that employees appointed to strategy groups apply strategic thinking when the long-term direction of the organisation is deliberated. Therefore, based on the literature, the following propositions are relevant:

P5: Strategy groups on and across various organisational levels apply strategic thinking in considering the long-term direction of the organisation.

If these propositions are accepted, the next issue arising is the level of sharedness of task mental models of strategic thinking within strategy groups and also among strategy groups, thus, the following research question applies:

RQ2: What is the level of agreement of the task mental models of strategic thinking among strategy groups?

The literature links effective group performance to higher levels of agreement among task mental models (Klimoski & Mohammed 1994; Mathieu et al. 2000; Mohammed et al. 2000). In this regard, the following propositions are relevant:

P6: Successful strategic thinking requires high levels of agreement of task mental models among group members within a specific strategy group.

P7: Successful strategic thinking requires high levels of agreement of task mental models among strategy groups within the organisation.

To enable the appraisal of the propositions and find answers to the research questions, the elements related to the shared task mental model of strategic thinking are investigated.

Investigating shared task mental models of strategic thinking

In order to investigate abstract issues such as strategy and thinking, Venkatraman and Grant (1986) suggest that the concepts should be operationalised. They imply that the concepts must be transferred to observable actions that can be investigated. With regard to Venkatraman's (1989) six dimensions of strategic orientation, he operationalised each dimension by linking specific, measurable indicators to each dimension. The indicators identified in Table 2.3 are based on the indicators for the strategy concept (Venkatraman 1989) that originate from Venkatraman and Grant's earlier organisational strategy research (Venkatraman & Grant 1986). This work includes research about characteristics of strategic orientation (Miller & Friesen 1982, 1983; Miller, Kets de Vries & Toulouse 1982), strategic decision-making and strategic planning (Farh, Hoffman & Hegarty 1984; Fredrickson 1984; Hambrick 1981; Karger & Malik 1975; Kudla 1980; Venkatraman, Ramanujam & Camillus 1984). Venkatraman's method of operationalising abstract concepts is followed in this study. The four elements of strategic thinking that are identified in Section 2.3.2, are operationalised to enable investigation in this qualitative study. Each element is developed and modified to fit into the context of local government. For example, the element 'customer value' is operationalised into a demonstrable aspect – services decisions based on the needs of the community within the budget of the regional council. Instead of referring to 'customers' it is more appropriate in the local government context to refer to 'the community' or 'residents'.

Table 2.3 provides an outline of the indicators linked to each of the four elements of strategic thinking.

Table 2.3: Indicators of strategic thinking elements

Elements	Indicators
<p>Thinking about sustainable competitive advantage</p> <ul style="list-style-type: none"> • Customer value • Efficiency measures – cheaper, faster, smarter • Flexibility – adapt to changes quickly • Seek new opportunities • Sustainability 	<ul style="list-style-type: none"> • Our focus is on forecasting the needs of our residents in providing quality services. • Our service decisions are based upon how we can meet the needs of the community within our Regional Council budget. • When designing our processes, we consider how the processes can be changed easily according to changes that we anticipate in the services that we render. • We constantly seek new opportunities related to the present operations (Venkatraman 1989). • We are usually the first local council to provide new services that our residents require (Venkatraman 1989) • We are constantly on the lookout for ways to improve our services (Venkatraman 1989) • Operations in later stages of life cycle are strategically eliminated (Venkatraman 1989) • The input of the community in our consideration of the long-term direction of our council is essential and we consider the impact on the natural environment and our human resources (Dunphy, Griffiths & Benn 2007).
<p>Thinking holistically</p> <ul style="list-style-type: none"> • Systems thinking – how change in one component affects other • Understand process of value creation • Coordinated action 	<ul style="list-style-type: none"> • When we develop strategic options we consider the impact that it will have on the functional areas; how the changes will impact on the different functional areas. • When making changes in the services and processes, we consider the effect it will have on the different functional areas and think about how to effectively coordinate this. • Our strategic options are based on an understanding of the process of value creation in our organisation. • When we consider strategic options, we take into account the actions that will be involved in accomplishing the option and consider ways in which the actions can be coordinated. • We depend on our information systems to provide support for decision making (Venkatraman 1989) • The outputs of management information and control systems are used in considering the viability of strategic options (Venkatraman 1989)
<p>Thinking analytically and creatively</p> <ul style="list-style-type: none"> • Developing new strategies rather than building on previous • Develop alternative ways of competing – options for the long-term • Focus on problem-solving through analysis of problem and developing creative solutions 	<ul style="list-style-type: none"> • We take a ‘clean slate’ approach when considering strategic options – thinking of new ways to satisfy residents’ needs and providing good quality services within our budget. • Although our past strategies are important, we realise that external changes require new ways of servicing our customers. We do not simply build upon our past strategies but reflect on the positive outcomes and find new ways in increasing service delivery.

Elements	Indicators
<p>Thinking analytically and creatively (continued from previous page)</p>	<ul style="list-style-type: none"> • Our strategy process allows for creating multiple options for the future direction of our organisation, from these options we choose the most appropriate one. • Before developing these options, we go through a process of analysing our strategy problem first. We assess exactly what the position of our organisation is with regard to other regional councils, we assess the needs and wants of our communities and the opportunities and threats in the external environment as well as internal strengths and weaknesses. Upon this information we develop creative long-term options for our organisation. <p>Creativeness regarding finding solutions to strategy problems is viewed as a very important skill in our Regional Council.</p>
<p>Thinking long-term about the future</p> <ul style="list-style-type: none"> • Connecting past, present & future • Develop a vision of where the organisation will be in the future –desired future 	<ul style="list-style-type: none"> • When engaged in developing the organisational strategy, we are required to develop a ‘desired state’, to vision the ideal future for our regional council where we achieve competitive advantage. • Our desired state entails a picture of where we want to be in the future and it has its roots in our past strategies as well as our current strategies. • We have a formal process of tracking significant trends in the industry to guide us in thinking about the future (Venkatraman 1989) • Thinking about the future involves forecasting key indicators of our operations (Venkatraman 1989) • Our thinking about the future is based on basic research to provide us with information about future excellence in service delivery (Venkatraman 1989)

Source: Developed for this study

These operational indicators form the foundation upon which task mental models of strategic thinking are investigated in this study. Following the research questions and propositions related to shared task mental models of strategic thinking and the investigation of task mental models of strategic thinking, the shared group-functioning mental models are now addressed.

2.6.2 Shared group-functioning mental models of strategic thinking

The elements of group-functioning mental models that are applied in this study are derived from the work of Klimoski and Mohammed (1994) and Fiore and Schooler (2004) and include:

- the perceptions of individual group members about other strategy group members’ knowledge, skills, attitudes;

-
- the perceptions of individual group members about how the strategy group interacts ; and
 - The perceptions of individual group members about the roles and responsibilities of other members in the strategy group

It is argued that group-functioning mental models not only have important implications for strategic decision-making, but for successful strategy implementation as well. Groups with well-developed and shared group-functioning mental models may be able to implement strategies more successfully and in a shorter timeframe because group members have a shared understanding of their fellow group members' strengths and capabilities regarding the tasks that need to be executed (Klimoski & Mohammed 1994). Group members can anticipate and predict the behaviour of group members and ultimately the behaviour of the group, and this allows for the efficient and effective application of the inputs of group members (Klimoski & Mohammed 1994).

These elements form the basis of exploring shared group-functioning mental models. The focus in determining the shared group-functioning mental model of strategic thinking is on exploring how strategy group members perceive each other's role responsibilities, knowledge, skills and attitudes, as well as how they perceive group interaction within the group. Thus, the following research question is applicable:

RQ3: What is the shared group-functioning mental model of strategy groups?

When strategy group members apply strategic thinking, it is proposed that their thinking is influenced by their shared group-functioning mental model and this influences the way in which they think about the long-term direction of the organisation. Therefore, based on the literature, the following propositions are relevant:

P8: Strategy group members share perceptions about other strategy group members' knowledge, skills, and attitudes when they apply their shared mental

model of strategic thinking in considering the long-term direction of the organisation.

P9: Strategy group members share perceptions of how the group interacts when they apply their shared mental model of strategic thinking in considering the long-term direction of the organisation.

P10: Strategy group members share perceptions of the roles and responsibilities of other group members when they apply their shared mental model of strategic thinking in considering the long-term direction of the organisation.

As discussed earlier, the literature on mental models indicated that mental models can be shared when individuals work together on a task, and shared task mental models and shared group-functioning mental models develop subsequently (Cooke et al. 2000; Mathieu et al. 2000; Mohammed & Dumville 2001). To address the issue of sharedness of mental models among group members and strategy groups, that is, the extent to which group members' and strategy groups' perceptions about group- functioning (the elements) are in agreement, the following research question has been developed:

RQ4: What is the level of agreement of the group-functioning mental models among the strategy groups?

High levels of agreement among mental models in groups are linked to effective group performance (Klimoski & Mohammed 1994; Mathieu et al. 2000; Mohammed et al. 2000). Therefore, the following propositions are relevant:

P11: Successful strategic thinking in organisations requires high levels of agreement of group-functioning mental models among group members within a specific strategy group.

P12: Successful strategic thinking in organisations requires high levels of agreement of group-functioning mental models among strategy groups.

To enable the assessment of the propositions and find answers to the research questions, the elements related to the shared group-functioning mental model of strategic thinking must be investigated.

Investigating group-functioning mental models of strategic thinking

The literature review on shared mental models (Section 2.5.2) resulted in the identification of three elements of group-functioning mental models applicable in this study.

These elements (perceptions of individual group members about how the strategy group interacts, about the roles and responsibilities of other members in the strategy group, and about other strategy group members' knowledge, skills, attitudes) have previously been included as items in other scales and questionnaires. Although it would have been ideal to apply only one of these scales to assess the three elements, the problem is that all of these scales address only one or two of the elements and a scale that covers all aspects of the elements could not be found. To overcome this problem, items from various scales are used to assess the elements of group-functioning mental models.

Table 2.3 provides an overview of the relevant scales. It indicates the purpose of each scale, the aspects or components that each addresses and how each scale is applied to the three elements of group-functioning mental models. Finally, examples of how the items can be operationalised for use in this study are provided.

The first element of group-functioning mental models, the perceptions of individual group members about other group members' knowledge, skills, attitudes, is borrowed from the Social Relations Model (Kenny & La Voie 1984) and the Group Potency Scale (Guzzo et al. 1993). The focus of these models is on how the individual perceives the knowledge, skills and attitudes of other group members and therefore this model is suitable for addressing this particular issue in group-functioning mental models. An appropriate item to include in the

questionnaire, originating from this model and adapted to the local government context is: “How do you view the attitudes of your strategy group members towards developing organisational strategy?”

The second element of group-functioning mental models, addressing the perceptions of individual group members about how the team interacts, comes from the Group Environment Questionnaire (Carron, Widmeyer & Brawley 1985). The aim of this questionnaire is to investigate group integration, individual perceptions of closeness, similarity and bonding within the group as a whole. This coincides with the focus of the second element and a typical interview question adapted to the context of the study is: “How do group members communicate about each other’s responsibilities in the group?”

The third element of group-functioning mental models, addressing the perceptions of individual group members about the roles and responsibilities of group members, is related to the Belbin Team Inventory (Belbin 1981) where roles to each team member are assigned. Only the team inventory is applicable in this study, to assess the similarity of how group members see the team-roles of the group members. A typical interview question, adapted to suit the local government context is: “Who do you see as the natural leader of this group?”

More detail about the specific features of these models is provided in Table 2.4 and more detail about the questions selected for the interviews and how they link to the research questions is available in Table 3.3 in Chapter 3.

Table 2.4: Scales applicable to Group-functioning mental models elements

	Kenny & La Voie's Social Relations Model (Kenny & La Voie 1984)	GEQ (Group Environment Questionnaire) (Carron, Widmeyer & Brawley 1985)	Belbin Team Inventory (Belbin 1981)	Group Potency Scale (Guzzo et al. 1993)
Developed for:	The study of perceptions, meta-perceptions and meta-accuracy in social interactions	The study of group integration, individual perceptions of closeness, similarity and bonding within the group as a whole. Also individual attractions to the group, individual's perceptions about personal motivations acting to retain him/her in the group.	It is a behavioural tool, created for the assessment of individual behaviour in a team environment. It includes self-perception inventory and team inventory measures. Team inventory classifies 9 team roles; each team role is defined by specific characteristics of the individual.	8-item questionnaire developed to assess perceptions about overall group-level effectiveness.
Link to this study:	Meta –perceptions: an individual's perceptions about another team member	Sheds light on the perceptions of individuals about the interaction of the group.	Measures perceptions of group members about the roles of other group members.	It measures the shared beliefs among team members that they can be effective as a team
Aspects/ components	Interpersonal components: <ul style="list-style-type: none"> Assimilation (does the perceiver differentiate among targets?) 	GEQ assesses four manifestations of group cohesion: <ul style="list-style-type: none"> Group integration-task Group integration-social Individual attractions to group task Individual attractions to group social 	Nine team roles: <ul style="list-style-type: none"> Plant Resource Investigator Co-ordinator Shaper Monitor evaluator Teamworker Implementer 	Eight items: <ul style="list-style-type: none"> This team has confidence in itself This team believes it can become unusually good at producing high-quality work. This team expects to be known as a high-performing team. This team feels it can solve any problem it encounters

	Kenny & La Voie's Social Relations Model (Kenny & La Voie 1984)	GEQ (Group Environment Questionnaire) (Carron, Widmeyer & Brawley 1985)	Belbin Team Inventory (Belbin 1981)	Group Potency Scale (Guzzo et al. 1993)
Aspects/ Components (continue from previous page)	<ul style="list-style-type: none"> Consensus (Do perceivers agree in their perceptions of various targets?) Uniqueness (Do perceivers have unique perceptions of different targets?)		<ul style="list-style-type: none"> Completer finisher Specialist 	<ul style="list-style-type: none"> This team believes it can be very productive This team can get a lot done when it works hard. No task is too tough for this team This team expects to have a lot of influence around here.
Application to the elements of group-functioning mental models	Base questions on how individual (perceiver) perceives the knowledge, skills and attitudes of group members (targets).	The focus is on the task integration – entails judgments about the general state of the group and also the social interaction – entails judgement that is more personal and individual	Only the team inventory is applicable – assess the similarity of how group members see the team-roles of the group members.	Include some of the items in the questionnaire.
Addressing the element in the proposed study:	The perceptions of individual group members about other group members' knowledge, skills, attitudes.	Links to group interaction – the individuals' perceptions about the closeness, similarity and bonding within the group, also the individual attractions to the group – the individuals' perceptions about personal motivations acting to retain him/her in the group Addresses the perceptions of individual group members about how the team interacts.	The perceptions of individual group members about the roles and responsibilities of group members	Links to the group's collective beliefs about the group's ability to be effective. This is related to team interaction and perceptions about knowledge and skills available in the group.
Example of proposed operationalised items:	"How do you feel about the levels of knowledge in developing organisational strategy that your group members display?" "How do you view your strategy group members' skills in developing organisational strategy?" "How do you view the attitudes of your strategy group members towards developing organisational strategy?"	To assess personal involvement in the group: "Considering all the work groups that you are participating in, how important is this particular work group to you?" "What is your view about the style of performance of this group?" To assess perceptions of the group as a whole, the following: "Do you view your group as united in trying to reach your performance goals? "How do group members communicate about each other's responsibilities in the group?" "Who takes responsibility for error or poor performance in your group?"	Provide a clear definition of each of the roles (including the characteristics of each 'team role') and ask interviewees to assign a team role to each of the group members.	"Can your group be perceived as a high-performing group?" "Does your group believe it can successfully achieve your task objectives?" "Does your group have confidence in itself?" "Does your group believe it can get a lot done when it works hard?"

2.7 Context of the study: local government regional councils in South East Queensland

In Australia, local government acts as the third level of governance and has legislative responsibility for many functions and activities relevant to a local area. Local government areas are classified as city councils (in urban and suburban areas), shire councils (in rural areas) and regional councils (formed by the amalgamation of smaller shire councils) (Local Government Reform Commission 2007).

Local government functions include:

- building and maintenance of key infrastructure, including roads and bridges, drainage, waste management;
- regulation of local communities (for example, inspection, licensing and regulation of food premises and animal and noise control);
- management and planning of the environment and urban areas;
- offering services such as aged care and recreational facilities;
- acting as community leaders, agents and coordinators for service delivery; and
- acting as information brokers (Australia Local Government 2001-2).

2.7.1 Local government reform

In Australia, during the mid-1990s, nation-wide local government reforms embracing both economic and governance objectives were implemented. The main goal was to improve efficiency through the consolidation of small authorities and implementation of market practices (Marshall & Sproats 2000). This goal was underpinned by transparent and responsive government through extensive consultation between councils and constituents that required enhanced citizen involvement. Strategic management practices were included in all state legislation with the view of enabling input from residents into policy formulation and to hold authorities accountable for their performance (Marshall & Sproats 2000). About a decade later, on 17 April 2007, reforms recurred when a state-wide reform of Queensland's local government sector was announced by the

Queensland Government. The purpose of the reform was to address future challenges and ensure optimum service delivery to all communities in Queensland (Local Government Reform Commission 2007). The focus of the reform was on sustainability criteria and, through assessment of shape and size, consolidation of former local councils was recommended. The motivation for consolidation of smaller councils was based on creating stronger, more effective and financially viable councils and, through effective planning and governance, ensure optimal service delivery to all communities (Local Government Reform Commission 2007).

The Local Government Act 1993 and the Local Government Reform Commission Report stipulated a regionally-based structure that was achieved by amalgamating the previous 157 councils into 73 councils in Queensland. A regionally-based structure was essential in accommodating changes in regional economies with regard to transportation, telecommunications and economic interdependencies (Local Government Reform Commission 2007).

The new local government structure for Queensland consists of seven city councils, six shire councils and thirty regional councils. An important change to the previous structure is the creation of the regional councils. The regional councils were created by amalgamation of between two and nine previous shire councils. The criteria applied for the amalgamation included size and scale to enable sustainable growth and development over large regional areas (Local Government Reform Commission 2007).

As regional councils are new structures and the amalgamation of shires involves unification of organisational structures, staff, processes and facilities, it was expected that these changes would have a significant effect on strategic thinking in the new councils. As no research studies about strategic thinking in regional councils have been executed, this study makes valuable contributions towards theory and practice. The regional councils selected as cases for this study include Lockyer Valley Regional Council, Dalby Regional Council and Toowoomba Regional Council as major cases with the strategy groups within these councils as embedded case studies to present a total of nine cases. More

detail about the cases and the criteria applied for selecting these councils is provided in Chapter 3.

2.7.2 Regional councils in South East Queensland

It is forecasted that the South East Queensland area will continue to be one of the fastest population growth areas in Australia (Local Government Reform Commission 2007). This may be due to continued migration of people out of the city and the ‘tree-change’ phenomena. Other attractions may be the lower cost of living in regional areas, tourism attributes and development of industry in regional areas. The continued population growth in this area required the planning and management of strategies to respond successfully and sustainably to the demands of the rapid growth. In this regard, sub-regions were established to focus on the needs of the sub-regions specifically. The sub-regions contain a range of important ecosystems, areas of significant biodiversity value, vegetation and forest, areas of high scenic and landscape amenity, national parks and conservation areas of various types, water catchments, storages and groundwater resources and good quality agricultural soils and land suited for rural production—and these aspects needed to be planned for (Local Government Reform Commission 2007). The South East Queensland area includes three broad and distinct rural areas in SEQ regional plan:

- Rural water catchment: This area includes major water catchment for the region, with farming as the main economic activity.
- Farming and horticulture production: This area includes highly productive agricultural and horticultural lands and farming enterprises.
- Farming and agro-ecotourism area: This area includes the World Heritage-listed scenic rim, scenic natural landscapes and agricultural and horticultural production (Local Government Reform Commission 2007 p.12).

2.7.3 Development of strategic plans for councils

Following the local government reform stipulations, all councils were required to proceed with the strategic planning process and the Queensland Government Department of Local Government, Sport and Recreation compiled and

distributed to all councils across Queensland a step-by-step guide to undertaking corporate planning in local government (The State of Queensland, Department of Infrastructure and Planning, 2007). This ‘Plan and Deliver’ program provided councils with an example of a simple six-step cycle for effective corporate planning that they could use—although councils were under no obligation to follow the program. Also included in this program was a corporate planning diary, indicating timeframes for finalising the stages. The six stages include:

- Stage 1: Review strategic direction (August 2008–Jan 2009)
- Stage 2: Develop the corporate plan (Feb 2009–Mar 2009)
- Stage 3: Consultation and feedback (Mar 2009–May 2009)
- Stage 4: Develop the operational plan and budgets (Feb 2009–Aug 2009)
- Stage 5: Implement the plans (Oct 2009–Jun 2010)
- Stage 6: Annual reporting and review. (Jul 2010–Nov 2010).

Although these stages and timeframes were recommended by the Queensland Government, they were not prescriptive as the Plan and Deliver document was designed to assist councils; and each council could amend the program to suit their preferred practices (The State of Queensland, Department of Infrastructure and Planning, 2007).

After exploring the context for this study, the conceptual framework is now presented to bring together the theoretical perspectives included in the literature review.

2.8 Conceptual framework

The conceptual framework developed for this study is presented in Figure 2.2. This framework brings together the theory from the main constructs; mental models and strategic thinking as discussed in the literature review. Furthermore, the framework identifies all the constructs which are examined in this study.

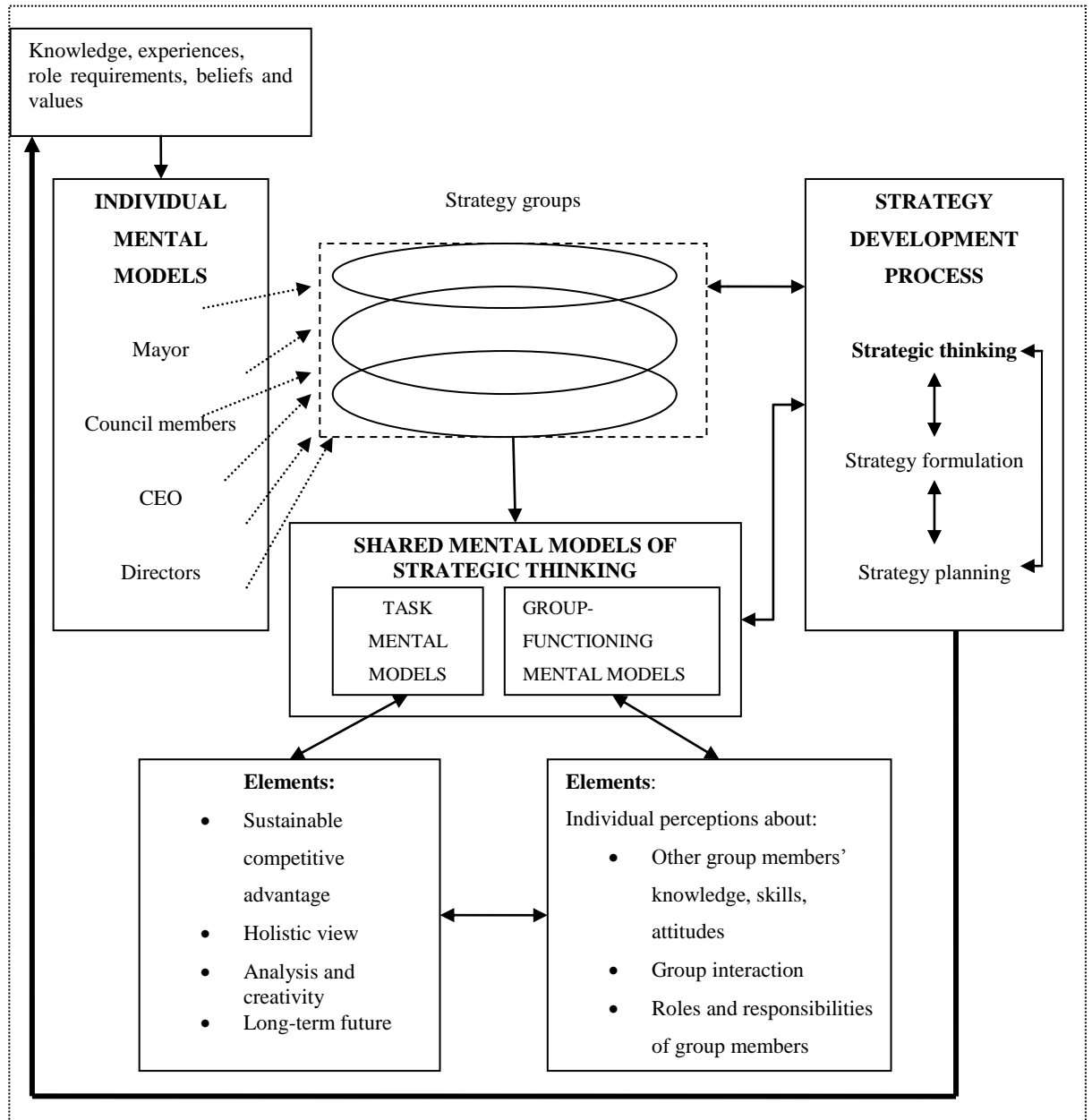
The aim of the conceptual framework is to visually present how these constructs are related and depicts the roles that individual and shared mental models play in strategy development. The conceptual framework shows that certain events need to occur before council members commence the strategic planning process for

their region. First of all, strategy groups are established to undertake the strategic planning process. The framework shows that there is more than one strategy group active in councils, the groups may overlap, and staff members across the organisational levels are included in the strategy groups. The objective of strategy groups is to develop organisational strategy and, to do this, they need to engage in strategic thinking first; developing options for the long-term direction of the council. When strategy groups apply strategic thinking in considering the long-term direction of the council, they develop shared mental models of strategic thinking.

These mental models consist of mental models about the task of strategic thinking, but also mental models about the functioning of their strategy group. The task mental model includes task-specific knowledge that people consider when they apply strategic thinking; issues related to performing the task of strategic thinking. The issues that are related to the elements of strategic thinking include: thinking about sustainable competitive advantage, thinking holistically, thinking analytically and creatively and thinking long-term about the future. These elements of the task mental model are investigated in this study. The group-functioning mental model presents the way that group members perceive each other and how the group interacts. The elements related to group-functioning mental models include: individual perceptions about other group members' knowledge, skills, attitudes, perceptions about group interaction, and the roles and responsibilities of group members. These elements are investigated in this study.

An important aspect of these elements is the level of agreement among individuals within strategy groups and across strategy groups. High levels of overlap in task mental models and group-functioning have a positive effect on group functioning and this was found to contribute towards effective task completion. However, complete overlap and identical task and group-functioning mental models may have a detrimental effect upon group functioning and effective task completion as the advantages of diversity in groups are diminished.

Figure 2.2: Conceptual framework of relationships between strategic thinking, shared mental models of strategic thinking and the strategic planning process



Source: Developed for this study

The levels of agreement of task mental models and group-functioning mental models within groups and among strategy groups are investigated in this study.

The shared mental models of strategic thinking influence strategic thinking as part of the strategy development process and, therefore, these mental models influence strategy development in organisations. Strategic thinking occurs before

the strategic planning process commences and entails analysis of the internal and external position of the organisation, opportunities and threats, but also creativity to generate unique strategic options. From the strategic options, the most suitable option is selected and developed through the strategy formulation process. Strategic planning follows strategy formulation and entails the planning and implementing of corporate strategies developed through strategic thinking. Strategy implementation includes the development and implementation of business level and operational strategies. Although the focus of this study is on intended strategy development—the deliberate planning of strategic direction for the organisation—strategy development is also influenced by strategies that emerge from within the organisation. Therefore, the flow in the process, as indicated by the double-pointed arrows, shows movement between stages in the strategy development process. Strategy development is not a simple, one-way movement through the different stages. As indicated in the conceptual framework, the outcome of the strategy development process feeds back to the mental models of staff members. Through the strategy development process, staff may have been exposed to new information and knowledge about how to adapt or change the overall direction of the organisation to achieve better outcomes in future. They may have been exposed to new experiences and role requirements and, through working closely with other strategy group members, their beliefs and values may have been influenced. These issues have an impact on their individual mental models.

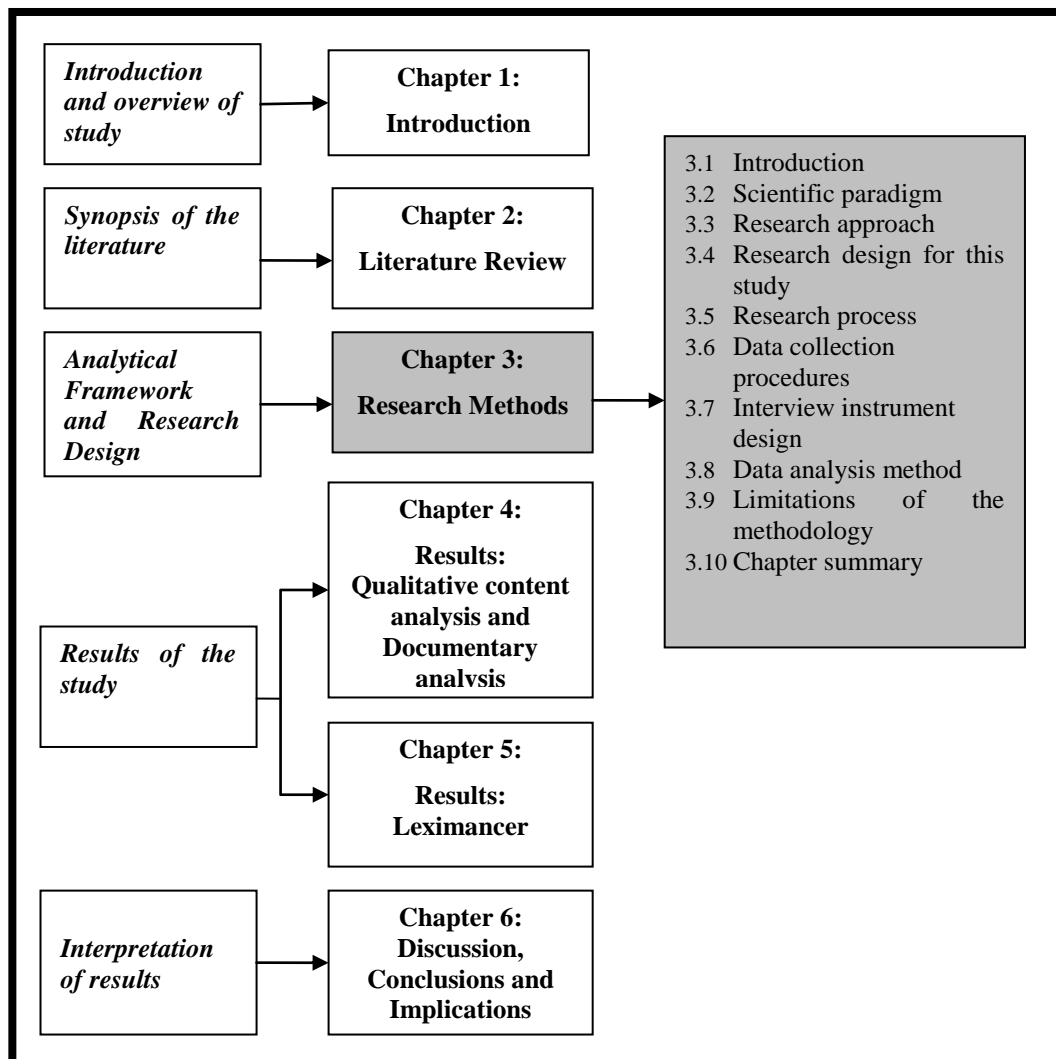
The proposed conceptual framework indicates that the interplay between mental models and strategy development is not a once-only event, but an ongoing process of considering and adapting the long-term direction of the organisation by analysing the challenges in the environment, creating and developing strategic options, selecting strategies, planning, implementing and evaluating the strategies. This process influences and is influenced by the individual and shared mental models of strategic thinking of staff members.

2.9 Chapter summary

This chapter identified and reviewed the major constructs of this study: strategy development, strategic thinking and mental models. Strategy development was discussed and components such as strategic management and strategic planning were investigated and their interrelationships investigated. Strategic thinking was examined and contrasted with operational thinking. The elements of strategic thinking, that form the basis for investigating task mental models of strategic thinking were identified and explored. To clarify who the strategic thinkers in organisations are, the role players in strategic thinking were indicated and their role in strategy development investigated. Following from the first stage of clarification of concepts, the discussion then turned to investigating the contextual factors in strategy development. From a broad perspective, the differences between private and public sector were considered and then strategy development in the public sector was further studied. This led to a discussion on strategy in local government councils and provided the background for this study. The next chapter will detail the research methods that are applied in this study.

Chapter 3

Research Methods



3.1 Introduction

In Chapter 2, the literature that the study is based on is reviewed and from the literature the constructs underpinning this study are identified and explained. Building on those theories, the research design is developed and, in this chapter, the research methods applied in the study is described.

Because research designs are embedded in scientific paradigms, this chapter commences with a discussion about different scientific paradigms and the paradigm selected for this study, the realism paradigm, is detailed. Based on the realism paradigm, the research approach, research design and research process are explained. Next, the data collection procedures and the interview instrument are noted. This is followed by a discussion about the data analysis approach and the software program used in this study (Leximancer) is explained. The limitations of the research methods are discussed and, finally, the ethical considerations in this study are presented.

3.2 Scientific paradigm

In business research, the main paradigms that are discussed in the literature are Positivist Research, Interpretivist Research and Critical Research (Cavana, Delahaye & Sekaran 2001). From these paradigms, scientific methods to conduct research are developed. A scientific method presents a sequence of actions or techniques designed to develop theoretical assertions and to analyse empirical evidence and either confirm or refute prior conceptions (Zikmund 2003). Perry (1998) classified scientific paradigms according to reasoning approaches where the inductive approach (reasoning based on observed facts) represents the phenomenological paradigm that consists of Critical Theory, Constructivism and Realism. The deductive approach (reasoning based on interpretation of the meaning of results) represents the Positivism paradigm (Perry 1998). Guba and Lincoln (1994) initially identified four paradigms: Positivism, Postpositivism, Critical Theory and Constructivism. After further investigation, they revised their model to include a fifth paradigm, the participatory paradigm (Lincoln & Guba 2000). Healy and Perry (2000) based their categorisation on the earlier model of Guba and Lincoln (1994) and include Positivism, Critical Theory, Constructivism and Realism. In their comparison of paradigms, Healy and Perry divide them into two categories; in the first category the positivism paradigm is presented. This paradigm dominates the science field where science is based on the quantitative measures of independent facts about an issue. The second category includes paradigms that focus on social realities (critical theory,

constructivism and realism) and qualitative research is deemed as more appropriate in these paradigms (Healy & Perry 2000).

Although in-depth investigation of scientific paradigms is beyond the scope of this study, a number of significant paradigms are reviewed in order to justify the paradigm used in this study. To provide a broad overview of the different research paradigms, Table 3.1 presents a comparison of the research paradigms, based on the categorisations of Lincoln and Guba (1994; 2000) and Healy and Perry (2000). These authors built their comparisons of paradigms according to three elements: ontology, epistemology and methodology. They define ontology as the reality (the issues) that researchers investigate, epistemology as the relationship between the researcher and the reality, and methodology as the technique used to investigate the reality (Healy & Perry 2000 p. 119). In order to justify the selected paradigm and research methods that guide the study, the five paradigms are now briefly investigated and their application to this research project is discussed.

Positivism

Healy and Perry (2000) argued that the positivism paradigm is inappropriate when approaching social sciences phenomena. With regard to this study, the positivism paradigm is not applicable for three reasons. First, mental models of strategic thinking are not observable phenomena and are therefore difficult to quantify. Secondly, mental models are extracted from research subjects through language (see Section 2.5.4) by using interviews that connects the researcher with the research subjects, and the researcher cannot separate himself or herself from their world. Finally, studying mental models in this research includes individuals' knowledge and experiences and also the shared knowledge and experiences of strategy group members that do not allow precise and quantifiable measurement.

Deductive reasoning, as applied in the positivist approach, cannot be used to predict human thinking of individuals or groups. Social and political issues that are excluded in the positivist approach are important in this study and are also included in the investigation of mental models.

Table 3.1 Scientific research paradigms

PARADIGM					
	POSITIVISM	CRITICAL THEORY	CONSTRUCTIVISM	PARTICIPATORY	REALISM/ POSTPOSITIVISM
ONTOLOGY	Reality is real and apprehensible	Historical realism - virtual reality shaped by social, economic, ethnic, political, cultural, and gender values, crystallised over time	Multiple local and specific constructed realities	Participative reality – subjective-objective reality, co-created by mind and given cosmos	Critical realism - reality is 'real' but only imperfectly and probabilistically apprehensible
EPISTEMOLOGY	Objectivist: findings true	Transactional/ Subjectivist: value mediated findings	Subjectivist: created findings	Critical subjectivity in participatory transaction with cosmos; extended epistemology of experiential, propositional and practical knowing; co-created findings	Modified dualist/ objectivist; critical tradition/ community; findings probably true
METHODOLOGY	Experiments/ surveys: verification of hypotheses, chiefly quantitative methods	Dialogic/dialectical: researcher is a 'transformative intellectual' who changes the social world	Hermeneutical/ dialectical: researcher is a 'passionate participant' within the world being investigated within which participants live	Political participation in collaborative action inquiry; primacy of the practical; use of language grounded in shared experiential context.	Case studies/ convergent interviewing: triangulation, interpretation of research issues by qualitative and by some quantitative methods such as structural equation modelling

Source: Adapted for this study from Lincoln and Guba's table 6.3: Basic Beliefs of Alternative Inquiry Paradigms - Updated (2000 p.168), their previous 1994 version (1994) and Healy and Perry's Table 1: Four categories of scientific paradigms and their elements (2000 p.119) .

Critical Theory

Critical theory is not appropriate for this study as the focus is on understanding *how* the mental models of strategic thinking of strategy group members influence the development of organisational strategy, as opposed to studying how people are influenced by their historical mental, social and emotional structures (Healy & Perry 2000; Lincoln & Guba 2000).

Constructivism

To study a phenomenon through this paradigm requires the researcher to actively participate in a field study to capture the variety of realities of the research subjects. These realities are constructed from the negotiations and agreements between community members regarding what is accepted as the truth (Lincoln & Guba 2000).

Although the assumptions incorporated in this paradigm may seem to resemble aspects of mental models, that is, the personal characteristics that influence a person's world views, the scientific paradigm should not be confused with mental models. The scientific paradigm represents the philosophical foundations of how the world is understood and provides guidelines for research, whereas mental models represent individual's and groups of individuals' understanding of specific domains. For this study, the theoretical underpinning of strategic thinking and real dimensions of organisational strategy, as well as the mental models of strategic thinking, need to be explored and therefore this approach is not appropriate for the study.

Participatory paradigm

The appropriate methodology for this paradigm includes action inquiry in a shared experiential context (Lincoln & Guba 2000). Researchers are an integral part of the world of study, co-creating with study participants their world, and they are also responsible for the application of the research outcomes (Breau & Peppard 2001). The action research model can be applied where knowledge is developed through phases of interaction, reflection and participation (Breau & Peppard 2001).

The aim of this study is to explore how mental models of strategic thinking influence strategy development and action research, thus, the application of research is not applicable and the participatory paradigm is not appropriate in this research.

Realism

Realism is also known as critical realism (Perry 1998), post-positivism (Ponterotto 2005) or neo-post-positivism (Krauss 2005) and includes elements of both positivism and constructivism (Healy & Perry 2000). Where positivism draws on a very objective world-view and portrays reality as a single, concrete reality, constructivism takes a very subjective world-view and explains reality as a representation of multiple realities of individuals. Realism draws on both objective and subjective world-views and includes multiple perceptions about a single, mind-independent reality (Healy & Perry 2000; Krauss 2005). Individual perceptions are investigated to enable the researcher to study reality beyond those perceptions (Healy & Perry 2000). A mixture of theoretical reasoning and experimentation is applied to obtain empirical knowledge of the real world by studying generative mechanisms that cause events (Krauss 2005). Realism acknowledges the differences between reality and people's perceptions of reality (Krauss 2005). Reality, according to the realism paradigm, is not the product of people's perceptions and it operates on two different dimensions (Dobson 2002). These dimensions include the 'intransitive dimension' that presents the natural and relatively unchanging real world and the 'transitive dimension' that presents the social and historical value-laden observation of reality (Dobson 2002). Tsoukas (1989 p. 553) labels these dimensions as the 'real, actual and empirical domains of reality' and asserts that these domains are stratified as well; referring to the emergent powers that natural and social structures have.

Considering the nature of this approach, the realism paradigm is the appropriate philosophical framework for this study for several reasons. First, the research questions for this study aim at discovering unobservable real world phenomena and the realism paradigm is applied in similar studies (Perry 1998). Secondly, following from Krauss' (2005) description of the method of studying the real world as explained above, both theoretical reasoning and investigation of

individual and shared mental models are applicable in this study. Thirdly, this study requires inductive theory building to establish the links between mental models of strategic thinking and strategy development, although elements of deductive theory testing are also included in considering prior theory. Finally, as explained in Section 2.5.4, language is used to elicit mental models and the interview protocol is a suitable method to use. Perry (1998) views realism as the appropriate paradigm for case study research. Case study methodology entails moving from theory-building methodology to probe questions through in-depth interviews to obtain information about a predetermined outside reality. In this regard, the research methods usually applied in examining mental models coincides with the realism paradigm.

In this section, different scientific paradigms have been considered and the realism paradigm is selected as the appropriate research paradigm for this study. The research paradigm guides the way in which research is conducted and indicates methods and techniques appropriate for research. Ponterotto (2005) contend that it is essential that a research approach is anchored in a specific research paradigm because it provides the background to understanding the purpose, goals, methods and methods of a study. The following section addresses the research method that is applied in this study.

3.3 Research approach

The research questions of a study influence the choice of research method and determine whether the research is exploratory, descriptive or causal (Zikmund 2003). Exploratory studies are undertaken when a research problem has not been fully addressed in the literature and greater understanding is needed to crystallize a problem (Cavana, Delahaye & Sekaran 2001; Zikmund 2003). Descriptive studies aim at describing characteristics of a specific variable and causal studies aim at establishing the cause-and-effect relationships between variables (Cavana et al. 2001). To gather information for exploratory studies, four categories of exploratory research methods are identified: experience surveys, secondary data analysis, case studies and pilot studies (Zikmund 2003 p. 114). The choice of exploratory research method also depends on the research questions. As explained in Chapter 1, mental models of strategic thinking, as a research area,

has not been sufficiently addressed and the subsequent research questions for the study have not been previously addressed. Therefore, an exploratory study is the appropriate research approach for this study and case study research is applied.

The research approach addresses issues such as choices between qualitative and quantitative approach, and an induction or deduction approach. These issues are now further detailed; followed by a discussion on case study research.

3.3.1 Qualitative and quantitative data

Although exploratory studies may provide both qualitative and quantitative data, most exploratory studies are focused on words, observations and meanings (Zikmund 2003). To study mental models of strategic thinking, the focus is on analysing words and meanings and, therefore, a qualitative approach is followed. Cavana et al. (2001) argue that the aim of qualitative research is to discover how people construct meanings in their contextual settings and that the focus is on understanding human behaviour. The qualitative approach allows for exploration of thoughts and behaviour and reveals people's values, interpretative schemes, mind maps and belief systems in their constructs of reality (Cavana et al. 2001 p. 43). Through qualitative research, 'rich' data that include both explicit and tacit knowledge can be elicited from relatively few people (Ticehurst & Veal 1999). Qualitative and quantitative data can also be integrated in a study to produce synergistic results. Eisenhardt (1989) indicates that multiple data sources make triangulation of results possible and provide richer results. The advantage of combining qualitative and quantitative data is that it anchors subjective views derived through qualitative data to the objective theory findings obtained through quantitative data. Given the objective of this study, the qualitative approach is well-suited as the primary research approach, and secondary quantitative data obtained from the survey questions related to the scenario included in the interview protocol (see Section 3.7) is also incorporated.

3.3.2 Induction and deduction

Induction refers to the process of establishing propositions that are based on observed facts where deduction represents the process of arriving at conclusions about results through interpreting data analysis (Cavana et al. 2001 p. 455-6). Induction is related to theory building, whereas deduction entails theory testing (Perry 1998). Inductive theory is relevant in the realism paradigm and, as Gummesson (2005 p. 322) aptly put it, ‘inductive research lets reality tell its story on its own terms and not on the terms of extant theory’. Although it would seem that pure induction is appropriate in realism, the reality is that prior theory does play a role in any study (Perry 1998) and researchers do enter research studies with tacit theories (Strauss 1987). Perry (1998) supports this view and claims that it is unlikely that researchers could genuinely separate induction and deduction and concluded that a pluralistic approach is becoming the preferred approach. Miles and Huberman (1994) concur with the view that there is interplay between induction and deduction research approaches. The realism approach to research design entails a process that commences with a thorough literature research before data gathering is initiated. Prior theory is gathered and viewed as additional evidence that is used to clarify the phenomena before data collection commences (Sobh & Perry 2006).

In this study a combination of both induction and deduction is applied. The literature indicates that although induction is the suggested research approach in case study research, both processes of prior theory and theory emerging from the data are always involved (Miles & Huberman 1994; Perry 1998), that ‘both extremes are untenable and unnecessary’ (Parkhe 1993, p. 252) and that the process of theory advancement requires continuous interplay between the two (Perry 1998, p. 789).

For this study, deduction is relevant during the phases of development of literature review, development of the initial conceptual framework, the formulation of the propositions and the development of the interview protocol. The induction approach is followed when the results from the data are interpreted and new theory is developed that is also presented in the final conceptual framework. Following the advice obtained from the literature, both approaches

are viewed as important in this study and are viewed as equally important in this study.

3.3.3 Case study approach

Stake (2000) posits that the case study exploratory research method is not only a methodological choice, but also a choice of what needs to be studied. What needs to be studied depends on the research questions. This is confirmed by Yin (2009) when he argues that the type of research design depends on the type of research question of a study and he added that the extent of control that the researcher has over the events and the degree of focus on contemporary versus historical events also needs consideration. One of the most common methods of conducting qualitative research is by means of case studies (Stake 2000). Yin (2009 p.18) offers a twofold, technical definition of case studies:

'A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.

The case study inquiry

- *cope with the technically distinctive situation in which there will be many more variables of interest than data points, as one result*
- *relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result*
- *benefits from the prior development of theoretical propositions to guide data collection and analysis.'*

Case study research is employed to deliver general or specific conclusions about certain phenomena and recognises variables and interrelations of the variables of the phenomena (Gummesson 2005). It provides real world data from which concepts, propositions and theory can be appraised. Gummesson (2005) described case study research as systematic and holistic, providing full and rich accounts of the relationships and interactions between a magnitude of factors. Case study research is applicable when the form of question is *how* or *why*; when no control over the events is required from the researcher and when the focus is on contemporary events (Yin 2009). This study is in agreement with all three conditions: this study aims at answering how mental models of strategic thinking influence development of organisational strategy. There is no control over events required from the researcher; and mental models of strategic thinking can be

viewed as a contemporary event. Although the research questions of this study are worded as *what* questions, Yin (2009 p.9) distinguished between two types of *what* questions: the first type includes inquiry about the nature of a phenomena; and the second a quantifiable *how much* or *how many* inquiry. The first type has a justifiable rationale for conducting exploratory research and the research questions of this study fall within this type and, therefore, case study research is applicable.

The design of case study research includes specification of the unit of analysis, verification of single-case or multiple-case studies, determination of the number of cases, the case study selection criteria and the method of data collection. These features are now addressed.

Unit of analysis

The unit of analysis provides an indication of what the ‘case’ is and it is related to the research question. According to Yin (2009), a case can be an individual and if several individuals are included, a multiple-case study is employed. Cases can also be events of entities other than single individuals and the unit of analysis depends on the primary research questions (Yin 2009). If the unit of analysis is a small group, the members of the group must be distinguished from those outside the group (Yin 2009). It is also desirable to include spatial (geographical location of the cases) and temporal (time boundaries) criteria to distinguish the cases. In this study, the unit of analysis includes strategy groups in Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council.

Single and multiple-case studies

The case study is viewed as a comprehensive research strategy because it incorporates specific approaches to data collection and data analysis (Yin 2009). Case study research can include both single- and multiple-case studies. Stake (2000) distinguished between intrinsic case studies, instrumental case studies and collective case studies. Intrinsic case studies include a single case and are applied when the researcher seeks for deeper understanding of a particular case to understand a problem or trait of a specific case. With instrumental case

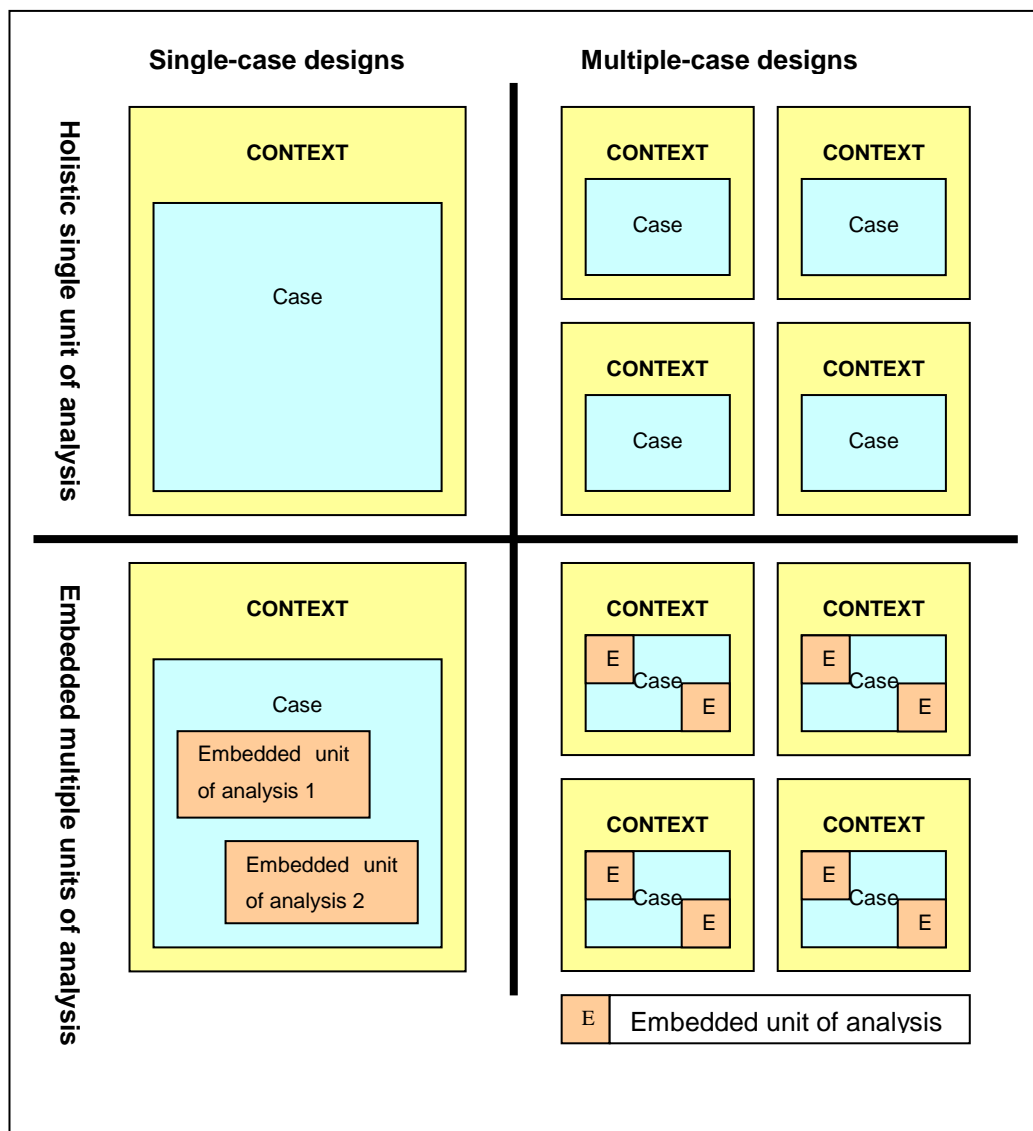
studies, the researcher aims at explaining a certain phenomena and uses one or more cases to provide insight into an issue, and the case/s itself are of secondary interest. Collective case studies represent those studies where the interest is even less on the case itself than in instrumental case studies. In this approach, a variety of similar or dissimilar cases are used to investigate a phenomenon, population or general condition (Stake 2000). For this study, the *instrumental* case study approach is followed because the researcher is interested in obtaining insight into the role of mental models of strategic thinking in strategy development and the selected cases are of secondary interest.

The evidence derived from multiple case studies is often considered more compelling and the overall study is considered more vigorous, forceful and of higher quality (Yin 2009). Yin (2009) argued that even a two-case design is a valuable objective compared to a single-case study. When the same study contains more than a single case, multiple-case studies are employed. Multiple case studies also allows for cross-case analysis that results in richer theory building (Perry 1998). This study employs the multiple-case study approach.

Specific designs for case studies

Yin (2009) identifies four specific types of designs applicable to case study research. These types are graphically depicted in Figure 3.1. In this figure, two types of single case designs and two types of multiple case designs are presented. Single-case designs are applicable when a unique or extreme case that is critical in testing a well-formulated theory needs to be studied. Other situations that also qualify for single case designs are when a single-case is representative or typical of many other cases; when a case has been previously inaccessible for enquiry; or when a single case is studied at two or more different points in time (Yin 2009). Embedded case study design applies when, within one case, different units of analysis are studied. Embedded case study design can occur in single-case designs, as well as multiple-case designs (Yin 2009). The embedded cases are presented as units within the case and indicated in the pink squares marked with an 'E' in Figure 3.1.

Figure 3.1: Types of case study designs



Source: Yin (2009 p. 46)

In this study, a multiple-case design with nine units of analysis is used.

Number of cases

Although there is no precise guide to indicate the number of cases to include, the literature seems to suggest that between a minimum of two to four cases and a maximum of between ten to fifteen cases may work well (Perry 1998; Yin 2009). This study includes nine cases that consist of strategy groups on three organisational levels from Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council. The nine cases include thirty-eight interviews with strategy group members. Perry (1998) suggests that a PhD thesis requires about thirty-five to fifty interviews in case study research.

Case study selection criteria

An underlying principle for selecting cases is to choose information rich cases—cases worthy of in-depth study (Perry 1998). Yin recommends that cases must be selected so that they predict similar results for predictable reasons (that is, literal replication); or produce contrary results for predictable reasons (that is, theoretical replication) (Yin 1994 p.46). There is similarity in regional councils and replication logic is underpinned in the criteria applied to select the case studies for this study. The criteria applied for selecting case studies are:

- **Australian Local Government Councils**

Local government in Australia is currently engaged in a reform process to enable better management of resources and provision of services, and this process requires high level strategic management. In-depth studies of strategic management in Australian local government will support these strategic management processes. This study runs parallel with the planning processes of local councils (see Section 2.7.3). Furthermore, the researcher was extensively involved in the reform processes of a large local government organisation in South Africa in 2000 and has a good understanding of how local government operates and the challenges that they face in their strategy development process.

- **South East Queensland**

Rationale: It is forecasted (Report of the Local Government Reform Commission, vol 1, p. 5) that the South East Queensland region will be one of the fastest growing regions in Australia over the next twenty to thirty years. This makes the strategic management process of the area critical and strategic thinking is crucial in this process. This area is also accessible to the researcher and positive cooperation from regional councils in this area was obtained, whereas other regional councils did not wish to participate in the study.

- **Regional Councils**

Rationale: The major objective of the local government reform as set out in the Local Government Act 1993 and the Local Government Reform Commission Report is the creation of a regionally-based structure. This is vital in responding to the changes in regional economies regarding transportation, telecommunications and economic interdependencies. Former shire councils

were consolidated through amalgamation to cover larger areas to make service provision more economically viable. The amalgamation of two or more shire councils resulted in new regional councils and these councils now need to develop strategic plans. Regional councils' strategic groups include council members from former shire councils; and developing shared mental models of strategic thinking is crucial in the strategy development processes of these councils.

- **Regional council size**

Rationale: The number of councillors representing a regional area is related to the population estimate and the area covered by the regional council. The classes proposed by the Local Government Boundaries and Review Commission include: four councillors plus a mayor; or six councillors plus a mayor; or eight councillors plus a mayor; or ten councillors plus a mayor. For the purposes of this study, three regional councils are selected according to:

- small (six councillors plus a mayor) [Lockyer Valley Regional Council];
- medium (eight or ten councillors plus a mayor) [Dalby Regional Council]; and
- large (ten councillors plus a mayor) [Toowoomba Regional Council].

The smallest class (four councillors plus a mayor) is excluded from the study as very few regional councils fall within this class and may influence the predicted similarity aspect as described by Yin (2009).

Data collection in Case Study research

There are a number of methods of data collection applicable to case study research and Yin (2009 p.102) identify six sources of evidence, namely, documentation, archival records, direct observations, participant observation, physical artefacts and interviews. Each method has strengths and weaknesses and no single source has a complete advantage over the others. Each of these sources is now briefly reviewed and its relevance in the study is indicated:

Documentation

Documentation plays an important role in case study research as it provides background on the case, it is used to verify organisational details such as names,

departments, incumbents and it can be used to substantiate evidence retrieved from other sources. Yin (2009) warns against over-reliance on documents in case study research because organisational documents are written for specific purposes and audiences, and not all of the content may be applicable to a specific case study. In this study the corporate plans and information from the websites of the regional councils are analysed. Furthermore, the organisational structures of the regional councils indicating the divisions/directorates and strategy groups are included in the case study database (see Appendix A).

Archival records

These include survey data, organisational records such as budgets, maps and charts, and public file records. Although these records can be used in support of other sources of information, it should be carefully evaluated for relevance in a case study (Yin 2009). Where necessary, the available archival records are incorporated in the case study protocols of each regional council.

Direct observation

Direct observation and participant observation are not appropriate in this study as the regional councils regard their strategy meetings as confidential and not open to the public, although the corporate plans developed during these meetings are published and made available for public scrutiny. A different form of participant observation was used as the researcher requested strategy group members to provide observations about group-functioning in their strategy group. This aspect is addressed in Section 3.7.

Interviews

One of the most important sources of case study data is the interview protocol because most case studies address human affairs and behaviours (Yin 2009). In comparison to the structured inquiry of formal surveys, the interview protocol can be viewed as guided conversations and more fluid, although a line of inquiry is also followed (Yin 2009). The advantage of this approach, in comparison to formal surveys, is that richer data are obtained. Cavana et al. (2001) identify three types of interviews: structured, unstructured and semi-structured interviews. In structured interviews, the researcher enters the interview with a set of predetermined questions; in unstructured interviews there is no set of predetermined questions or planned sequence of questions. Semi-structured

interviews include a phase of unstructured interview where the main research issue is presented and general information about the issue is collected; followed by a phase of structured interview questions to elicit specific information from respondents (Cavana et al. 2001). Yin (2009) distinguish between in-depth interviews, focused interviews, and survey interviews. The focused interview coincides with Cavana et al.'s (2001) structured interview where the researcher has a specific set of questions related to the phenomena under investigation. The in-depth interview is unstructured and serves as method of inquiry about the research topic and the respondent is seen more as an informant than a respondent (Yin 2009). Survey interviews are applied to collect quantitative data and are more structured, resembling a formal survey. In this study, a combination of semi-structured interviews, in-depth interviews and survey interviews was applied. This approach is detailed in the next section.

For theory building, Eisenhardt (1989) proposes the application of multiple data collection methods. She explains that triangulation is made possible by multiple data collection methods, and stronger validation of concepts or hypotheses are achieved. Eisenhardt (1989) further suggests that multiple researchers involved in the study can also add advantage to the process by providing different perspectives of the results—which may increase the richness of data. Although this may be an additional advantage in some cases, it is not always possible, especially if only one researcher is allowed to conduct a study, as in the case of PhD studies.

In this study, multiple data collection methods are applied using the interview as primary source of data collection, and documentation as secondary source. More detail about the methods employed is presented later in the chapter.

This section focused on the case study process, explaining different aspects of its design. The way in which the case study is designed has quality implications and the quality criteria for qualitative studies are now investigated.

3.3.4 Quality criteria

To establish the quality of empirical social research, four tests are used: construct validity, internal validity, external validity and reliability (Yin 2009 p. 40). Regarding quality criteria in qualitative studies, Gummesson (2005) contends that quality criteria applicable in quantitative studies, including reliability and representativeness, cannot generally be applied to case study research. He argues that an issue such as sample size is addressed differently in case study analysis than in quantitative studies because the case selected is theoretical and purposeful—those cases that give maximum information are selected. Even a single-case study selected for a specific purpose can provide understanding of the specific case, and also provide generalised information about the constructs that are explored. Flick (2006) supports this view and recommends that understandings of reliability such as frequently repeated data collection leading to the same data and results should be rejected. Because qualitative research relies on interpretation of the phenomena on the part of the researcher, reliability is difficult to prove (Flick 2006). To address the difficulties of validity in qualitative research, Flick (2006) proposes a shift from the concept of validity to validation and from assessing the individual part of the research towards increasing the transparency of the research process as a whole. Although Yin (2009) acknowledges the difficulties in testing validity and reliability in qualitative research, he posits that the four tests common to all social science methods (construct validity, internal validity, external validity and reliability) are also relevant to case studies. He developed tactics to address the four tests. Table 3.2 presents these tactics.

Table 3.2 Case study tactics for four design tests

TESTS	CASE STUDY TACTIC	PHASE OF RESEARCH IN WHICH TACTICS OCCURS
CONSTRUCT VALIDITY	<ul style="list-style-type: none">• use multiple sources of evidence• establish chain of evidence• have key informants review draft case study report	Data collection Data collection composition
INTERNAL VALIDITY	<ul style="list-style-type: none">• do pattern matching• do explanation building• address rival explanations• use logic models	Data analysis Data analysis Data analysis Data analysis
EXTERNAL VALIDITY	<ul style="list-style-type: none">• use theory in single-case studies• use replication logic in multiple-case studies	Research design Research design
RELIABILITY	<ul style="list-style-type: none">• use case study protocol• develop case study database	Data collection Data collection

Source: (Yin 2009 p. 41)

Construct validity

Construct validity confirms the fit between the results obtained from the use of the measure and the theories that the study is based on (Cavana et al. 2001). To increase construct validity in case studies, it is recommended that multiple data sources are included in case studies (Riege 2003; Tellis 1997; Yin 2009). Different sources of evidence permit the researcher to examine a broader range of behavioural and historical issues and allows for triangulation of data to substantiate case study findings (Yin 2009). A key approach in qualitative studies is comparison where data are compared with other data, with existing theory, and also with previous results from research (Gummesson 2005, p.312). Triangulation is also applied to reduce the likelihood of misinterpretation through incorporating multiple perceptions to clarify meaning (Stake 2000) and this is applicable in the interpretation of case study results. By applying multiple measures of the same issue, construct validity is increased. In this study the strategy documents and other information included in the case study database

(see Appendix A) serve to triangulate the information obtained from the interviews.

Another method of increasing construct validity that also increases reliability is the maintenance of a 'chain of evidence' (Yin 2009, p. 123). A chain of evidence represents the way in which evidence is collected in a train of events from the initial research questions to the final case study conclusions. Gummesson (2005 p. 312) described this as 'transparency'; the case study must be presented in such a way that the reader can follow the thoughts and actions of the researcher. The aim of maintaining a chain of evidence is to enable tracing the evidentiary process through the steps of case study, case study protocol (see Appendix B), case study database (see Appendix A) and case study report (see Chapter 6). Clear cross referencing between the procedures and the resulting evidence increases construct validity, and also reliability.

In this study, multiple data sources include interview data (including qualitative data from responses from semi-structured interview questions and quantitative data from survey-type interview questions) and documentation from each major case (Toowoomba Regional Council, Dalby Regional Council, Lockyer Valley Regional Council). The documentation about the regional councils includes general information from their websites and strategic visions and corporate plans. These documents are included in the Case Study Data Base, Appendix A (A1 for Toowoomba Regional Council, A2 for Dalby Regional Council and A3 for Lockyer Valley Regional Council). In this study, with regard to the chain of evidence, the links between the case study questions, the case study protocols and case study evidence are explained throughout this thesis and contribute to increasing the construct validity of the study.

Internal Validity

Internal validity refers to cause-and-effect results in experimental designs where validity is determined by evaluating if the treatment is solely responsible for changes in the dependent variable (Cavana et al. 2001; Zikmund 2003). Where qualitative research aims at identifying themes and constructs related to a phenomenon, quantitative studies aim at explaining the cause-and-effect

relationship between variables and, therefore, internal validity is more appropriate in quantitative studies (Zikmund 2003). Although case study designs are different from experimental designs and normally do not involve cause-and-effect relationships, internal validity needs to be considered to ensure that phenomena are established in a credible way (Healy & Perry 2000). To strengthen internal validity, Yin (2009) suggests specific tactics during data analysis. For explanatory case studies, pattern matching, logic models and explanation building as analytical techniques are recommended. For experiments and quasi-experiments, time-series analysis is appropriate. For multiple cases, Yin recommended cross-case analysis (Yin 2009). The cross-case analysis method treats each individual as a separate study and findings are aggregated across a series of individual studies.

In this study, cross-case analysis plays an important role in data analysis. In order to address the research questions that are focused on shared mental models of strategic thinking, individual perceptions are extracted and aggregated to identify patterns of similarities incorporated in shared mental models.

External validity

External validity addresses the generalisability of results to the external environment (Cavana et al. 2001; Zikmund 2003). Where a survey sample reflects results that are generalised to a larger universe, case study results display a connection between findings and a specific theory (Yin 2009). Survey research depends on statistical generalisation and case study research depends on analytical generalisation and this means that case study results generalises to a broader theory, rather than a larger universe (Riege 2003). Generalisation requires replications and can only occur if the specific theory is tested in other similar contexts and results are compared (Yin 2009). Replication logic is not similar to sampling logic; sampling logic aims to select respondents who represent the larger universe and their results reflect the results of the universe. Replication logic relates to the research design and requires cases to be selected that will produce similar results through a literal replication process, or cases that are expected to produce contrasting results because of specific reasons to provide compelling support for the initial set of propositions (Yin 2009). The aim of case

study research is to explore and understand the initial theoretical constructs and their relations (Riege 2003). Yin (2009) recommends the application of replication logic in multiple-case studies to strengthen external validity.

In this study, multiple-case studies are selected and the selection is based on replication logic where all of the major cases are regional councils within a specific geographical area and all councils are newly-created entities after amalgamation of several shire councils. The units of analysis, the strategy groups within the councils, are also selected based on replication logic. In each council, three strategy groups are identified and are related to three different organisational levels within the councils. Detail about the selection of cases based on replication logic was provided in the previous section where the case study selection criteria were addressed.

Reliability

Reliability addresses internal consistency and stability over time and indicates the degree to which measures are free from error (Cavana et al. 2001; Zikmund 2003). In case study research it is suggested that if the same study, applying the same methodology, is conducted on the same case/s the same findings and conclusions should be achieved (Yin 2009). Although methodology can be replicated and interview techniques and methods can remain constant, Riege (2003) asserts that results may be different from a previous study because responses from interviewees are not guaranteed to be the same as in previous interviews. Riege (2003) suggests that the differences must be explored as it may provide valuable new sources of information to the study. To increase the reliability of case studies, Yin (2009) recommends that the case study protocol be used in data collection and that researchers should develop a case study database to ensure that the research is suitably documented to allow for replication of the study. A case study protocol is essential in multiple-case studies and presents a systematic approach to describing data collection from a single case and includes the following main areas:

- An overview of the case study project
- Field procedures
- Case study questions

-
- A guide for the case study report (Yin 2009, p. 81).

Apart from the final case study report, case studies must also include documentary evidence in the form of a case study database to allow other researchers to review the evidence directly. In this study, a case study database containing details about the major cases (including documentation related to the cases) was developed, and is attached as Appendix A.

Other quality criteria applicable for realism research

From the realism perspective, Healy and Perry (2000) present six quality criteria for case study research: ontological appropriateness, contingent validity, multiple perceptions of participants, methodological trustworthiness, analytic generalisation and construct validity. Although these criteria represent the design tests in qualitative research and each of the theoretical paradigms, Riege (2003) questions their approach in explaining how validity and reliability in case study research can be established. The quality criteria presented by Healy and Perry (2000) appear to include the main validity and reliability issues with regard to case study research and will not be further detailed.

This section provided the theoretical background on issues such as the scientific paradigm and the research approach. In the following section, these issues are applied in more detail to the study and the research design for the study is presented.

3.4 Research design for this study

As discussed previously, the realism paradigm is appropriate for this study. The study applied induction (theory building) and deduction (theory testing) because theories about mental models, strategic thinking and strategy development provide the foundation of the study. Based on the theory principles discussed in the previous sections, the research design for this study is a multiple case design. The focus of the study is on Australian local government regional councils in South East Queensland, as explained in Section 2.7. Nine strategy groups are selected as cases from Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council. The criteria for selecting these cases were

discussed in Section 3.3.3. The units of analysis in each case are the strategy groups; the groups tasked with developing organisational strategy. The strategy groups include the mayor and councillor strategy groups, the executive strategy groups and the operational level strategy groups. The total number of case study participants is thirty-eight.

Evidence for this study was derived through a mix of qualitative and quantitative data and multiple data collection methods were applied. The main source of data collection is the interview protocol and this data were supported by documentation as a secondary data source. The interview protocol included three types of interviews. First, in-depth interviews with the mayor and chief executive officer of one of the cases aimed at collecting data to develop the semi-structured interviews. The second type of interview included in this study was semi-structured interviews, extracting the qualitative data for the study. The third type of interview, the survey type interview, was included as a section of the semi-structured interviews to extract quantitative data for the survey. After collecting the data, the data were processed and analysed through conducting qualitative content analysis (see Section 3.8.1) and applying Leximancer data analysis (see Section 3.8.2). The secondary source of data collection pertains to documentation about the regional councils and these documents were obtained through the websites of the councils (see Section 3.8.3).

After presenting the research design for this study, it is now appropriate to discuss the research process followed in this study.

3.5 Research process

The business research process for qualitative data analysis includes several steps that guide the methodology in research. The model for the business research process, as presented by Cavana et al. (2001), is depicted in Figure 3.2. The research process applied in this study is based on this model, although there are some minor differences that are indicated in the discussion below.

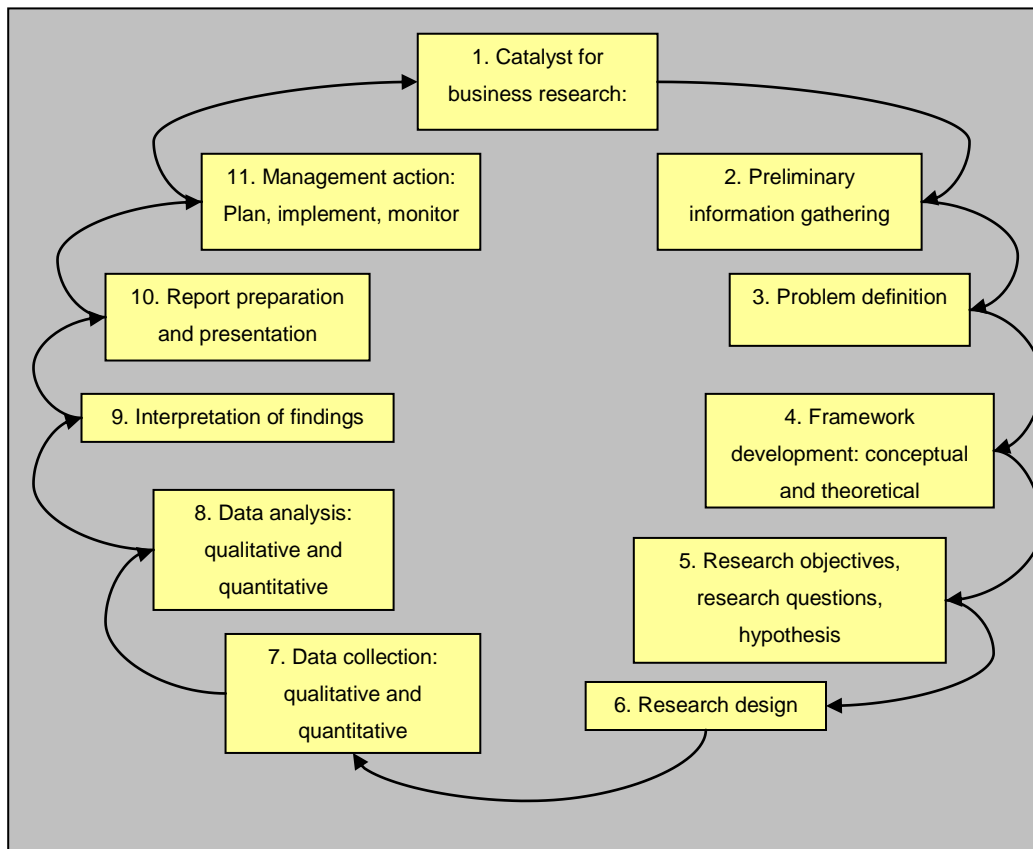
The ideas for this study originated from the researcher's involvement in teaching strategic management courses at the University of Southern Queensland. While

studying and teaching strategic management, the researcher became aware of certain gaps in the literature relating to strategy development, strategic thinking and mental models. These gaps are discussed in Chapter 2 and provided the foundation for the research questions. In comparison to Cavana et al.'s (2001) model, this initial phase of identifying a research opportunity coincides with Cavana's et al.'s step 1, the 'Catalyst for business research: opportunity, problem' in Figure 3.2.

Following the identification of the problem statement, preliminary information gathering through literature reviews was executed and this is in agreement with the second step in Figure 3.2. After studying the preliminary literature, the problem statement was refined. The problem statement was converted to a research objective and research questions were derived from this. The conceptual framework was developed based on the literature review, and the gaps identified in the literature, problem statement, research objective and research questions were presented in Section 2.8.

In contrast to the sequence of steps four and five in the figure, the researcher found it necessary to first develop research objectives and questions (step five in the figure) before developing the conceptual framework (step four in the figure). The issues and gaps in the literature gave rise to the research objective and questions and, from this, the conceptual framework was developed. The next step, in line with step six in Figure 3.2, included the research design that was presented in Section 3.4. The next step in the study was data collection and links to step seven in Figure 3.2. After the data were collected, in line with step eight in Figure 3.2, the data analysis step followed and included the qualitative content analysis of documentation and the interview data; and the application of Leximancer. Details about the data analysis methods are presented in Section 3.8. The results of the study are presented in Chapters 4 and 5.

Figure 3.2 The business research process: qualitative data analysis and interpretation



Source: Adapted from Cavana et al. (2001 p.169)

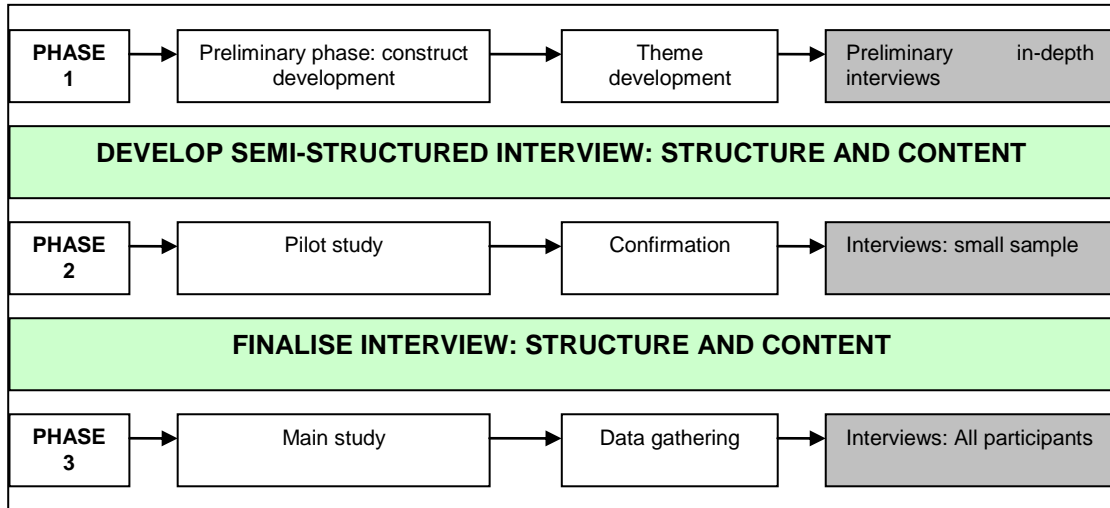
Following step nine in Figure 3.2, the findings were interpreted and the interpretation of the results of the study is provided in Chapter 6. The reporting step (step ten in Figure 3.2) was dually applied in this study. First, the overall report of the study was presented in this thesis. Secondly, reports of the findings in each regional council (the cases) were created and presented to the mayors of regional councils individually. These reports included recommendations for improvement that may assist regional councils in improving the outcomes of their strategy development. The final step in Figure 3.2, step eleven, entailed the implementation of the recommendations that regional councils received from this study. Although it was strongly advised that regional Councils consider implementing those recommendations, the researcher had no control over the implementation of the recommendations.

Following from the overall business research process, more detail about the procedures of data collection is now presented.

3.6 Data collection procedures

Figure 3.3 provides an overview of the data collection process that was followed in this research. Three phases were included: the preliminary phase, the pilot study and the main study. The development of the semi-structured interview was integrated in these phases because the knowledge of ‘experts’ in local government was required and this information was collected during the first two phases. Yin (2009 p. 107) referred to these experts as ‘key informants’ and explained their input as critical to the success of a case study as they provide the researcher with insights into the matter, and can also initiate access to supporting or contradictory sources of evidence. Input from key informants was gathered in the first two phases by means of in-depth interviews with top level managers during phase one, and semi-structured interviews with a small number of Councillors during phase two to confirm the interview items.

Figure 3.3 Overview of the data gathering process



Source: Developed for this study

More detail about the data gathering process is presented in the flow diagram of Figure 3.4. This diagram indicates the phases in data gathering, as well as details about each phase. The flow diagram indicates that the theory for this study originated from the literature where gaps in the literature were identified, thus providing the justification for the study. The two issues under investigation are

the task mental models of strategic thinking and the group-functioning mental models.

Phase 1

The aim of phase 1 was to confirm the elements of strategic thinking for both task mental models and group-functioning mental models. The method incorporated in this phase was in-depth interviews with the mayor and chief executive officer of one of the regional councils. Information about their perceptions of elements of strategic thinking within the context of local government was obtained to develop the semi-structured interview.

As recommended by Perry (1998), these interviews commenced with induction and the analysis of this data was deductive when the prior theory about the issue was incorporated in the analysis. Following this approach, the in-depth interviews commenced with: ‘What is your experience with strategic thinking in local government?’ This was followed by questions more specifically related to the elements of strategic thinking. The data about the elements of strategic thinking from the perspectives of local government employees were then analysed and integrated with the proposed set of elements of strategic thinking as presented in Section 2.3.2.

Phase 2

The aim of this phase was three-fold. First, the aim was to validate the elements of task and group-functioning mental models derived from the first phase and to develop interview questions to investigate the elements. Task mental model questions were based on a scenario question that addresses strategic actions related to the scenario. Interview questions for group-functioning mental models were developed from the elements of group-functioning mental models, as discussed in Section 2.6.2.

Secondly, the aim was to gather information for development of the scenario question included in the semi-structured interview. A scenario reflecting a critical incident, such as a national disaster, was developed and actions related to the elements of strategic thinking as operationalised task work activities were

constructed. The input from the mayor and chief executive officer was required to provide the perspectives of local government officers regarding what appropriate strategic actions were needed to address the scenario. This information was incorporated into the development of items for the semi-structured interview questions related to shared task mental models. More detail about the interview questions is presented in Section 3.7. The final aim in this phase was to refine the content of the interview questions and, therefore, a pilot study was included.

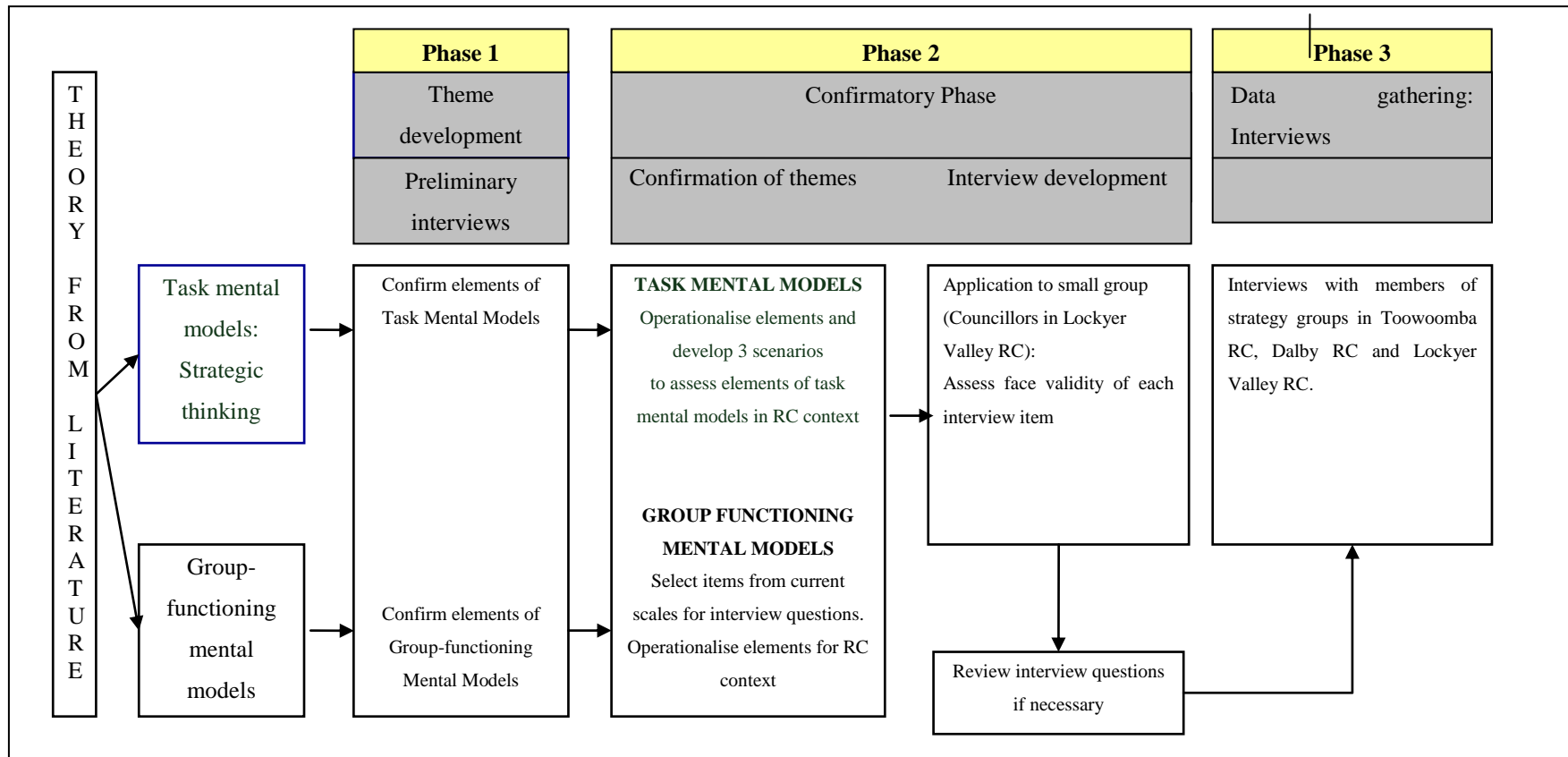
Pilot study

A pilot study is necessary to refine the data collection plans with regard to the content of the data and the procedures to be followed. A pilot study need not follow the criteria for case selection and, in general, convenience, access and geographical proximity can guide the selection of the pilot case (Yin 2009 p. 93). The pilot case study for the proposed study is a small group of senior employees of the Lockyer Valley Regional Council. This group was selected based on convenience and geographical proximity. Interviews with two respondents using the initial interview questions identified interview questions that needed further development. For instance, one of the questions included in the initial interview questions, derived from the Group Environment Questionnaire (Carron, Widmeyer & Brawley 1985), and aimed at assessing personal involvement in the group was: ‘Are you or could you become good friends with your fellow group members?’. The answer received from all respondents was: ‘yes, with some and no, with others’. This question did not provide any information about respondents’ group interaction and was deleted from the set of interview questions. Other minor adjustments and improvements to the initial questions were also made and a final set of interview questions was prepared for conducting the main study.

Phase 3

The aim of this phase was to conduct interviews with members of strategy groups as identified in Section 3.4. By accessing the websites of Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Councils, contact details of the mayors of these councils were obtained.

Figure 3.4 Flow diagram of data gathering process



Source: Developed for this study

The researcher sent e-mails to the mayors outlining the scope of the study and inviting them and their councils to participate in the study. A copy of this email is attached as Appendix D.

Positive responses from three of the regional councils were received and the researcher made appointments with each of the mayors to discuss details of the study and to conduct the interviews. After receiving authorisation from the mayors, the councillors, chief executive officers and directors of departments within those regional councils were contacted in the same manner. Through the directors of departments, other employees involved in strategic planning were identified and contacted. One hour appointments were scheduled with all participants. All participants were provided with an 'Informed Consent' letter prior to the interview for their signature, with participants consenting to participate in the research project with the knowledge that they could cease participation at any time for any reason and withdraw any data previously supplied (see Appendix E).

The interviews with respondents were recorded and data obtained from the interviews were transcribed to prepare for use in the content analysis. Data recording is viewed as essential for this study because the actual words and sentences of respondents are required for the content analysis method. Patton (1990) stated that if the interviewer fails to capture the actual words of the interviewee, the interview comes to naught. An audio recorder was used in this study and the permission of each respondent was sought before using the equipment. Full transcriptions of interview data are viewed as the most desirable data to obtain (Patton 1990). After completion of the data gathering phase in councils, a letter was sent to the respective mayors thanking them for their participation (see Appendix F).

Phase 4

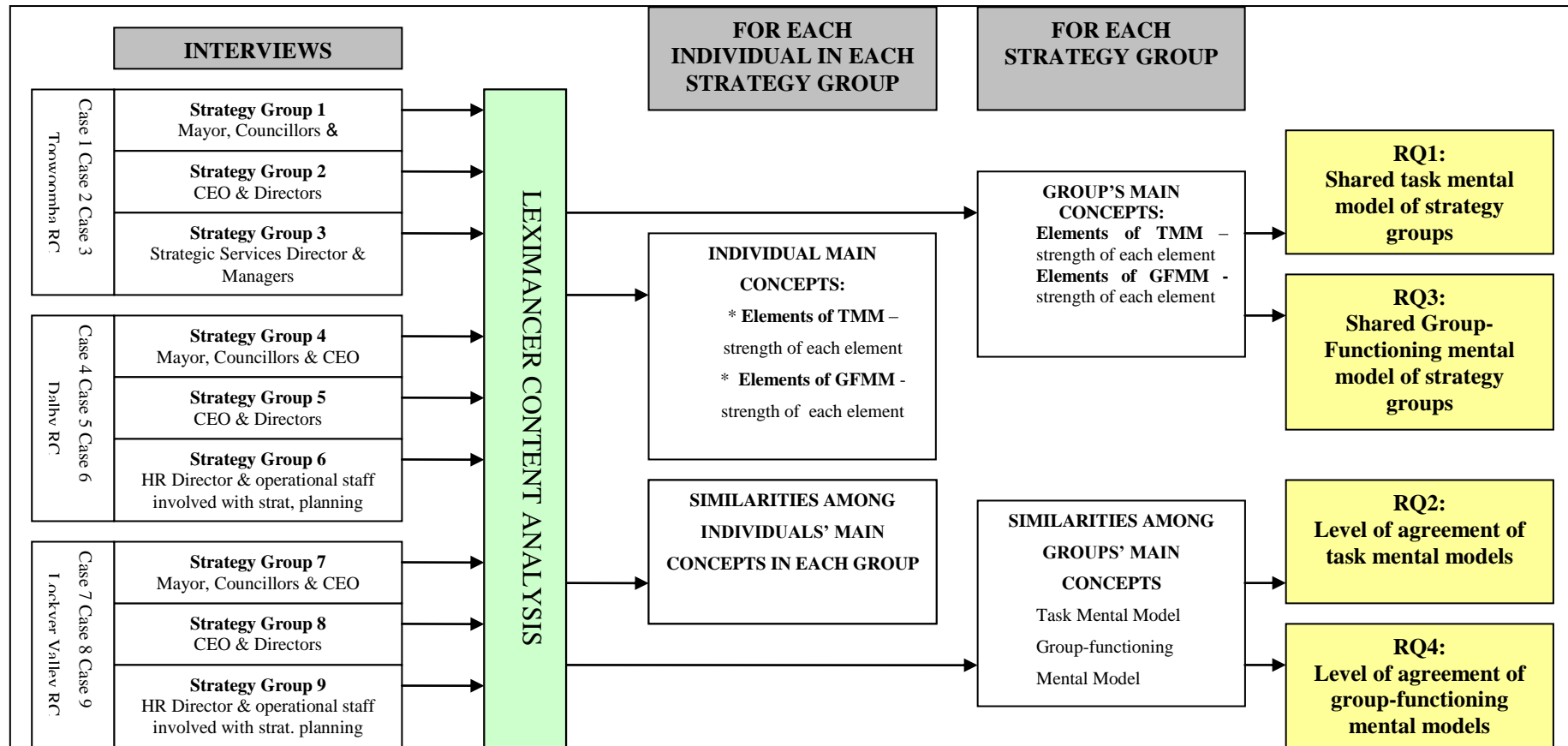
Phase 4 entails the data analysis phase. Figure 3.5 presents a plan of how the analysis was conducted and it shows how the concepts are linked to the research questions. As mentioned previously, the interviews were recorded and transcribed to provide written documents for content analysis. First, the

individual elements of task mental models and group-functioning mental models were developed. Then similarities in individuals' sets of task and group-functioning elements were investigated. Next, the results of the group were determined by combining the results of individuals in each group, including task and group-functioning elements. This step provided results for each strategy group regarding task mental models and group-functioning mental models and is linked to research questions one and three. This was followed by analysing similarities between the different groups (within specific levels and across different levels) with regard to task mental models and group-functioning mental models. This part of the analysis was linked to research questions two and four. Note that the results of the three main cases (Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council) are not compared to each other—as a comparison between councils is beyond the scope of the study.

To support the qualitative results, the interview was designed to include a section along the lines of a formal survey (the scenario questions) to provide quantitative data about task mental models. This produced supporting quantitative data as part of the case study evidence. The results of the quantitative data were triangulated with the qualitative data to produce the overall results.

This section outlined the data gathering process and presented a plan of how the data were analysed, linked to the research questions. The main instrument used for data collection is the interview and in the next section the interview instrument design is addressed and details about the generation of the interview questions are presented.

Figure 3.5 Data analysis plan



Source: Developed for this research

3.7 Interview instrument design

The interview instrument allows the extraction of data along the lines of inquiry and provides more than structured surveys do, as explanations of the issues are also obtained through the conversational approach (Yin 2009). In semi-structured interviews it is important to develop interview questions according to the research issues to facilitate data analysis. In this regard, Table 3.2 shows how the interview questions are related to the research issues.

The overall aim of the interview instrument was to elicit the perceptions of individuals regarding their mental models of strategic thinking, including the task mental models and the group-functioning mental models. The interview instrument provided information on individual level and, for this study; the results of individuals were accumulated per group to provide data for each of the nine cases. The focus of all four research questions was on shared mental models: questions one and three related to the content of shared task and shared group-functioning mental models respectively. Questions two and four focused on the levels of agreement of the task and group-functioning mental models respectively. Levels of agreement on these mental models were investigated within groups and among groups across different levels. To elicit mental models of interviewees, it was important to ensure that truly open-ended questions were included in the interview to minimise the possibility of receiving predetermined responses and to decrease ‘social desirable’ answers. True open-ended questions included formats such as ‘How do you feel about...’, ‘What is your opinion about...’ or ‘What do you think about...’ (Patton 1990 p. 296) and the questions developed for this study were based on the true open-ended question format. Literature on interviewing techniques that offers guidelines for interviewing was studied before conducting the interviews. This improved the researcher’s skills in conducting the interviews and included techniques such as to ‘listen more, talk less’; ‘ask to hear more about a subject’; ‘follow up on what the participant says’; and to ‘avoid leading questions’ (Seidman 1998 p. 63-70). The interview instrument for this study included conversational questions related to the line of enquiry and also a section with survey-type questions. The aim of survey-type

questions is to produce quantitative data as part of the case study evidence (Yin 2009).

The scenario exercise in the interview (see Part 1 of the interview, Appendix C) is based on research conducted by Webber et al. (2000). To assess shared mental models, Webber et al. developed a methodology that can be tailored to the group and task of interest. The methodology includes the development of scenarios based on critical incidents and is applied to assess the contents of strategic team mental models. It focuses on behaviours that discriminate between effective and ineffective strategies.

Webber et al. (2000) developed this method because measures of strategic mental models are not well established and problems were encountered with these measures that are related to confusing instruments, administration procedures that are difficult to manage and difficulties in applying questionnaires effectively (Klimoski & Mohammed 1994; Mohammed et al. 2000). Researchers in this field expressed the need for faster, more user-friendly and valid measures (Klimoski & Mohammed 1994; Kraiger & Wenzel 1997). The scenario method is based on traditional performance appraisal practices where a Likert-type scale is used to assess specific behaviours (Fleenor, Fleenor & Grossnickle 1996).

Webber et al.'s (2000) model builds on the work of Shlechter, Zaccaro and Burke (1998) who developed a similar method for measuring team mental models in a military setting (Webber et al. 2000, p. 310). A similar method was applied by Eby, Meade, Parisi and Douthitt (1999) to investigate teamwork expectations. Webber et al.'s model developed these approaches further by including the examination of reliability, accuracy and agreement (Webber et al. 2000).

In a fifteen year review of the mental model construct, Mohammed, Ferzandi and Hamilton (2010) reviewed the different approaches researchers applied to evaluate team mental models. The scenario method as developed by Webber et al. (2000) is viewed in this review as an effective tool to elicit team mental models (Mohammed, Ferzandi & Hamilton 2010 p. 10). After reviewing different methods applied to assess mental models, Mohammed et al. concluded

that one perfect method of assessing mental models is still to be found and suggests that different methods should be applied and triangulated (Mohammed, Ferzandi & Hamilton 2010). This suggestion is applied in this study where various methods were applied in eliciting mental models of strategic thinking and triangulation was incorporated.

This study follows Webber et al.'s (2000) approach in assessing shared task mental models of strategic thinking. The scenario questions in this study related to a scenario developed about a disaster situation that might occur in the region. Based on the scenario, a set of actions was provided to interviewees. These actions included strategic actions where strategic thinking was required, but also operational actions that were not associated with strategic thinking. The strategic actions were correlated to the four elements of strategic thinking and presented as operational and observable actions. Venkatraman and Grant (1989) propose that theory constructs in strategy research can only be investigated if they are converted to observable indicators. Interviewees were required to consider each action and classify it as either 'High priority', related to strategic actions; 'Medium priority', related to partly strategic actions; or 'Low priority', related to operational actions. After considering the whole set of actions, the interviewees were asked to rank the actions that they classified as 'High priority' in order of importance with the most important action as '1', second most important as '2' until all the high priority actions were rank ordered. The aim of the rank ordering was to obtain respondents' perceptions about the importance of the four strategic thinking elements. It was expected that all actions related to the four strategic thinking elements would be classified as high priority and, to distinguish between how the four elements were perceived by interviewees, the rank ordering provided detail about the importance of elements in relation to each other. This section was linked to the first research question about the content of the shared task mental model.

Table 3.3 The link between the interview questions and research questions

Interview questions	Aim	Research questions
<p>Start-up questions:</p> <p>Identify strategy groups in your Council, and are you part of a strategy development work group?</p> <p>Do you think that the strategy groups are structured effectively or can it be structured in a better way? How?</p>	<p>To engage interviewees in the topic.</p> <p>To identify strategy groups in the Council, to link the interviewee to a specific group.</p> <p>To gather data about individual perceptions of the functioning of the groups and to allow participants to share information about the groups that they deem important.</p>	<p>This provided general understanding of the overall research topic and served as background to the research questions.</p>
<p>Strategic thinking questions:</p> <p>What is your personal understanding of strategic thinking?</p> <p>Within the context of local government and applicable legislation, how important and/or applicable is strategic thinking for your RC?</p> <p>In your opinion, where does strategic thinking fit within the strategy development process?</p> <p>Do you consider strategic thinking as a ‘one-off’ event or as a continuous process? Why?</p> <p>In your current position in the RC, in what way does your role require: a) strategic thinking to develop options for the long-term strategy of the RC and b) operational thinking to plan how to accomplish the organisational strategy?</p>	<p>To elicit individuals understanding of strategic thinking.</p> <p>To obtain individuals’ views about how strategic thinking is linked to legislation and how important they view strategic thinking.</p> <p>To obtain insight into individual understanding of the strategy development process and the role of strategic thinking within the process.</p> <p>To obtain insight into individual understanding of strategic thinking .</p> <p>To obtain information about individuals’ strategic roles versus their operational roles.</p>	<p>Addressing research question 1:</p> <p>What is the shared task mental model of strategic thinking of strategy groups?</p>
<p>Scenario questions:</p> <p>What strategic actions can your RC take in developing long-term flood mitigation measures?</p>	<p>To provide quantitative data for each individual regarding the four elements of the task of strategic thinking.</p>	<p>Addressing research question 1:</p> <p>What is the shared task mental model of strategic thinking of strategy groups?</p>

<p>Group-functioning mental models:</p> <ul style="list-style-type: none"> • How do you personally view the other members in your strategy group's <u>knowledge</u> about developing organisational strategy? • What do you think about other group members' <u>skills</u> to develop organisational strategy? • How do you view their <u>attitudes</u> toward developing organisational strategy? • To what degree do you view your group as united in trying to reach your goals? • How do group members communicate about each other's responsibilities in the group? • Considering all the work groups that you are participating in, how important is this particular work group to you? • Who takes responsibility for error or poor performance in your group? • Who do you see as the natural leader of this group? • Is there a specific group member who is usually bringing new and creative ideas into the group? How many group members? • Is there a specific group member who is usually playing 'devil's advocate' when new ideas are being discussed? How do you feel about that? • How would you personally rate the performance and success of your strategy group? Why? • How confident is your group about achieving its goals? 	<p>To elicit individual perceptions about other strategy group members' knowledge, skills and attitudes.</p> <p>To elicit individual perceptions about how the group interacts.</p> <p>To elicit individual perceptions about the roles and responsibilities of other group members.</p> <p>To illicit information about possible groupthink/groupshift.</p> <p>To elicit individual perceptions about how the group perceives team interaction and the knowledge and skills available in the group.</p>	<p>Addressing research question 3:</p> <p>What is the shared group-functioning mental model of strategic thinking?</p>
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<p>Boundary spanning:</p> <ul style="list-style-type: none"> • How does boundary spanning apply to your strategy group? 	<p>To elicit individual perceptions about boundary spanning</p>	<p>Addressing research question 3:</p> <p>What is the shared group-functioning mental model of strategic thinking?</p>
<p>Probing questions:</p> <p>In your opinion, what is the balance between strategic thinking and operational requirements in the role requirements of (a) the group of Mayor and Councillors, (b) the Executive Team – CEO and directors, and (c) other staff members involved with strategic planning. Please indicate your perceptions about the current balance and then also what you think it should be.</p> <p>In what ways are strategic ideas and options communicated and shared among the different strategy groups?</p> <p>Do you think that there are high levels of agreement in the way that your strategy group members view the long-term direction of your RC?</p>	<p>To obtain individual perceptions about the difference between strategic thinking and operational thinking as it applies to the different level groups. Perceptions about how the individuals view the current situation provide information the current state of affairs – according to the views of individuals. This also includes perceptions about the roles and responsibilities of group members. Perceptions about how it should be provide insight into how individuals perceive the difference between strategic and operational thinking across organisational levels.</p> <p>To provide insight about communication strategies between different groups and this also link to boundary spanning issues.</p> <p>To gain understanding of individual perceptions about agreement within groups – this provide triangulation data about levels of agreement that are obtained through Leximancer analysis.</p>	<p>Addressing research question 3:</p> <p>What is the shared group-functioning mental model of strategic thinking?</p> <p>Addressing research question 2 and 4:</p> <p>What is the level of agreement of the task mental models of strategic thinking among strategy groups?</p> <p>What is the shared group-functioning mental model of strategic thinking?</p>

Source: Developed for this study

The final part of the interview included ‘probing questions’ and the aim of this section was to understand how respondents viewed the current balance between strategic thinking and operational thinking on each level of strategy groups. It also included a question about ‘how it should be’; to extract the perceptions of respondents about how the balance between strategic thinking and operational thinking should be on the different levels. After the set of structured interview questions, the final question invited respondents to add information that they deemed important, or to ask the researcher relevant questions.

After conducting and transcribing the interviews, the content analysis step followed. More detail about the data analysis method is provided in the next section.

3.8 Data analysis method

As explained in Section 3.4, multiple data collection methods were utilised and triangulation of the results was applied to provide stronger validation of the concepts in this study. The data analysis method included qualitative content analysis, application of electronic text analysis through Leximancer, and documentary analysis. Results obtained through these methods were triangulated to confirm the concepts and relationships related to shared mental models of strategic thinking. This section commences with discussions about qualitative content analysis, Leximancer analysis and documentary analysis.

3.8.1 Qualitative content analysis

In Chapter 2, qualitative content analysis was explained as a method of extracting concepts and relationships that allows the researcher to examine meanings, themes and patterns in textual documents (Hsieh & Shannon 2005). Content analysis includes both qualitative and quantitative approaches, and Weber (1990) considered a combination of approaches as the best content analysis methodology. One approach to view *quantitative* content analysis is that it is essentially deductive and useful in testing hypotheses and questions from previous research studies (Krippendorff 2004). In contrast, *qualitative* content analysis extends the quantitative approach of counting words in categories that represents similar meanings to include linkages to contextual issues (Weber 1990). *Qualitative* content analysis is essentially inductive and focuses on

examining topics in textual documents to generate theories and descriptions of typologies (Hsieh & Shannon 2005). Hsieh and Shannon (2005 p. 1278) identify three distinct approaches to qualitative content analysis, namely, conventional, directed and summative. Conventional content analysis follows an inductive reasoning approach and aims at deriving data from respondents without imposing pre-identified categories. Directed content analysis follows a more structured approach towards categorisation. Directed content commences with predetermined categories derived from theory (deductive reasoning). The data derived from respondents provides information about the theory categories and identifies new categories that can be used to refine, extend and enrich the theory (inductive reasoning). The main value of this approach is that it can support and extend existing theory. The third approach to qualitative content analysis, according to Hsieh and Shannon (2005), is the summative approach and resembles a quantitative approach in the first stage where quantification is could be applied to explore the usage of concepts through calculating the frequency counts of each concept. This is followed by latent content analysis through inductive reasoning, where the content is interpreted to discover underlying meanings of the words (Hsieh & Shannon 2005).

In this study, both induction and deduction are applied through directed content analysis. First, through deductive reasoning, concepts and themes related to mental models and strategic thinking were derived from the literature (see Chapter 2). These concepts and themes formed the foundation for developing interview questions. The interview data were then analysed through the application of inductive reasoning where further themes and categories related to the specific regional council context were identified. The findings from this analysis are presented in Section 4.4, Chapter 4.

3.8.2 Leximancer

Leximancer is a text analytic tool that performs automatic content analysis from textual documents and the extracted data are visually displayed as maps (*Leximancer Manual Version 3.07* 2008; Smith & Humphreys 2006). Leximancer is a software program developed at the Key Centre for Human Factors and Applied Cognitive Psychology at the University of Queensland and

is used for systematic content analysis. This software program analyses the content of the textual documents and identifies concepts and their interrelationships, which are then presented as conceptual maps. This provides a ‘birds eye view’ of the material (*Leximancer Manual Version 3.07* 2008). Leximancer not only identifies the main concepts in textual documents, but also indicates the strengths of each concept by considering the number of co-occurrence with other concepts and reveals the similarities in the contexts of concepts (Bradmore 2007). An important feature of Leximancer is its ability to determine if there are significant differences between the textual content of various sources (*Leximancer Manual Version 3.07* 2008). This is particularly useful in this study where the levels of agreement of mental models between strategy groups were investigated.

Smith and Humphreys (2006) posit that one of the major goals of Leximancer is to make the researcher aware of the overall context and significance of concepts and to inform the researcher of new concepts that may not be included in prior theory, or evidence of a phenomenon. This aspect relates to theory building where the evidence derived from a particular study can add to prior theory. From this point of view, it can be argued that Leximancer accommodates both induction and deduction in identifying concepts and relationships. It is valid in the inductive approach where concepts and relationships that have not been previously included in the theory are identified; and also valid in the deductive approach where concepts and relationships included in current theory are analysed.

In Chapter 2, Leximancer is compared to other manual techniques and computer software tools for determining mental models (see Section 2.5.4). Because of Leximancer’s advantages and unique features related to working with large sets of textual documents, this tool was applied to elicit mental models in this study.

Phases of content analysis using Leximancer

Leximancer includes seven phases in processing textual documentation (*Leximancer Manual Version 3.07* 2008 p. 18). First, the data are selected by selecting data files or folders from a computer containing the text data. The second phase is the text pre-processing phase where raw documents are

converted to an appropriate format. During the third phase, the major concepts are automatically identified from the text and are stored as key words. In the next processing phase, concept editing occurs. During this phase the researcher has the option of sifting through the identified concepts, deleting concepts that are not of interest, or adding additional concepts or merging similar concepts. The fifth phase entails thesaurus learning where words travelling together with concepts are clustered around the main concepts. The next phase, concept location, is similar to the process of manual coding in content analysis where each block of text is tagged with the names of the concepts it contains. The final phase entails the mapping of the concepts and variables where the relationships between constructs are established and displayed (*Leximancer Manual Version 3.07 2008*).

Reliability

In considering the application of a tool or technique, it is important to investigate the reliability of those instruments or methods. Reliability in content analysis is focused on stability in the coding process where the coder consistently codes and recodes the same information in the same way over time. Reliability is related to reproducibility, referring to the consistency in coding of several coders (*Leximancer Manual Version 3.07 2008*). Reproducibility is also described as inter-coder reliability and refers to measurement consistency between two or more coders (Lombard, Snyder-Duch & Bracken 2008). Because manual coding is replaced by automatic coding—and coding is executed electronically without the involvement of coders—both stability and reproducibility is generated at a high level that may increase the reliability of this tool because the possible errors associated with manual coding are excluded (*Leximancer Manual Version 3.07 2008*).

Application of Leximancer in this study

As explained previously, Leximancer analyses textual documents and, therefore, the interviews were transcribed and stored as electronic files in a format that is compatible with the program. Although Leximancer can run all relevant files at once and create an overall concept map of all the data included in the interviews,

this study required a more structured approach to address specific areas in the study. The interview questions were designed to extract data from participants related to specific research questions (see Table 3.2). The data files for analysis of specific issues were selected according to the interview questions linked to a specific research question. The findings of this analysis are presented in Section 5.4, Chapter 5.

3.8.3 Documentary analysis

As explained in Section 3.3.3, documentation is an important data source in case study research because it substantiates and extends evidence from other sources (Yin 2009). Documentary analysis represents the third source of data analysis for this study. It entailed the systematic analysis of documents relevant to the study of each of the three major cases. These documents included the missions, visions and corporate plans of Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council. The corporate plans were analysed according to the elements of strategic thinking. It was expected that the elements of strategic thinking were epitomized in these strategy documents. The findings from this analysis are presented in Section 4.5, Chapter 4.

3.8.4 Triangulation

Yin (2009) states that the opportunity to collect different sources of data is a major strength of case study data collection. Through the interpretation and comparison of different methods of data analysis, methodological triangulation is applied, and results in a more comprehensive picture of the phenomenon under investigation (Denzin 1989). Triangulated findings can be convergent, complementary or dissonant (Flick 2006). When results are similar, it supports the validity of the findings. Complementary findings require a combination of findings from the different sources to provide the true results, and dissonant findings present results that are incompatible and challenge the expectations of the researcher (Sands & Roer-Strier 2006).

In this study, the findings from different methods of data analysis, namely, qualitative content analysis, Leximancer analysis and documentary analysis, were compared to provide a complete explanation of mental models of strategic

thinking. The findings from the triangulation are presented in Section 5.5, Chapter 5.

3.9 Limitations of the research methods

As explained earlier (see Section 3.3.4), generalisability of results is an issue related to external and internal validity (Cavana et al. 2001; Zikmund 2003). One of the major criticisms of qualitative research is the small samples that make generalisability of conclusions improper (Myers 2000). In this regard, it may be argued that the number of cases in this study's may have a negative influence on the generalisability of results and can be viewed as a limitation to the study. On the other hand, if Riege's (2003) and Yin's (2009) interpretation of generalisability in case studies is followed (see Section 3.3.4), the focus is on analytical generalisation rather than statistical generalisation, and replication logic rather than sampling logic (Sobh & Perry 2006). This means that generalisability depends on how well the case study results generalises to a broader theory or population and on how well the research design can be replicated. This study's design is based on principles of analytical generalisation and replication logic. A combination of inductive and deductive approaches was followed to advance strategy development theory by including the role of mental models of strategic thinking and to apply replication logic in selecting multiple-case studies to support external validity. With regard to improving internal validity, Yin (2009) and Riege (2003) propose application of cross-case analysis. Cross-case analysis was applied in this study.

Following from the previous point, a limitation of case study research is the lack of sufficient replication of studies. Parkhe (1993) believes the reason for lack of replications is related to funding issues where most funding for social sciences research projects are short-term and only allows for single studies. There are also the issues of personal time of the interviewer, costs involved in travelling and the availability of interviewees (Cavana et al. 2001)—which may have a negative influence on replication of studies. When replication is connected to reliability, the aim is to provide sufficient documentation to allow other researchers to conduct the same study on the same respondents and to arrive at the same

findings (Yin 2009). The limitation of case study research in this regard is that, unless detailed notes about every step and procedure is available to the next researcher, it is extremely difficult to repeat the same study and obtain the same results. To address this issue, Yin (2009 p.45) recommends two tactics to overcome this shortcoming: first, the development of a case study protocol; and, secondly, the development of a case study database. These tactics are applied in this study where a case study protocol was developed (see Appendix B) to present the data collection process, and a case study database (see Appendix A) to present the documentation and evidence that the study is based on. These tactics aim at reducing the limitation of difficulties in replicating case studies with regard to reliability aspects.

The main source of data for this study is through interviews and the general disadvantages of this method may be viewed as limitations to the study. Interviewer bias is a common disadvantage in face-to-face interviews, especially if only one interviewer conducts all the interviews (Cavana et al. 2001; Zikmund 2003). Interviews are viewed as a limited source of data because interviewees report their perceptions about what has happened (Patton 1990) and these perceptions are subject to distortion due to personal bias, response bias, inaccuracies due to poor recall (Yin 2009) and suboptimal techniques and skills (Seidman 1998). In this regard, the researcher studied techniques and skills of interviewing (Seidman 1998) prior to conducting the interviews, reviewed the interview questions, applied validity checks and discussed the interview questions with other researchers and practitioners (pilot study) and practised articulating the questions to represent the written questions to reduce bias. Although the interview protocol as a method of collecting evidence for a study does have limitations—as all other methods do—it can be argued that the strengths and advantages of this method surpasses the limitations within the context of this study. Although the limitations to the research methods applied in this study, as explained above, may have had a negative impact on the study, the researcher applied tactics that other experts on case study methodology (Perry 1998; Riege 2003; Seidman 1998; Sobh & Perry 2006; Yin 2009) developed to reduce these limitations.

Ethical considerations

Ethical considerations in business research become effective when different parties, including the researcher and the respondent/s, enter into a relationship where the researcher studies respondents (Zikmund 2003). At this point, codes of ethics for the behaviour of all parties are established. The code of ethics addresses the rights and obligations of all parties and these are related to the required behaviours of researchers and respondents (Zikmund 2003). Respondents have the rights to voluntary and un-coerced participation without physical, psychological or legal harm or risk; to receive full and open information about the research; and they have the right to privacy, confidentiality and anonymity (Christians 2000; Miles & Huberman 1994; Zikmund 2003). Respondents have an obligation to provide honest answers to the research questions (Zikmund 2003).

The obligations of the researcher with regard to the research study include objectivity and accuracy; and researchers need to shun deception, plagiarism, fraud, faulty conclusions and misrepresentation of findings (Christians 2000; Miles & Huberman 1994; Zikmund 2003). In researchers' relationship with respondents, they need to protect the respondents' right to privacy and, in general, ensure that the research study does not harm respondents in any way (Christians 2000; Miles & Huberman 1994; Zikmund 2003).

For this study, ethical clearance was endorsed and full ethics approval was granted on 28 November 2008. Ethical clearance was granted for this study for one year and data collection through the interview protocol was conducted during February and March 2009. To ensure objectivity and accuracy in this study, the interviews were recorded and transcribed and the direct data were used in the content analysis. Using the direct data ensured that a full account of the interviewees' answers were included in the analysis. To avoid plagiarism, the EndNote referencing system is applied throughout the thesis. The conclusions and findings of this study are based on the real evidence obtained from documentation and the interviews.

To ensure the respondents' rights to voluntary participation, respondents were identified and their participation was individually and personally requested by

e-mail. Only those individuals indicating their interest in the study were further involved. Respondents were assured about confidentiality and anonymity in the original contact and also before the interview commenced. Individual interview results were not disclosed to any other parties—with the exception of the researcher's supervisory team. Full and open information about the study was provided in the original contact with the identified respondents, and details about the study were provided prior to the interview. Verbal consent to participate in the study and the right to withdraw from the study was given by respondents prior to the interview. To debrief the respondents the researcher invited respondents to discuss any issues related to the study and or the interview questions after the interview. Respondents were invited to contact the researcher about the study any time before or after the interview; and they were also permitted to stop the interview or to pass over any interview questions whenever they wanted to. To further ensure the respondents' right to confidentiality and anonymity, a deed of confidentiality was signed by the company contracted for transcribing the interviews. Based on these measures, full ethical clearance for the study was granted by the USQ Human Research Ethics Committee.

3.10 Chapter summary

This chapter provided details about the research methods followed in this study. By considering the research objective for this study, different scientific paradigms were evaluated and the realism paradigm was selected as the appropriate research paradigm for this study. From the realism paradigm the research approach was justified. A qualitative approach following both an induction and deduction approach based on the case study method was chosen as the appropriate research approach. A multiple-case study design was selected that included nine strategy groups as cases from Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council. The case study selection criteria were explained to justify the selection of the specific cases. For this study, multiple data collection methods were incorporated, including the interview protocol as primary source of data collection and documentation as secondary source. To establish the quality of the research design, four tests related to social research (construct validity, internal validity, external validity and reliability) were considered and their application to the study was explained.

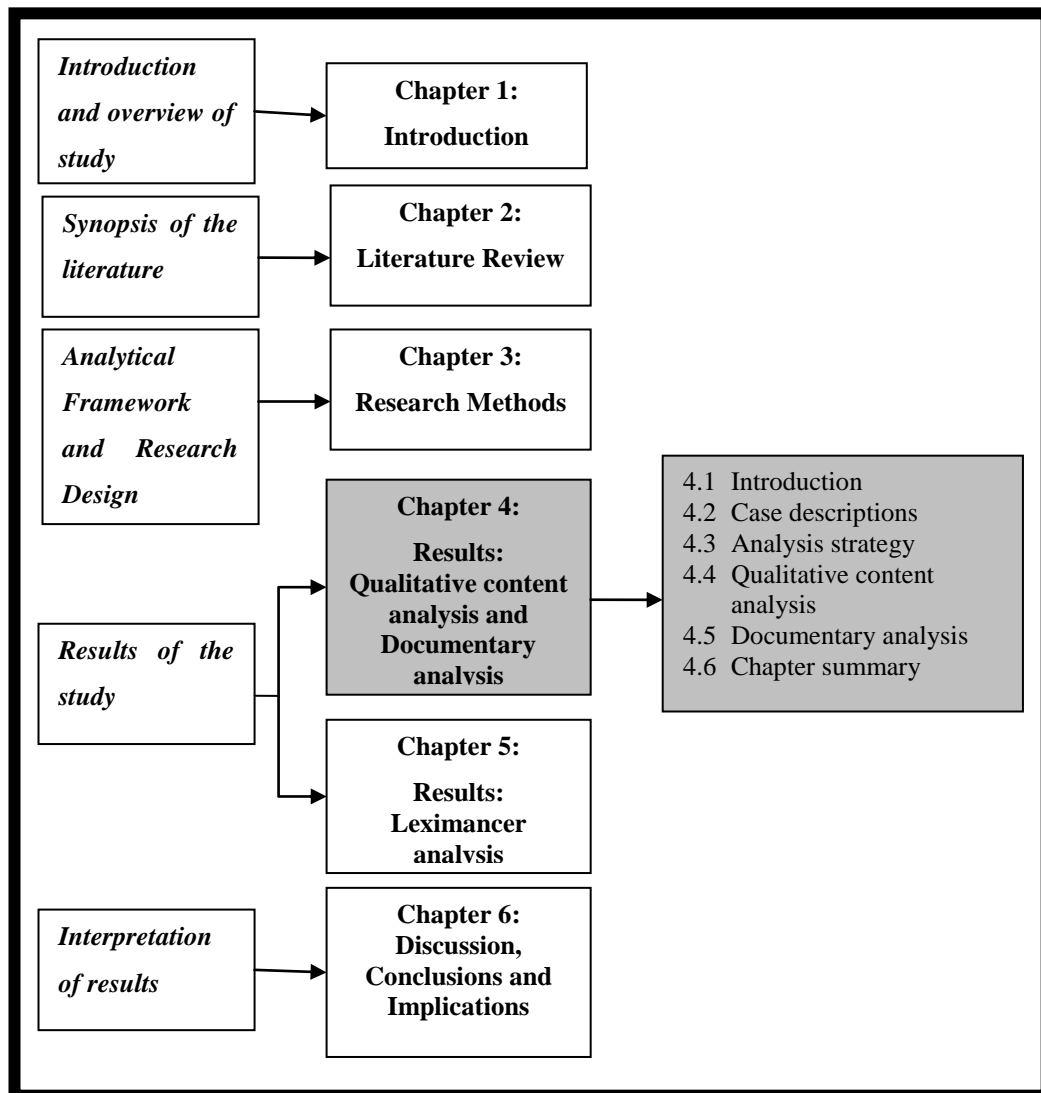
Following from the research approach, the research design was described, and a flow diagram of the data gathering process presented in Figure 3.4 provided an outline of the three phases that are followed in this study. The data analysis plan presented in Figure 3.5 indicated how the data collected from the interviews are analysed and linked to the research questions. The next section focused on how the interview instrument was designed and included a table showing how the interview questions were related to the research questions (as presented in Table 3.2).

With regard to the data analysis approach in this study, multiple data analysis methods were discussed including qualitative content analysis, Leximancer analysis and documentary analysis applicable to this study. This was followed by a section outlining the limitations of the selected research methods and how these limitations were addressed in the study. Finally, a section on ethical considerations explained the rights and obligations of the researcher and respondents and indicated how these were addressed in the study.

This chapter presented the research design and methodologies followed in this study and in the next two chapters the results obtained from the various analyses are presented. In Chapter 4, the results of the qualitative content analysis and the documentary analysis will be presented; and in Chapter 5 the results from Leximancer analysis will follow.

Chapter 4

Results: Qualitative content analysis and documentary evidence



4.1 Introduction

In Chapter 2 the theoretical foundation for the main components of the study, namely, shared mental models, strategic thinking and strategy development are discussed. Furthermore, four research questions based on the gaps in the literature are identified and a number of propositions are developed. In Chapter

3, the research methods developed to investigate the research issues are presented. Following from the research design presented in Chapter 3, the aim of this chapter, Chapter 4, is to present the findings of this study.

This chapter commences with a brief description of the cases and identifies the three major strategy groups that the study is based on. This is followed by an outline of the analysis strategy that is followed, showing the link between the research questions and propositions and the subsequent findings. Next, the results of the qualitative content analysis results are presented. Then the results of the documentary analysis are reported. In the following chapter, the results from the Leximancer analysis are presented. After presenting three sources of analysis of the interview data, the results are triangulated in Chapter 5. These results are discussed in Chapter 6.

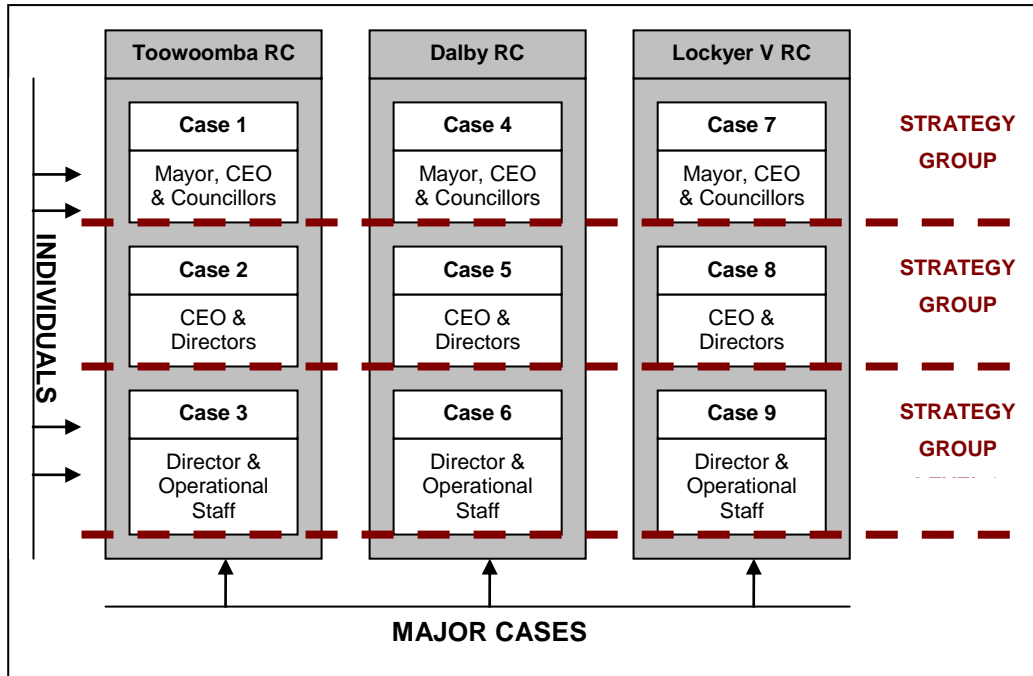
4.2 Case descriptions and participant details

In Chapter 3, the nine cases incorporated in this study are identified. Because this study aims at investigating mental models of strategic thinking across three different organisational levels, the results of the data analysis are grouped into the three levels and presented as Strategy Group Level 1, Strategy Group Level 2 and Strategy Group Level 3. Figure 4.1 presents an outline of how these groups are established.

Strategy Group Level 1 represents the cross-case results of mayors, chief executive officers and councillors from the three regional councils. Strategy Group Level 2 represents the cross-case results of the chief executive officers and directors of departments of the three regional councils. Strategy Group Level 3 represents the cross-case results of the director of the department or directorate responsible for strategy development and operational staff in that department or directorate directly involved with strategy development of the three regional councils. In one of the councils, a Strategic Services Directorate was established and all staff from this unit are included in Strategy Group 3. In the other two councils, such units are not established but the Director of Corporate Governance Department and the Director of Corporate Services are leading and managing staff members from different departments who are

appointed as members of a third-level strategy group on a matrix basis. They are included in Strategy Group Level 3.

Figure 4.1 Strategy groups



Source: Developed for this study

Before the results obtained from the interviews with strategy group members are presented, it is now explained how the research questions are related to the propositions developed in Chapter 2. The actual results are presented according to the research questions and the applicable propositions are addressed in the discussion. The next section provides details about the analysis strategy.

4.3 Analysis strategy

As explained in the previous section, the results for this study are presented according to the four research questions. For each research question, a number of propositions apply and Table 4.1 provides a guide for the link between the research questions, the propositions and the section in which the applicable results are presented.

Table 4.1 Connection between research questions and propositions

RESEARCH QUESTION	PROPOSITIONS	RESULTS: SECTION	DISCUSSION: SECTION
1. What is the shared task mental model of strategic thinking of strategy groups?	<p>P1: Strategy group members consider sustainable competitive advantage when thinking about the long-term direction of the organisation.</p> <p>P2: Strategy group members think holistically about the organisation when they apply strategic thinking in considering the long-term direction of the organisation.</p> <p>P3: Strategy group members apply analytical and creative thinking when they apply strategic thinking in considering the long-term direction of the organisation.</p> <p>P4: Strategy group members think long-term about the future when they apply strategic thinking in considering the long-term direction of the organisation.</p> <p>P5: Strategy groups on and across various organisational levels apply strategic thinking in considering the long-term direction of the organisation.</p>	<p>Section 4.4 (qualitative content analysis)</p> <p>Section 5.4 (Leximancer results)</p> <p>Section 4.5 (documentary evidence)</p> <p>Section 5.5 (Triangulation)</p>	Section 6.2.1
2. What is the level of agreement of task mental models of strategic thinking among strategy groups?	<p>P6: Successful strategic thinking requires high levels of agreement of task mental models among group members within a specific strategy group.</p> <p>P7: Successful strategic thinking requires high levels of agreement of task mental models among strategy groups within the organisation.</p>	<p>Section 4.4 (qualitative content analysis)</p> <p>Section 5.4 (Leximancer results)</p> <p>Section 5.5 (Triangulation)</p>	Section 6.2.2
3. What is the shared group-functioning mental model of strategy groups?	<p>P8: Strategy group members share perceptions about other strategy group members' knowledge, skills, and attitudes when they apply their shared mental model of strategic thinking in considering the long-term direction of the organisation.</p> <p>P9: Strategy group members share perceptions of how the group interacts when they apply their</p>	<p>Section 4.4 (qualitative content analysis)</p> <p>Section 5.4.5(Leximancer results)</p> <p>Section 5.5</p>	Section 6.2.3

RESEARCH QUESTION	PROPOSITIONS	RESULTS: SECTION	DISCUSSION: SECTION
	<p>shared mental model of strategic thinking in considering the long-term direction of the organisation.</p> <p>P10: Strategy group members share perceptions of the roles and responsibilities of other group members when they apply their shared mental model of strategic thinking in considering the long-term direction of the organisation.</p>	(Triangulation)	
4. What is the level of agreement of group-functioning mental models among strategy groups?	<p>P11: Successful strategic thinking in organisations requires high levels of agreement of group-functioning mental models among group members within a specific strategy group.</p> <p>P12: Successful strategic thinking in organisations requires high levels of agreement of group-functioning mental models among strategy groups</p>	<p>Section 4.4 (qualitative content analysis)</p> <p>Section 5.4 (Leximancer results)</p> <p>Section 5.5 (Triangulation)</p>	Section 6.2.4

Source: Developed for this study

4.4 Qualitative content analysis results

This section presents the results from the qualitative content analysis. As discussed in Section 3.8.1, Chapter 3, qualitative content analysis was applied in this study to allow the investigation of specific pre-determined topics and to provide knowledge and understanding of the issues under investigation. The method for coding is related to the directed content analysis approach where coding commences with predetermined categories derived from theory and, through analysis of interview data, additional categories are identified to extend and enrich current theory (Hsieh & Shannon 2005).

The data obtained from the interviews are presented for each of the four research questions (see Table 3.2). For research questions one and three, the interview results of the individuals in each of the cases are aggregated per level and presented per strategy group (see Figure 4.1 Strategy groups). For research questions two and four, the level of agreement within the strategy groups is presented and analysis of the data through cross-case analysis is applied. These

results are discussed in relation to the propositions (as outlined in Table 4.1) in Chapter 6.

4.4.1 RQ 1: Content of shared task mental models in three levels of strategy groups

Data related to this research question are obtained from interview questions such as ‘what is your personal understanding of strategic thinking?’ and ‘how important is strategic thinking for your RC and why’ (see Table 3.3). These open ended questions provide the opportunity for interviewees to discuss their personal understanding of strategic thinking, to explain their views about how strategic thinking within the context of the Regional Council is applied and to indicate how they understand strategic thinking within the strategy development process. The direct quotes in this section are obtained directly from the transcribed interviews with the mayors, chief executive officers and councillors from the three major cases (Toowoomba, Dalby and Lockyer Valley) but, due to anonymity and confidentiality assurance, individual contributions cannot be identified. The interview data are categorised according to the predetermined four elements of strategic thinking. The results for each strategy group now follow.

4.4.1.1 Strategy Group Level 1 (Cases 1, 4 and 7: Mayors, Councillors and Chief Executive Officers)

The predetermined categories of coding relate to the elements of strategic thinking as identified and discussed in Chapter 2. The content of each of the pre-identified categories are now presented.

Strategic thinking: sustainability and competitive advantage:

Overall, the mayors, councillors and chief executive officers in this group view strategic thinking as a very important issue and they link sustainability and competitive advantage to strategic thinking. They describe strategic thinking as ‘*very important in setting strategy*’ and as ‘*extremely important in establishing sustainable communities in the future*’. Group members claim that councils are competing with neighbouring communities for federal funding and the focus of

competitiveness is on economic development and efficiency. Councils need to *'seek opportunities for economic development'* to attract new businesses and people into their communities. When development opportunities are created, monetary influx follows and employment opportunities are created.

For this group, the scope of strategic thinking relate directly to town planning and development of communities. In considering new projects, the first criterion is the *'benefit to the region and the community'*. A regional focus is the key driver of the council: to be proactive instead of reactive in finding the most sustainable direction for the council. The mayors, councillors and chief executive officers conclude that, to ensure sustainability, strategic thinking is applied as a continuous process and changes to the organisational strategy are made through a process of reviewing and reconsideration of the long-term directions of their regions. Group members admit that, although regional councils are not focused on profitability, they are orientated towards efficiency and seeking competitive advantage in relation to neighbouring councils based on efficiency measures. They comment that *'council are not normally geared towards profits, while not geared towards profits, they're certainly geared towards efficiency'*. For this group, efficiency measures play an important role in strategic planning, *'considering different and cost effective ways to deliver services to the community'*. They have to ensure that the required services are rendered to the community within the regional council's budget.

Strategic thinking: holistic view:

The mayors, councillors and chief executive officers indicate that a holistic view towards all council functions and stakeholders is required. They say that the current planning and development of estates and suburbs need to take a holistic approach towards considering the impact on other council services such as roads, sewerage management, water management and business development. To demonstrate the importance of strategy and strategic thinking, one of the councils established a 'strategic services' unit to address strategic planning in their council. They explain the tasks of the strategic services unit as a *'core function and branch so we're now acknowledging the importance of strategy and strategic planning and thinking'*. They indicate that the challenge for strategic

thinking nestles in focusing on developing long-term frameworks for their organisations, for example, *‘divorcing yourself from the day-to-day operations’* and *‘taking a holistic view of the council and to develop frameworks and policies that will get us there’*.

Strategic thinking: analytical and creative thinking:

The mayors, councillors and chief executive officers believe that strategic thinking in councils needs to adhere to federal and state legislation. Some respondents say that councils, especially after the amalgamations, are *‘not mature enough to take on these responsibilities’*. They claim that some of the regulations are non-specific directions that are in conflict with council strategies, and councils have to accommodate these regulations. Councils have to develop strategies that are both in line with state and federal legislation and representative of the visions of community groups—and this is regarded as challenging. Some of the mayors, councillors and chief executive officers say that legislation followed a *‘one size fits all’* approach and they feel that this is inappropriate as each council has individual circumstances that need to be taken into account and more flexibility is needed.

Group members indicate that councils depend on resources from state government to implement their strategic plans. Some of the mayors, councillors and chief executive officers view the long administrative processes in obtaining those resources as problematic. While waiting for the resources, the circumstances in council often change and then they needed to replan. Because state government has the final say in development issues and has to sign off on amendments to town plans, members feel that their *‘creativity in developing the long-term plans for their councils are stifled’*. They claim that, as councillors, they have a better understanding of the area and the needs of the community and *‘need the freedom of making decisions about town planning in our regional area’*, rather than being subjected to a blanket approach through state government regulations.

The mayors, councillors and chief executive officers claim that strategic plans are continuously reviewed based on analysis of the external and internal environment. The council departments (such as the Planning, Building and Environment Services and Engineering Departments) provide them with relevant

information to enable the review of strategies. They believe that it is important that various options for the long-term direction of the councils are developed and considered and some councils indicate that they followed a *'think tank'* approach to identify different options and then they analysed and compared those options, choosing the most appropriate option for the council.

Strategic thinking: long-term direction and the future:

In defining strategic thinking, the mayors, councillors and chief executive officers define strategic thinking as a critical and core function that addresses the long-term goals of the council; for instance:

'most important core function'; 'to look ahead', 'visioning the community in fifty years' time' and 'think about the long-term goals'.

They indicate that strategic thinking includes setting the long-term direction of where the organisation should be moving, setting in place plans and processes to enable the achievement of the strategic direction. Strategic thinking is described as:

'thinking outside the square', 'the big-picture view', 'high-level, big-picture stuff, overall vision', 'trying to avoid getting caught up in technicalities' and 'looking into the future'.

They see strategic thinking as integrated with the future of their community. Group members believe that it deals with plotting the community's attainable future and contains *'thought processes about how to reach that future'*. The vision of the community's future depends on the pressures and issues of the community: *'You can't separate the strategic plan from the community'* and to develop the future requires *'the involvement of people from the wider community'*. This group thinks that the input and strategic thinking from community groups are essential for this strategy group in assisting them in determining the future of the community. The strategic views of different community groups are integrated to determine an overall direction for the council.

Although long-term visioning and planning for that vision was very important, some members feel that *'many decisions made in council are based on spur-of-the-moment situations that are not in-line with long-term planning'* and this

causes problems along the way. The new Local Government Act include a ten year community plan and a ten year asset plan and group members assume that these plans will support developing long-term planning of councils. If councils did not have long-term plans, they would act reactively to everyday issues, rather than focusing on the long-term plan.

4.4.1.2 Strategy Group Level 2 (Cases 2, 5 and 8: Chief Executive Officers and Directors)

The quotes in this section are obtained directly from the interviews with the chief executive officers and directors from the three major cases (Toowoomba, Dalby and Lockyer Valley) but, due to anonymity and confidentiality assurance, individuals are not identified.

Strategic thinking: sustainability and competitive advantage:

The chief executive officers and directors acknowledge the need for competitiveness; they say that although they are part of a public sector organisation, they compete on specifics such as ‘service delivery, customer satisfaction, delivery efficiency and things like that’. They are aware of seeking new opportunities to cooperate as well as compete, and state that *‘we must think about opportunities available to ensure competitiveness...we are still in competition with our neighbours [neighbouring councils] and while we work together for betterment of local government I would suggest we still compete... (we need to consider) what can we can do to attract investment, new businesses, new people to our region’*. Through strategic thinking they consider efficiency and sustainability and comment:

‘you’ve got to ask yourself whether they’re core local government functions or whether they can actually be performed by somebody else in a more efficient way because we compete on efficiency’.

Strategic thinking: holistic view:

In the strategy development process, the chief executive officers and directors express a holistic view through an awareness of the external demands of the region as well as the internal needs of the organisation and they comment:

'we need to take cognisance of the full nature of the region', and 'taking a high level view of the firm in the context of its value chain' 'everything is dynamic in the world, nothing is static and the moment you change one element or variable you will change the rest of the outcome, and that outcome has to be always re-checked to see whether it's desired or undesired.'

Strategic thinking: analytical and creative thinking:

Members agree that both analysis and creativity are required in strategic thinking, and they explain this as follows:

'it's got elements of creativity and lateral thinking, it's about understanding the context that you're working in...so you're thinking strategically when you say well, what's our context, what are our strengths, weaknesses, opportunities, all of those sorts of tools that help you and all those things are tools to try and get those juices flowing';

'strategic thinking is about generating options and ideas but it's also about analysis of those ideas';

'it's [creative thinking] the first step, the brainstorming, visioning, it's really getting away from the day-to-day operational and just having creative ideas for the future'.

Strategic thinking: long-term direction and the future:

The chief executive officers and directors were asked to express their personal understanding of strategic thinking and they explain it as 'deliberate cognitive processes'; strategic thinking has to do with 'big pictures, the helicopter views' and they view it as 'almost like a tool' aiming at putting into place actions and plans to lead to a 'preferred future'. It sets the direction of where the organisation should be moving. They indicate the long-term aspect of strategic thinking:

'long-term vision', 'look ahead and see what you might want to do' and 'vision', 'to set the long-term direction of where the organisation should be moving, setting in place plans and processes to be able to achieve the strategic direction'.

Strategic thinking is viewed by this group not only as the long-term vision, but also includes the identification of key aspects that might influence the vision:

'...key issues that are going to affect the long-term viability of the organisation'; 'it's at the forefront of the strategy development because we've really got to understand what the key issues are and whether we should continue with things we've done in the past'.

Regarding the placement of strategic thinking within strategy development, members respond that *'it is essential to it, if not a prerequisite to that whole process of strategy development'* and *'it is essential, a first'*.

In response to the question about how regularly strategic thinking should be applied, members of this group respond that they experience continuous change and their strategic thinking have to be adapted constantly:

'it needs to be constantly reviewed', 'we're in that environment of white water rafting, it's just constant change, unpredictable and you've just got to find a way', 'there's got to be the flexibility to be able to change what you're doing'.

Although they indicate that their strategic plans need constant reviewing, there is a clear distinction between developing the main plan and phases of reviewing the plan:

'it's probably an annual process of having a strategic thinking session and then there's a process for the rest of the year of developing that strategic thinking and going back and reviewing it', 'it's got to be a continuous process to incorporate changes to legislation, changes in the external environment and community reaction'.

4.4.1.3 Strategy Group Level 3 (Cases 3, 6 and 9: directors and operational staff involved with strategy development)

The quotes in this section are obtained directly from the interviews with the directors and operational staff members involved with strategic thinking from the three major cases (Toowoomba, Dalby and Lockyer Valley) but, due to anonymity and confidentiality assurance, individuals are not identified.

Strategic thinking: sustainability and competitive advantage:

Although sustainability is not specifically mentioned, directors and operational staff members involved with strategic thinking consider the community plan and corporate plan as instruments in ensuring long-term survival of councils. Several members of this group support the new Local Government Act because it required councils to develop ten year community plans that *'enforces councils to be more strategically orientated...it encourages strategic thinking'*, and corporate plans to *'present the long-term direction of the council'*. They do not mention competing with other councils, but focus more on efficiency measures as they voice their concern about reduced staff levels after amalgamation:

'we've lost many staff with the amalgamation and now we have a larger area to serve and fewer people to take on the responsibilities... I don't know how we are going to cope with the increased demands';

'we've gone from little local governments which were probably struggling to resource themselves to a large local government which is, instead of missing half a person each it's now missing three people which has a much more significant impact on service delivery'.

Strategic thinking: holistic view:

Directors and operational staff members involved with strategic thinking indicate that they view the overall process of strategic planning as incoherent and lacking a systems approach. A member of this group explains the misalignment between federal government, state government and local government regarding community planning. He believes that community planning represent the responses to government issues such as urban development, transport and roads planning and management of natural resources; and that the aim of the community plan is to identify the development needs and allocate responsibilities to different government sectors. For this process to function successfully the different levels of government need to be aligned and the directors and operational staff members involved with strategic thinking agree that this is not the case. They feel that the overall process of strategic planning is fragmented and comment as follows:

'we work in silos';

'[the] Local Government Act and the Integrated Planning Act don't cross-relate in terms of their requirements, the corporate plan has to address things over here and the planning scheme has to address things over there. The state government, in its best practice guidance to local government says that we should integrate and align our processes but the legislation isn't...local government people have introduced this concept of long-term planning, in terms of community planning as well as integrated planning...the Toowoomba 2050 project which I ran identifies the issues which are impacting our regional community.'

Regarding systems thinking within the council, members of this group explain that misalignment occurs because each disciplinary group work in silos and make decisions without consulting other groups and taking into account the influence that a decision in their group may have on others. They emphasize the need for alignment between disciplinary groups:

'the people doing the corporate planning didn't talk to the people doing the development planning...so you ended up with documents or processes that were at odds with each other so engineers plan to supply water and sewer to areas that the planners were planning to leave as environmental areas';

'to get the real power of a multidisciplinary group, it relies on us working together as a group and not just bringing forward the views of one individual but actually as a group sitting down and talking about the concepts in advance, so you get an engineering perspective, you get an environmental perspective, you get a community perspective'.

Strategic thinking: analytical and creative thinking:

The job requirements of directors and operational staff members involved with strategic thinking are focused on providing other strategy group levels with information about operational issues in their specific departments and implementing strategies, rather than actually developing it. Although they do have an input into strategy development, it is to a lesser degree than first and

second level strategy groups. Members of this group are responsible for preparing and analysing data from the council departments and provide the analyses to first and second level strategy groups for development of the corporate plans. Therefore, they view their analysis of information as important and as a prerequisite for strategic thinking, for example:

'strategic thinking is something that occurs, in my opinion, after you've done the analysis, and certainly that's the way we generally plan. We get all our baseline data, we put it altogether, we analyse it against what's happened before and we try to develop a picture of what may or may not occur in the future'.

In one of the councils, however, a specific directorate has been established to lead strategy development and the majority of members of that group operate within the third level strategy group. They describe their responsibility in this group as:

'[to] lead strategy development and ensure that strategic thinking occurs and that the planning result from it', 'creating the infrastructure for strategic thinking'.

Strategic thinking: long-term direction and the future:

The directors and operational staff members involved with strategic thinking were asked what their personal understanding of strategic thinking is and their response shows that it entails the long-term direction of their councils. They define strategic thinking as follows:

'long-term or long-range planning, it deals with concepts of what could be';

'where we are now, where do we want to go and how do we get there' and 'the decisions we're making today in support of where we want to head in future'.

It is also assumed by members of this group that strategic thinking includes monitoring the process of strategy development and a planning component:

'ultimately how do we measure our success in getting there' and 'coming up with actions to deliver where you want to be'

Because members of this group are responsible for implementing organisational strategies, they express the importance of the corporate plan as a guide for decision making:

‘if you’ve got a good corporate plan in place, your decision making’s easy and the justification of your decision-making is so easy because you’ve got you know, hey guys, we all agreed, we all contributed to this corporate plan that is setting our future’.

The results from data obtained from the open-ended interview questions pertaining to the content of task mental models for each of the strategy group levels have now been presented. To compare the coding categories applied to each of the strategy groups, Table 4.2 provides a summary of the coding categories per strategy group.

Table 4.2 Coding categories: strategic thinking content

CATEGORY	STRATEGY GROUP LEVEL 1	STRATEGY GROUP LEVEL 2	STRATEGY GROUP LEVEL 3
Thinking about sustainable competitive advantage	X	X	X
Thinking holistically	X	X	X
Thinking analytically and creatively	X	X	X
Thinking long-term about the future	X	X	X

Source: Developed for this study

4.4.2 Quantitative content analysis

The research design for this study includes a component of quantitative data obtained through structured questions in the interview (see Section 3.7, Chapter 3). As explained in Section 3.7, the purpose of this scenario exercise is to elicit mental models about strategic thinking using a different method to enable triangulation of the results. This method is adapted from the method applied by Webber et al. (2000). The aim of the structured questions in providing quantitative data is to obtain another source of descriptive data to compare to the other sets of qualitative data through triangulation. Because of the small sample size and the purpose of this data, statistical tests to determine the goodness of data and the levels of significance were not conducted. Scores are assigned to the level of priority identified by the respondents merely to provide a means of

comparing the perceptions of respondents. To acquire information about how participants apply elements of strategic thinking in practice, a scenario was created (see Section 3.7) and respondents were required to rate a list of actions (related to the elements of strategic thinking) according to their importance as strategic thinking actions. Actions are rated as either ‘High Priority’, ‘Medium Priority’ or ‘Low Priority’. The list of twenty actions include two actions for each element that are, according to strategic thinking theory, high priority actions and twelve other actions that are not considered high priority. The rationale for including actions that are not strategic thinking actions is to provide the opportunity for respondents to distinguish between strategic thinking actions and operational actions. Each of the high priority actions that were correctly identified as high priority was scored a value of ‘3’. If a high priority action was identified as a ‘Medium Priority’, it was scored a value of ‘2’ and a high priority action that was identified as a ‘Low Priority’ was scored a value of ‘1’.

The maximum score for identifying all high priority elements correctly is six points for each of the predetermined four elements of strategic thinking (three points for each of the two questions related to a specific element). The results of individuals in each strategy group level were aggregated and are now presented in Table 4.3. It is important to note that although the survey section of the interview provides quantitative data, the survey objective is to obtain a set of qualitative data about participants’ perspectives about strategic thinking to allow for comparison between the strategy group levels. These results are triangulated with other qualitative data sources in Chapter 5.

The results in this table present the analysis of results from the scenario question in the qualitative survey. For each strategy group level, results for each element of strategic thinking are presented. The average score per level was calculated by aggregating the scores of individuals in each group and averaging the total. The ‘average score total’ represents the average of the scores for the elements and indicates an overall score for each level. The ‘average score per element’ shows the average score of each element across the levels.

Table 4.3 Frequency distribution of results: quantitative content analysis

STRATEGY GROUP		ELEMENTS OF STRATEGIC THINKING				AVERAGE SCORE TOTAL
		E1	E2	E3	E4	
LEVEL 1	Average score	5.3	4.5	5.3	4.5	4.8 (80%)
LEVEL 2	Average score	5.4	4.8	5.2	4.8	5.1 (85%)
LEVEL 3	Average score	4.7	4.4	4.4	4.7	4.6 (77%)
AVERAGE SCORE PER ELEMENT ^{1*}		5.1	4.6	5	4.7	
PERCENTAGE OF MAXIMUM SCORE*		85%	77%	83%	78%	

Source: Developed for this study

Please note:

¹'Average score per element' presents a score out of 6 for each element: the maximum score is 6 for each element. The sum of the scores is calculated to provide the arithmetic average (the mean).

E1= Element 1: Thinking about competitive advantage

E2= Element 2: Thinking holistically

E3= Element 3: Thinking analytically and creatively

E4= Element 4: Thinking long-term about the future

* Due to the limited sample size, standard deviation could not be calculated on average scores – the purpose of calculating average scores and percentages was to provide a general indication of ranking and will be dealt with in a descriptive manner.

As mentioned before, the purpose of obtaining results through different analysis methods is to cross-check the qualitative data, to confirm the trends about the elements of strategic thinking and to allow comparison between results of the three levels of strategy groups and between the elements. The results of the quantitative data are triangulated with the qualitative data in an attempt to support other findings (see Section 5.5 Chapter 5). The comparison of results of the three strategy groups indicates the following:

- Strategy Group Level 2 achieves the highest score for application of strategic thinking through a scenario exercise.

-
- Strategy Group Level 1 achieves the second highest score for application of strategic thinking through a scenario exercise.
 - Strategy Group Level 3 achieves the lowest score for application of strategic thinking through a case scenario exercise.

The maximum score for each element is six. When the average scores per element are expressed as a percentages of the maximum score, the percentages range between seventy-seven percent and eighty-five percent. This indicates that participants are highly successful in identifying all the strategic thinking actions in the given scenario. When the overall scores for each of the elements are compared, the results are as follows:

Across the strategy group levels, element one, thinking about sustainable competitive advantage, achieves the highest score and this indicates that participants consider efficiency measures, flexibility in adapting to changes and seeking new opportunities for competitive advantage, as highly important.

Element three, thinking analytically and creatively, achieves the second highest score and this indicates that participants demonstrate understanding that problem-solving is achieved through analysis of the problem and development of creative solutions.

Element four, thinking long-term about the future, achieves the third place and this indicates that, for the scenario exercise, participants rate actions related to achieving the vision for the organisation as less important than thinking about sustainable competitive advantage and thinking analytically and creatively.

The element that achieves the lowest score is element two, 'thinking holistically'. This element addresses systems thinking and coordinated action and, for this exercise, it is rated as less important than the other elements. The following section addresses the level of agreement of task mental models and provides the results of agreement within each strategy group and also across the strategy groups.

4.4.3 RQ 2: Level of agreement of task mental models within each level and then across the levels

This analysis provides insight into the levels of agreement within each group and across the groups. To enable comparison of results, the results are coded into analysable units (Lockyer 2004). To answer Research Question 2 about the levels of agreement, the coding scheme is simplified into three categories of agreement; high level, medium level and low level. The purpose of coding is to enable the answer to managerial questions without being too elaborate (Zikmund 2003). For within groups, the number of respondents who are in agreement provides the categories for coding. When less than thirty percent of respondents in a group are in agreement about a specific element, the agreement level is coded as ‘low’. When the percentage of agreement among respondents is between thirty and sixty percent, the agreement level is coded as ‘medium’ and if this percentage is more than sixty percent, it is coded as ‘high’. For coding the agreement level across the three strategy groups, a similar coding method is applied. When all three groups have different perspectives, the agreement level is coded as ‘low’. Two groups that are in agreement are coded as ‘medium’ and if all three groups are in agreement, the level of agreement is coded as ‘high’. Table 4.4 provides an indication of the coding categories of the levels within groups and across groups.

Table 4.4 Coding categories for level of agreement – within and across groups

AGREEMENT LEVEL	WITHIN GROUPS	ACROSS GROUPS
LOW LEVEL	<30% respondents are in agreement	Groups have different perspectives
MEDIUM LEVEL	30 – 60% respondents are in agreement	2 out of 3 groups are in agreement, or 1 out of 2 groups are in agreement
HIGH LEVEL	>60% respondents are in agreement	3 out of 3 groups are in agreement, or 2 out of 2 groups are in agreement

Source: Developed for this study

First, the results of levels of agreement within each group level are presented and this is followed by an across-level analysis.

4.4.3.1 Within-group: Strategy Group Level 1 (Cases 1, 4 and 7: mayors, councillors and chief executive officers)

The responses from the mayors, councillors and chief executive officers to open-ended questions addressing sustainability and competitive advantage reveal a shared view of creating sustainable communities for the future and competing with neighbouring councils for opportunities for economical development. There is agreement in their views that efficiency measures play an important role in their councils.

There is a high level of agreement in how group members described the nature of strategic thinking. For the first strategic thinking element (sustainability and competitive advantage), members use different words and terms to describe that strategic thinking entails the long-term direction of the future of the organisation. They use phrases like ‘high-level big-picture stuff’, ‘overall vision’, ‘to look ahead’. They all link their organisation’s direction and future to the future of the regional community.

The element pertaining to strategic thinking as having a holistic view of the organisation does not feature prominently in the interview data. Although some members do indicate that all decisions should incorporate a holistic view of the council, most members of this group do not specifically mention this aspect in response to the open-ended questions about strategic thinking. Although all members acknowledge the importance of their role in liaising with the community and understanding their needs and wishes in the process of developing organisational strategy, a small group of councillors express their role as focused exclusively on the community needs. Councillors with a community focus explain their role as being a link between the community and the council, making sure that operational issues such as potholes in the roads and community swimming pools are addressed by council. They base their understanding of their role upon the fact that they are elected by the community and need to address and satisfy the needs of the rate-payers. This view is shared by a small number of (mostly) newly-elected councillors and not by all members in the group and, therefore, a low level of agreement is demonstrated in perceiving the council holistically.

From the answers to open ended questions addressing analytical and creative thinking, a high level of agreement regarding the impact of federal and state legislation on creativity in developing organisational strategy is noted. Members of the first level group state that the legislation applies a blanket approach and do not allow flexibility and creativity in developing long-term plans for councils. Furthermore, they indicate that they depended on information from council departments such as assessments of planning scheme proposals, environmental values of the area and the operation of the water supply and wastewater systems to assist them in their analysis of proposals or options related to strategy development. Members of this group agree that they sometimes experience difficulty in obtaining the information. Overall, members have a high level of agreement in their understanding of this element.

In summary, the analysis of the first level strategy group's task mental model of strategic thinking content reveals:

- a high level of agreement regarding sustainability and competitive advantage and a shared view of creating sustainable communities for the future and competing with neighbouring councils for opportunities for economical development;
- a low level of agreement regarding a holistic view;
- a high level of agreement regarding the need for both analysis and creativity in strategic thinking and the impact that legislation has on creativity in strategic thinking; and
- a high level of agreement regarding the long-term direction and future of the council that is linked to the future of the regional community.

4.4.3.2 Within-group: Strategy Group Level 2 (Cases 2, 5 and 8: directors and chief executive officers)

With regard to sustainability and competitive advantage, there is a high level of agreement in identifying the need for competitiveness; and aspects such as investment opportunities, efficiency, service delivery and customer satisfaction are identified as bases for competing with other councils. This group identifies the interplay between demands of the community and internal organisational aspects and thereby demonstrates a high level of agreement regarding thinking

holistically. They identify the need for analysis and creativity in strategic thinking, agreeing that strategic thinking is about generating options and ideas, but that analysis of the ideas is equally important.

There is a high level of agreement in how chief executive officers and directors define and explain strategic thinking as a long-term vision for the organisation. They include in their definitions that specific plans about how to achieve the objectives and visions are required as part of strategy development. They agree that strategic thinking is definitely not a ‘one-off’ event. In addition they comment that strategic thinking should be a continuous process. Finally, all members in this group share concern about the implications that the amalgamation process have on staffing resources and the unrealistic expectations of the community that amalgamation created.

In summary, the analysis of the second level strategy group’s task mental model of strategic thinking content reveals:

- a high level of agreement regarding the need for competitiveness and focus on efficiency measures;
- a high level of agreement regarding thinking holistically where the interplay between the community and internal organisational aspects were recognised;
- a high level of agreement that both creative and analytical aspects were required in strategic thinking; generating creative options and analysing those options;
- a high level of agreement in defining strategic thinking as developing a long-term vision for the organisation that needs to be reviewed regularly; and
- a high level of agreement that the amalgamation process caused operational difficulties because of staff resources issues.

4.4.3.3 Within-group: Strategy Group Level 3 (Cases 3, 6 and 9: directors and operational staff involved with strategy development)

Sustainability and competitive advantage are not specifically addressed by this group, although the majority of the group do identify efficiency measures as an important aspect driving strategic thinking. Their focus is more on the requirements of corporate plans and community plans to set the long-term direction for councils. An aspect that emerges in this group is the misalignment between different levels of government regarding community planning; and fragmentation in overall strategic planning that creates difficulties in their attempts to implement these plans.

Members of this group are in agreement that it is their responsibility to provide information to first and second level strategy groups to support strategic decision making. They also acknowledged their role in developing organisational strategy, although it is not as critical as the roles of first and second level strategy groups.

There is a high level of agreement in how members of this group define strategic thinking as long-term and about the future. They view the outcome of strategic thinking, the strategic plan, as an important document in guiding their actions and decision making.

In summary, the analysis of the third level strategy group's task mental model of strategic thinking content reveals high levels of agreement in the categories of:

- Sustainable competitive advantage
- Thinking holistically
- Thinking analytically and creatively
- Thinking long-term about the future

4.4.4 Across-levels analysis

The task mental models of the three strategy group levels are now compared. This analysis is based on results from the categories within each strategy group level and the results are compared across the three levels and the coding categories as set out in Table 4.4 are applied.

Strategic thinking: sustainability and competitive advantage:

There is a high level of agreement regarding sustainability and competitive advantage among Strategy Group Level 1 and Strategy Group Level 2. Both groups acknowledge that councils compete with neighbouring councils for economical development opportunities. Their strategic plans and works programs are developed to justify levels of federal and state government funding. Both groups identify efficiency measures as an important aspect in council operations. In contrast, Strategy Group Level 3 does not focus on sustainability and competitive advantage issues, except for agreeing that the efficiency measures are important in how council performed its tasks.

Overall, the results show a high level of agreement of task mental models between Strategy Group Level 1 and Level 2, and a medium level of agreement between these groups and Strategy Group Level 3 with regard to sustainability and competitive advantage.

Strategic thinking: holistic view:

There is a medium level of agreement across strategy group levels about a holistic view because of diverse within-group perceptions in Group 1 and related perceptions in Groups 2 and 3. For Strategy Group Level 1, a low level of within-group agreement regarding a holistic view is presented. Some of the mayors, councillors and chief executive officers focus exclusively on the task of addressing the needs of the community without considering the impact of those needs on the organisation or other stakeholders. Others consider the impact that council decisions have on the organisation internally, on the direct community and the wider community. In contrast, the Strategy Group Level 2 presents a high level of agreement within the group about thinking holistically by acknowledging the interplay between the community, internal and external organisational aspects. Strategy Group Level 3 members do not specifically comment on issues related to a holistic view, although they do acknowledge that the corporate plan and community plan have implications on the council internally and are linked to external sources such as different levels of government.

Although groups on all levels demonstrate understanding that strategic thinking needs to follow a holistic approach, taking into consideration stakeholders within and outside the council, the various levels focus on different role players and, therefore, the level of agreement across strategy groups is coded as a medium level of agreement.

Strategic thinking: analytical and creative thinking:

Strategy groups on all levels agree that both analytical and creative thinking are required for strategic thinking. Creative thinking is applied to develop options for the long-term direction of the council and analytical thinking is required to analyse the options. Although Strategy Group Level 1 is in agreement that both analysis and creativity are required for strategic thinking, they indicate that their creativity is stifled by inflexible legislation and their analytical thinking is curbed because they have to rely on data analysis from the council departments.

Overall, the results show a high level of agreement of task mental models between Strategy Group Level 1, Level 2 and Level 3 with regard to thinking analytically and creatively.

Strategic thinking: long-term direction and the future:

All three strategy groups explain strategic thinking in terms related to a long-term direction and as setting the vision for the organisation. Strategy Group Level 1 emphasizes the importance of considering the future of the regional community and Level 2 includes the importance of also developing plans about how to achieve the vision. Level 3 stresses that the vision needs to be regularly reviewed and monitored to ensure that they reach the vision.

Although the three levels focus on distinct aspects of importance in thinking about the long-term direction and the future of the organisation, there is a high level of agreement that the long-term direction and the future of the organisation need to be developed for their councils.

Table 4.5 Across-levels results of level of agreement of task mental models

CATEGORY	LEVEL OF AGREEMENT: ACROSS LEVELS
Thinking about sustainable competitive advantage	Level 1 & 2: high level of agreement Level 1 & 2 compared to Level 3: medium level of agreement
Thinking holistically	Medium level of agreement across Levels 1, 2 and 3
Thinking analytically and creatively	High level of agreement across Levels 1, 2 and 3
Thinking long-term about the future	High level of agreement across Levels 1, 2 and 3

Source: Developed for this study

4.4.5 RQ 3: Content of shared group-functioning mental models in three levels of strategy groups

The content of shared group-functioning mental models is based on individual perceptions about:

- other strategy group members' knowledge, skills and attitudes
- how the group interacts and
- the roles and responsibilities of other group members.

These aspects are identified and discussed in the literature review, Chapter 2. They serve as the basis for coding the interview data and represent three predetermined categories. To further define the domain, additional categories are added. These include groupthink and groupshift; perceptions about boundary spanning and perceptions about the balance between strategic thinking and operational thinking. The results of each group are presented according to these categories.

Data related to this research question are obtained from interview questions such as 'How do you personally view the other members in your strategy group's knowledge about developing organisational strategy?' and 'How do group members communicate about each other's responsibilities in the group?' (See Table 3.2 for a full list of interview questions related to this research question.) The results for each strategy group now follow.

4.4.5.1 Strategy Group Level 1 (Cases 1, 4 and 7: mayors, councillors and chief executive officers)

The quotes in this section are obtained directly from the transcribed interviews with the mayors, councillors and chief executive officers from the three major cases (Toowoomba, Dalby and Lockyer Valley) but, due to anonymity and confidentiality assurance, individuals are not identified.

Perceptions about other strategy group members' knowledge, skills and attitudes:

The mayors, councillors and chief executive officers have different perceptions about the knowledge that other group members have about strategy development. Some members of this group think that the knowledge is very good, while others think that the knowledge is limited, for example:

'I think on the whole the knowledge is very good because you have to remember that we've got five ex-mayors in this group, so I suppose that's experience that helps'

'it's just talk...even their level of personal development and ability to be able to think laterally and not revert to that emotional, primeval level in problem solving are challenged'

There's a couple that I consider having really good knowledge and past experience but the rest are very challenged'.

These views reflect the perceptions about the skills, education and experience of other group members that influenced their strategic thinking abilities. Members of this group judge the skills of their group members as ranging from 'good' to 'average', for example:

'good, we have a really good mix of skills that can contribute to strategic thinking', 'I suppose their skills are fair but it is vary varied, they're not all the same, they're not thinking the same, they're not all on the same level of experience and qualifications and this influences their strategic thinking abilities. I think education can help improve those skills'.

Perceptions about the attitudes of group members towards strategy development are all very positive, for example:

'everyone's got a very strong attitude to develop an organisational strategy...there is a positive willingness'.

Group members' perceptions of group interaction are related to the success in the performance of the group. Perceptions about group interaction vary in this group. It ranges from below average to above average. Although they rate group interaction as low, they explain that they are a newly-established group and that interaction is improving; for example:

'it's low but evolving and it's improving', '6 out of 10', '7 out of 10', 'above average', 'fairly successful' and 'we're doing a good job', 'we all come from different councils and because of our diversity we have strength, not necessarily how we arrive at outcomes but at least the inputs that we receive'.

The general view is that group interaction and performance will improve, although one group is encountering particular difficulties and another group is just starting up. They explain:

'...we're only just starting. I believe if the overall performance of this council in absolutely trying times and losing one of their councillors, losing a CEO and that type of thing during the year—I think their performance under that sort of pressure would have to be at least 7 out of 10.'; and

'it's hard because no one of us have ever been here before. It's new territory, it's a new era of government. People aren't used to dealing with this type of situation before'.

Members seem positive about the future of the strategy groups, for example:

'I think the success or the performance is very valued because the people who are in that group are putting their ideas and their suggestions and their dreams forward and I think you need all of them. The decisions we're going to reach at the end needs to encompass a very broad and very varied variety of issues and that's why we have the groups so that we

can access the knowledge in your head and usually nine times out of ten the answers that you get back are the same or nearly the same so it means that they're all on the same track'.

Most of the mayors, councillors and chief executive officers in this group are confident that the group will achieve its goals although it may take some time to develop those newly established groups.

Individual perceptions about how the group interacts:

The mayors, councillors and chief executive officers of two of the three councils' strategy groups indicate that they are very much united in trying to reach their goals, and the third group report a mixed approach towards unity ranging from 'very united' to 'medium level of unity'; for example:

'about 50/50. To some degree they're united but we do have an issue around a few people who are passive and don't engage in debate and when they do it's not in a strategic manner it's about thinking about their old patch. Remember we've been joined and there are ex-mayors and deputies in the boardroom.'

Regarding a question about how group members communicate about each other's responsibilities, different responses are obtained. One group indicate that they have a portfolio system where each councillor manages a specific portfolio and that communication across these portfolios is essential as they crossed areas of responsibility. To ensure communication between portfolios, two of the councils indicate that they have regular fortnightly 'Round Table' meetings with the aim of sharing information about the portfolios; they comment:

'so we make sure if there is any issues going on it gets transferred and we have another session where all the directors come in and then we two-way feed between one'.

Another group comment that apart from formal council meetings, councillors do not communicate very often, although they express the need for better communication, for example:

'we don't do much communication across portfolios in terms of our responsibilities. I think it's a bit limited there. We need to be talking. We have fortnightly councillor discussions but that's taken up with too many operational issues, talking about silly things that councillors notice or whatever, whereas we're missing the opportunity to talk and think strategically, totally missing it'.

All group members view their strategy groups as very important.

Individual perceptions about the roles and responsibilities of other group members:

The mayors, councillors and chief executive officers of two of the councils indicate that the mayor takes responsibility for error or poor performance in their strategy group. The mayor of the third council indicate that he took the responsibility, but the councillors of this council indicate that other council employees are blamed for error or poor performance. They say:

'I guess the mayor blames the CEO for everything that goes wrong, even when he does it, which to me is not good.'; 'the blame is shifted as much as possible—councillors do not want to take blame for anything, they pass the blame onto the directors'.

Different views about who the natural leader of Strategy Group Level 1 is, are offered. These views range from identifying the mayor as the leader, to self-selection as a leader, to no designated leader, to disagreement about the mayor being the leader.

Groupthink and groupshift:

To investigate groupthink and groupshift, members of this group were asked if there were certain members in the group who regularly brought in new ideas, if there were members taking the role of 'devils advocate' and how they, in general, felt about new views and different opinions within their group. The general responses to these questions are that, although there are a number of group members (ranging between one and three) bringing up new and creative ideas, these ideas are often influenced by past experience and history. One of the most

indicative perceptions of groupthink is that often the majority dominates, or an idea is seen as too much work to develop and then discarded:

‘ the thing that you run up against is this path of least resistance thing and again, we’ll stick to this because we know we can push it through the system, we don’t have to investigate this because it’s all hours and resources and a whole lot of different things’.

Although there usually are one or two councillors who question the new ideas to *‘flesh it [the new idea] out and explore both sides of the coin’*, group members perceive this as positive and as a contribution to group discussion.

Boundary spanning:

To collect data about boundary spanning, group members were asked if they applied boundary spanning in their group in terms of members sharing ideas and information across organisational boundaries. Although some members were familiar with this concept, most participants requested an explanation of the term. Regarding boundary spanning, group members agree that their group does apply boundary spanning, for instance:

‘to some degree, yes. Making use of consultants and making use of the expertise within this organisation and consulting quite widely in terms of how it should be done’;

‘we consult with other consultants and groups and probably also industry groups, getting their input into things’;

‘we try and keep a good rapport with the Chamber of Commerce, the Council of Mayors COMSEC also with USQ’.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

Another important theme emerging from the interview data is the distinction between strategic thinking and operational thinking. The mayors, councillors and chief executive officers view strategic thinking as very important in their roles in the council, but they argue that *‘it cannot be completely separated from operational thinking’*. They assume an important connection between strategic

thinking and operational thinking. For strategic thinking to be successful, they say, the *'vision needs to be attainable'* and the strategic thinkers need to understand the effect that the vision has on operational issues. Some members feel that strategic thinking and operational thinking should be part of an iterative process, for example:

'it's got to be two-way and if it's not two-way then we can't improve and if we make mistakes setting at the board level then how can we correct them if we don't get feedback from our managers at the operational level'.

This does not mean that strategic thinkers should get involved with implementing the strategies, but they need the *'constant feedback from operations to monitor their strategic thinking roles'*. They state that strategic thinking requires operational information developed by the departments—and that brings strategic thinking very close to operational thinking. The decision-makers need to be aware of *'operational difficulties and requirements'* to enable them to develop long-term strategies. The mayors, councillors and chief executive officers claim that, in some instances, the boundaries between strategic thinking and operational thinking become vague because of this. One of the councillors comments on this by saying, *'You should be looking at the strategic direction of the council not the operational stuff and that's difficult'*.

To further investigate the content of shared group-functioning mental models, the perceptions about the balance between strategic thinking and operational thinking is added as an additional category. For this category, the perceptions of each group about the balance between strategic thinking and operational thinking, for their own group and the other groups, are investigated. The results for Strategy Group Level 1 are presented in Table 4.6, Strategy Group Level 2 in Table 4.7 and Strategy Group Level 3 in Table 4.8. Table 4.9 presents a summary of the results of all three groups.

To obtain information about the perceptions of group members concerning the balance of strategic thinking and operational thinking in their own group and also the other groups, Strategy Group Level 1 members were asked to provide a ratio of strategic thinking versus operational thinking for each level based on their personal perceptions. They were asked to provide two ratios, one indicating *'how it should be'* and another reflecting the current situation in the groups. The results of the perceptions of each strategy group regarding their own group's and

other group's balances between strategic thinking and operational thinking are presented in Table 4.6 below. The results include the perceptions of what the balance should be (normative) and what it actually was (real).

Table 4.6 Perceptions of Strategy Group Level 1 regarding the balance between strategic thinking and operational thinking

Level 1 perceptions about level:	BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:				Rationale examples See remark below:
	NORMATIVE (ideal balance)		REAL (actual balance)		
	STRATEGIC THINKING	OPERATIONAL THINKING	STRATEGIC THINKING	OPERATIONAL THINKING	
1	60 – 100%	< 40%	20 – 50%	> 50%	A
2	60 – 80%	< 40%	20 – 50%	> 90%	B
3	< 10%	90 – 99%	< 10%	90%	C

Source: Developed for this study

Remark A:

Members of this group acknowledge that they should focus more on strategic thinking and explain that:

‘I believe our mayor and councillors are too operational’;

‘...people really don’t have the capabilities of that high level analytical thinking...we’re used to being hands-on and we’re used to working in a small environment where we get out and do everything and now we are expected to excel at strategic thinking, it will take a while’.

Remark B:

Members of Strategy Group Level 1 indicate that the role of the second level should include components of both strategic thinking and operational thinking and that the second level should play a more prominent role in strategic decisions, for example:

'they should remain relatively strategic, although they need to understand more operational than what we do... they have a minor role in terms of operational, their managers are doing the work'

'they really need to be part of the strategic thinking as well because they guide us in what we actually try to achieve but then they need to be able to do the operational, I mean that's their job'

Remark C:

Members of Strategy Group Level 1 indicate that the third level needs to provide input into strategy development although their main focus is on operational issues. For example:

'it is their job to implement the strategies and although we need their input into strategy that should be only a small part of their job'.

In contrast to the other councils, one council established a strategic services directorate and the Strategy Group Level 1 members of this council say that although the main purpose of this directorate was to be fully involved in strategy development, they are concerned about the performance of this group. For example:

'I would say that they should be 100% strategic but this is not happening—there are some problems with the leadership in that directorate that stops them from doing what they are supposed to do'.

'We've got some massive problems in that directorate at this point of time, we're about to lose some of our best people due to the management style of the new director...I'm not totally convinced that creating that directorate was the right move, the goals of the directorate can easily fit under planning'.

4.4.5.2 Strategy Group Level 2 (Cases 2, 5 and 8: Chief Executive Officers and Directors)

The quotes in this section are obtained directly from the transcribed interviews with the Chief Executive Officers and Directors from the three major cases (Toowoomba, Dalby and Lockyer Valley) but, due to anonymity and confidentiality assurance, individuals are not identified.

Perceptions about other strategy group members' knowledge, skills and attitudes:

The chief executive officers and directors view the knowledge and skills of their own group (the second level strategy group) as very high, but rate the knowledge and skills of the first level strategy group as limited, for example:

'staff have a very clear understanding of it (strategic thinking)' and 'we have good skills and knowledge in that area in this group';

'probably 15% of the councillors have knowledge...the rest need some serious education...they are very operationally focused and it's hard to get them to think strategically, even to the point when you think you've got them thinking strategically they're really only thinking of a strategy in terms of a specific part of the organisation rather than the high level strategic direction'; and

'some of their skills are not very good in that they're very reactionary; so they wait for something to happen and react instead of thinking strategically and be preventative or proactive'.

The Strategy Group Level 2 members view the attitude of other members in their own group as very positive and that of the members of the first level group in a less positive light, for example:

'our group's attitudes are very good and supportive...pretty positive attitude towards developing strategy', 'I'm fairly impressed with their desire to develop strategy';

'the attitudes of first level group members are not so good; they still carry this thing about their previous council—they just want to continue

to do things as they did when they were a shire and this is where you hit the barrier’.

All chief executive officers and directors rate the performance and success of their strategy group as ‘average’ to ‘below average’ and reasons for this are related to the amalgamation process, for example:

‘[performance is] not very strongly, it’s embryonic, on a scale of one to five I’d say only a three’;

‘there’s areas for improvement, I would say considering the amalgamation process and the stress and the instability that we haven’t done too bad’.

Members indicate that they are ‘fairly confident’ and ‘reasonable confident’ that they will be able to achieve their goals, but admit that it will take time and that they need to develop their skills and abilities to achieve this.

Individual perceptions about how the group interacts:

The chief executive officers and directors members in this group are in agreement that their group is not fully united in trying to reach their goals because they are a newly-established group and they indicate that they think this will improve over time, for example:

‘I’d say it is developing because we are fairly new and in fact of the group of seven, three of us have only been here for less than six months’;

‘...we are at a post-amalgamation phase and in the storming phase of group development’; and

‘if we had directors that weren’t CEOs from previous councils, if new directors came in, there would already be a more strategic thinking focus for the new organisation whereas each of those organisations had corporate plans and goals to achieve for their communities, I believe some of them are still trying to achieve those goals for their communities instead of the new higher level strategy for the region’.

The responses to the question about how group members communicate about each other's responsibilities indicate that although formal communication methods such as council meetings and executive team meetings are in place, members of this group are of the opinion that the communication methods can be improved, for example:

'we have executive meetings once a week but it's too short to do that and we have just agreed to have some days where we just talk about the issues ourselves, not in a formal or structured way with a facilitator or anything, just a day away from the office to talk without interruption';

'other than our fortnightly executive meetings we also communicate via emails and interaction with the CEO- I think it's probably an efficient way to do it but I don't think it's effective'.

One of the councils has the position of Chief Executive Officer vacant during the time of the interviews and the directors in this council report that the vacancy impacts negatively on their internal communication:

'we don't have a permanent CEO at the moment and that's limiting our ability, we really haven't had a stable position to be able to work from and as a group of seven directors, I think we're doing alright but we need a CEO. We need guidance because how do you communicate each other's responsibility, we're seven individuals, we need to be tied together, we need direction' and

'we're not falling apart but it's been pretty difficult having so many new directors in the group without a strong leader, there are some serious tensions at this stage'.

All members view this work group as extremely important and commented:

'it's probably the most important group, developing strategic direction';
'it's very important, it has a very big impact on the organisation'.

Individual perceptions about the roles and responsibilities of other group members:

Regarding the question about who takes responsibility for error or poor performance in this group, the chief executive officers and directors indicate that although each person takes responsibility for his/her own area, the chief executive officer ultimately takes the responsibility for error or poor performance. One of the group members comments that accountability in council is intricate and explain: *'I don't know if there's a lot of accountability at the moment, accountability for poor performance is low'*.

In two of the councils, the directors view the chief executive officer as the natural leader of the group, but in the other council where this position is vacant, they comment *'there isn't really...it should be the CEO but the acting CEO doesn't have natural leadership tendencies'*.

Groupthink and groupshift:

Chief executive officers and directors indicate that usually one or two people bring new ideas to their group and that these ideas are received in a positive way; for example:

'I've really been stunned with some of the things they've come up with, some of the thought processes and ideas and moving forward, it's been really good; 'they had some great ideas'.

Members identify one or two group members as 'devils advocates' and perceive this role in a positive way; they indicate that this is encouraged in their group and leads to evaluation and discussion of ideas; for example:

'what we do is debate issues, they're kicked around. Sometimes people just come up with some ridiculous type of thought and just place it on the table and we kick it around and who knows, something might come out of it.'

'it's a good crosscheck of what we are discussing'.

Boundary spanning:

Chief executive officers and directors indicate that boundary spanning does apply to their group as they make use of consultants to supplement their skills and to provide the expertise when necessary; they explain as follows:

‘we went out to the community to try to get them think strategically and tell us how they wanted to see their community long-term wise. Because we are too involved with the amalgamation we involved a professional who could create the environment and ask the right questions to make people think strategically’.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

From the interview data from the chief executive officers and the directors, the distinction between strategic thinking and operational thinking also emerges as an important category. Members of this group are involved in strategic thinking, although they are also responsible for the implementation of strategies and this dual role creates difficulties in terms of their available time. They comment that they also have to make sure that their strategic plans are consistent and aligned with what is agreed in terms of the overall strategy for the organisation for example:

‘at the director’s level, you’ve certainly got to think strategically not only in our corporate planning process but generally also in our long-term budgeting. Operationally, well, we’ve still got to do the day-to-day things and so we try and incorporate some sort of strategic process I suppose into our operational activities...you’ve still got to have your operational area running and you’ve got to have that all working properly’.

About the operational involvement of members in this group, they indicate that they are more involved with operational matters than strategic matters:

‘we probably have too much involvement in our operations’; and another: ‘I’m not sure that in local government there’s too much sitting back and thinking...we’re too operational’.

Members of this group comment on the time constraints that they experience with regard to strategic thinking. They explain that their operational responsibilities are taking up all of their available time and they find it difficult to set aside time specifically for strategic thinking, for example:

'I think the strategic thinking's important but the operational is often the urgent, to solve this problem, fix that, getting people to talk to each other, frankly...it [strategic thinking] gets pushed to the side by the immediacy and all those other things'.

Some of the chief executive officers and directors comment that councillors are not sufficiently involved in strategic thinking and that they are too much involved in operational issues; they argue that some councillors may have a short-term focus on getting re-elected for example:

'they [councillors] try to please the residents in order to get their vote during the next election and often the issues that they get involved with have nothing to do with the council's long-term strategy, sometimes it is not even in line with our long-term vision!'.

To obtain information relating to the perceptions of group members about the balance of strategic thinking and operational thinking in their own group and also the other groups, the chief executive officers and directors of Strategy Group Level 2 members were asked to provide a ratio of strategic thinking versus operational thinking for each level based on their personal perceptions. They were asked to provide two ratios: one indicating 'how it should be' and another reflecting the current situation in the groups. The results of the perceptions of each strategy group regarding their own group's and other group's balance between strategic thinking and operational thinking are presented in Table 4.7 below. The results include the perceptions of what the balance should be (normative) and what it actually was (real).

Table 4.7 Perceptions of Strategy Group Level 2 regarding the balance between strategic thinking and operational thinking

Level 2 perceptions about level:	BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:				Rationale examples See remark below:
	NORMATIVE (ideal balance)		REAL (actual balance)		
	STRATEGIC THINKING	OPERATIONAL THINKING	STRATEGIC THINKING	OPERATIONAL THINKING	
1	80 – 100%	< 20%	20 – 50%	> 50%	C
2	60 – 70%	< 40%	30 – 50%	> 50%	D
	20 - 30%	> 70%			
3	10 -20%	> 80%	10 - 20%	>80%	E

Source: Developed for this study

Remark C:

The majority of members of Strategy Group 2 believe that the mayor and councillors from Level 1 should not be operationally involved. Throughout the interviews the message from this group occurred: the first level strategy group is too involved with operational issues and they do not dedicate sufficient attention towards strategic thinking.

Remark D:

Strategy Group Level 2 judge their current focus on strategic thinking as much lower than what it should be.

Remark E:

Strategy Group Level 2 members agree that the third level should be focused primarily on operational issues, although they need to have a smaller focus on strategic issues as well.

4.4.5.3 Strategy Group Level 3 (Cases 3, 6 and 9: Directors and operational staff involved with strategy development)

The quotes in this section are obtained directly from the transcribed interviews with the directors and operational staff involved with strategy development from the three major cases (Toowoomba, Dalby and Lockyer Valley) but, due to anonymity and confidentiality assurance, individuals are not identified.

Perceptions about other strategy group members' knowledge, skills and attitudes:

The majority of directors and operational staff involved with strategy development members view the knowledge and skills related to strategy development of this group as varied, ranging from 'limited' to 'good'. They indicate that members of this group tend to act in reaction to events rather than planning ahead to prevent those events, for example:

'their skills are reasonably well developed but some of their skills are not very good in that they're very reactionary. So they wait for something to happen and react instead of being preventative';

'some have good skills and knowledge in that area but on the whole I'd say it's probably limited'.

'They describe attitudes in their group as very positive towards their involvement in strategy development, although they find it difficult to allocate sufficient time to strategy development because of heavy operational workloads; they explain:

'they've got a positive attitude towards developing it (strategy) and they can see the benefits of it. It's just their work loads I think are inhibiting',
'strategic thinking is seen as a theory exercise—I think because they've never had the resources around them to do it properly, then I think it's probably a fairly negative attitude because of these resource issues'.

Strategy Group Level 3 members, the directors and operational staff involved with strategy development from two of the three councils, rate the performance and success of their strategy group as 'fairly good', although they think that these groups are still developing, for example:

‘developing...we are all new at this and it will take a while for us to function properly as a group and to sort out all our goals and how we are going to go about achieving our goals’.

Members from the third council, however, report their performance as much lower than what the directors and operational staff from the other two councils report. They rate their performance as ‘fairly poor’ and this is related to the problems experienced within their group. The same applies when they were asked about their confidence in the group regarding achieving their goals; members of this group comment negatively on this. The strategy groups in the other councils, however, indicate that they are confident that they will be able to achieve their goals.

Individual perceptions about how the group interacts:

All of the directors and operational staff involved with strategy development indicate that they are not sufficiently united in trying to reach their goals because of group dynamics in specific groups. Different explanations for this situation are offered:

‘Because of group dynamics I would say not so good, in our (group) we have conflicting goals mainly because we are locked up in operational issues whereas we should be thinking strategically...we have trouble with our group leader at the moment, real problems...the group is fairly demotivated because of the lack of constant direction’;

‘I wouldn’t say it’s united, mainly because of the amalgamated council situation and different members of the team still have different goals. The team hasn’t got united goals as a new organisation’;

‘I think that we’re fairly un-united, I think at the moment there’s too many personal goals. They’ve all got their personal priorities’.

Group members indicate that they communicate mostly informally about each other’s responsibilities, although they also attend regular meetings as a group. Members from two councils indicate that they are satisfied with the communication in the group; but the group from the other council report serious

problems related to a specific member of their group. Due to confidentiality issues, these issues are not further explained.

Members of this group view their strategy group as very important and they described their input into the strategy development process from an operational level as having a *'very big impact on the organisation'*.

Individual perceptions about the roles and responsibilities of other group members:

Directors and operational staff involved with strategy development indicate that they all take responsibility for error or poor performance in their group; although some members think that the chief executive officer or the managers ultimately are responsible, for example:

'everyone does, really, if you stuffed it up, you fix it buddy!' and 'the CEO has the overall responsibility'.

The group identifies the directors as the natural leaders of this group.

Groupthink and groupshift:

Generally, the directors and operational staff involved with strategy development indicate that new ideas are brought to the table regularly and that those ideas are creating grounds for debate; it is encouraged by the group leaders and is viewed by all in a positive way. Again, the group from the councils that is experiencing problems within their group reports on this in a negative way. All group members indicate that they support the concept of bringing in new ideas and indicate that it should be encouraged in groups.

Members of this group identify 'devil advocates' in their groups and denote a positive attitude towards this role as evaluators of new ideas, for example:

'it counter balances the views or ideas', 'it's magic—it's forcing people to think why and why not an idea could work'.

Boundary spanning:

Directors and operational staff involved with strategy development indicate that they apply boundary spanning within their organisations and with external consultants, for example:

'we informally meet with department heads and directorate heads through our director and we pretty much deal with all units across council because of the way we do business...we rely on this information to develop our own policy so there is a distinct relationship there and it is a good relationship. Through our director we also seek the help of external consultants when required';

'we have a reasonably high level of involvement with other groups, inside and outside the organisation to help us in doing our job'.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

The distinction between strategic thinking and operational thinking emerges as an important theme in the results of Strategy Group Level 3. Some of the directors and operational staff members involved with strategic thinking express concern about the first level strategy group's strategic thinking:

'I guess that most senior people would be thinking that strategic thinking is happening in a serious and meaningful way but from what I've seen I'd say there's plenty of lip service given to the priority of strategic thinking but I would consider the real priority is somewhat lower to the day to day management'.

In one of the councils, the process of developing the corporate plan follows a slightly different path. Instead of being developed by Strategy Group Level 1 as expected, the corporate plan is prepared by a director of a department (Corporate Services) and other staff members in this department, and then it is submitted to council for approval. The task of developing the corporate plan is not a specific function of this department and the director commented:

'you actually have very little to show for the amount of time and effort if you do it right, that you put in. And so there's the perception that what are they doing over there, they're just not producing anything but what you're actually doing is putting in the time and effort to think long-term and make your bigger decisions fully informed...well, you've got nothing

to show for it except that you've got this brilliant and clear understanding about what we need to do in the future'.

To obtain information concerning the perceptions of group members about the balance of strategic thinking and operational thinking in their own group and also the other groups, Strategy Group Level 3 members, the directors and operational staff involved with strategy development, were asked to provide a ratio of strategic thinking versus operational thinking for each level based on their personal perceptions. They were asked to provide two ratios: one indicating 'how it should be' and another reflecting the current situation in the groups. The results of the perceptions of each strategy group regarding their own group's and other group's balances between strategic thinking and operational thinking are presented in Table 4.8 below. The results include the perceptions of what the balance should be (normative) and what it actually was (real).

Table 4.8 Perceptions of Strategy Group Level 3 regarding the balance between strategic thinking and operational thinking

Level 3 perceptions about level:	BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:				Rationale examples See remark below:
	NORMATIVE (ideal balance)		REAL (actual balance)		
	STRATEGIC THINKING	OPERATIONAL THINKING	STRATEGIC THINKING	OPERATIONAL THINKING	
1	80 – 100%	< 20%	20 – 50%	> 50%	F
2	50 – 80%	< 50%	20 – 40%	> 60%	G
3	40%	< 60%	<30%	>70%	H

Source: Developed for this study

Remark F:

The reason that Strategy Group Level 3 members offer for the current low level of strategic thinking in the first level group is related to the basis upon which councillors are appointed. Councillors are voted for by the community and the

votes are based on the popularity of the councillor and not necessarily specific selection criteria; for example:

'as for the operational part of council, the directors and CEO, they are being appointed for their experience, their knowledge, their understanding of strategic thinking processes whereas for councillors they are more appointed from community side';

'their accountability is being voted by the general public, so it's not how well they've really performed in the boardroom, it's how the public perceive what they've done for the; so that's probably the biggest hurdle. I mean, how does a councillor, when someone comes to them about a pothole say look, you know, you need to go and talk to the council about that but I'm here to talk about what's your view on how roads are maintained, what should our policy be, what's our priority where money should be spent?'

Remark G:

The lower strategic focus of Level 2 members is attributed to the demands created by amalgamation where the directors first have to integrate the functions and staff from the previous shires and this leads to a concentration of focus on operational matters.

Remark H:

Strategy Group Level 3 members indicate that their strategic focus is much lower than what it should be because of amalgamation issues where the integration of the previous shire councils is their first priority.

This section presents the results obtained from the interviews about the content of the mental models of group-functioning of each of the three strategy groups. These results address the third research question and these findings are discussed in Chapter 6. The following section addresses the level of agreement of group-functioning mental models and provides the results of agreement within each strategy group and also across the strategy groups.

4.4.6 RQ 4: Level of agreement of group-functioning mental models within each level and then across the levels

The results of the content of group-functioning mental models, as presented in Section 4.3.3, are now analysed within each group and across the strategy groups. In this section, the results of the four predetermined categories are presented for each strategy group separately. For the additional categories of groupthink and groupshift and boundary spanning, the results are compared across levels and presented in Table 4.5 because these are additional and secondary categories and the content of these categories shows high levels of similarity.

This analysis provides insight into the levels of agreement within each group and across the groups. First, the results of levels of agreement within each group level are presented and this is followed by an across-level analysis. The levels of agreement are coded into three categories: high level, medium level and low level. Table 4.4 provides an indication of the coding categories of the levels within groups and across groups. Summaries of the results of levels of agreement within each strategy group are presented in Table 4.12 (Groupthink and groupshift and boundary spanning), Table 4.13 (levels of agreement of group-functioning mental models) and Table 4.14 (perceptions about the balance between strategic thinking and operational thinking).

4.4.6.1 Strategy Group Level 1 (Cases 1, 4 and 7: mayors, councillors and chief executive officers)

Perceptions about other strategy group members' knowledge, skills and attitudes:

Members in this group have various perceptions about the knowledge and skills regarding strategic thinking in their group that indicate a low level of agreement within the group. In contrast to this, it is evident that there are high levels of agreement in their perceptions about group members' attitudes towards strategy development.

Individual perceptions about how the group interacts:

According to the coding criteria, it is determined that they share a high level of agreement regarding the improvement of group interaction and performance in the future.

Individual perceptions about the roles and responsibilities of other group members:

The same results as for the previous category apply. According to the coding criteria, the level of agreement is determined as medium with regard to perceptions about the roles and responsibilities of other group members.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

The interview data from members of Strategy Group Level 1 display high levels of similarity regarding the ideal and real balances between strategic thinking and operational thinking among individual group members in this group. The normative and real balances of strategic thinking versus operational thinking are presented in Table 4.9.

Table 4.9 Strategy Group Level 1 perceptions about the balance between strategic thinking and operational thinking: normative and real

Level 1 perceptions about level:	BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:			
	NORMATIVE (ideal balance)		REAL (actual balance)	
	STRATEGIC THINKING	OPERATIONAL THINKING	STRATEGIC THINKING	OPERATIONAL THINKING
1	High level	Low level	Medium to low level	High level
2	High level	Low level	Medium to low level	High level
3	Low Level	High level	Low level	High level

Source: Developed for this study

4.4.6.2 Strategy Group Level 2 (Cases 2, 5 and 8: chief executive officers and directors)

Perceptions about other strategy group members’ knowledge, skills and attitudes:

The results confirm that a high level of agreement regarding group interaction exists in this group. The results display a high level of agreement about the perceptions of other group members’ knowledge, skills and attitudes.

Individual perceptions about how the group interacts:

Overall, they view their group as extremely important in the development of strategy. It is evident that a high level of agreement about perceptions of interaction is present.

Individual perceptions about the roles and responsibilities of other group members:

The results confirm that a high level of agreement within the Strategy Group Level 2 exist regarding the roles and responsibilities of group members.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

Regarding the views of Strategy Group Level 2 members, the chief executive officers and directors, about the balance of strategic thinking and operational thinking on different strategy group levels, they indicate a shared perception about the percentages provided in Table 4.7. The results as presented in Table 4.10 are based on the shared perceptions of the chief executive officers and the directors about the balance between strategic thinking and operational thinking.

Table 4.10 Strategy Group Level 2 perceptions about the balance between strategic thinking and operational thinking: normative and real

Level 2 perceptions about level:	BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:			
	NORMATIVE (ideal balance)		REAL (actual balance)	
	STRATEGIC THINKING	OPERATIONAL THINKING	STRATEGIC THINKING	OPERATIONAL THINKING
1	High level	Low level	Low level	High level
2	Medium/medium-low level	Low/ medium-high level	Medium level	Medium level
3	Low Level	High level	Low level	High level

Source: Developed for this study

4.4.6.3 Strategy Group Level 3 (Cases 3, 6 and 9: Directors and operational staff involved with strategy development)

Section 4.3.3 indicates that members of a particular council in Strategy Group Level 3 experience specific interpersonal problems that affect group members' perceptions about the group significantly. This plays a considerable role in the perceptions of those group members across a number of the categories. The perceptions of this particular sub-group are in contrast with the perceptions of the rest of Strategy Group Level 3 members and are discounted when the level of agreement within the Strategy Group Level 3 is considered.

Perceptions about other strategy group members' knowledge, skills and attitudes:

A high level of agreement regarding these aspects is noted.

Individual perceptions about how the group interacts:

In this category, only the perceptions of two councils are taken into account as explained earlier. The results confirm that Strategy Group Level 3 shows a high level of agreement in their perceptions about interaction in their groups.

Individual perceptions about the roles and responsibilities of other group members:

There is a high level of agreement regarding the roles and responsibilities of group members in this group.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

The interview data from members of Strategy Group Level 3 display high levels of similarity regarding the ideal and real balances between strategic thinking and operational thinking among individual group members in this group. The views of members of Strategy Group Level 3 regarding the normative and real balance of strategic thinking versus operational thinking are presented in Table 4.11.

Table 4.11 Strategy Group Level 3 perceptions about the balance between strategic thinking and operational thinking: normative and real

Level 3 perceptions about level:	BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:			
	NORMATIVE (ideal balance)		REAL (actual balance)	
	STRATEGIC THINKING	OPERATIONAL THINKING	STRATEGIC THINKING	OPERATIONAL THINKING
1	High level	Low level	Medium/ low level	High level
2	Medium/ high level	Low level	Medium/ low level	High level
3	Low/ medium Level	High level	Low level	High level

Source: Developed for this study

Groupthink and groupshift and boundary spanning: (within-group comparison)

Groupthink and groupshift and boundary spanning are additional and secondary level categories and the results obtained from the data within each group are compared in Table 4.12. The content of each of these categories is discussed in Section 4.3.3. The coding categories presented in Table 4.4 are applied to indicate the level of agreement of members within each strategy group level.

Table 4.12 Comparison of Groupthink and groupshift and boundary spanning within each strategy group level

STRATEGY GROUP LEVEL	GROUPTHINK/ GROUPSHIFT	BOUNDARY SPANNING
LEVEL 1	High level of agreement	High level of agreement
LEVEL 2	High level of agreement	High level of agreement
LEVEL 3	High level of agreement	High level of agreement

The results show that within each group, a high level of agreement among group members regarding the application of groupthink and groupshift and boundary spanning exists.

4.4.7 Across level analysis

The group-functioning mental models of the three strategy group levels are now compared. This analysis is based on results from the categories within each strategy group level and the results are compared across the three levels and the coding categories as set out in Table 4.4 are applied. Table 4.13 presents a summary of the results of the across-level analysis.

Perceptions about other strategy group members' knowledge, skills and attitudes:

There are different views about the knowledge and skills available in the groups across the various levels and the results show a low level of agreement regarding this aspect among the strategy groups. However, the results regarding perceptions of the attitudes of group members about strategy development present a high level of agreement across strategy group levels.

Individual perceptions about how the group interacts:

The results confirm a medium level of agreement regarding perceptions about how the group interacts. The perceptions about group interaction that are related to the knowledge and skills available in their group are rated as 'above average to good' in Strategy Group Level 1, 'average to below average' for Strategy Group Level 2 and as 'fairly good' in Strategy Group Level 3. Across the levels members are in agreement that group interaction will improve over time.

Individual perceptions about the roles and responsibilities of other group members:

The majority of Strategy Group Level 1 members indicated that the leaders of their groups, the mayors, are responsible for error or poor performance and the minority (members from one council) indicate that other council employees are responsible for this. In contrast, members of Strategy Group Level 1 and 2 agree that they all take responsibility for error or poor performance in their group, while their group leaders, the chief executive officers and the directors respectively, are ultimately responsible. The results confirm a medium level of agreement about the roles and responsibilities of group members.

Table 4.13 provides a summary of the main results regarding the levels of agreement about perceptions of group-functioning according to the four main issues within strategy groups and across strategy groups.

Table 4.13 Summary of results: levels of agreement of shared group-functioning mental models

MAIN CATEGORIES OF GROUP-FUNCTIONING MENTAL MODELS	STRAT GROUP LEVEL 1	STRAT GROUP LEVEL 2	STRAT GROUP LEVEL 3	ACROSS-LEVELS ANALYSIS
Perceptions about other group members' knowledge, skills	Low level	High level	High level	Low level
attitudes	High level	High level	High level	High level
Perceptions about how the group interacts	Medium level	High level	High level	Medium level
Perceptions about the roles and responsibilities of other group members	Medium level	High level	High level	Medium level

Source: Developed for this study

Groupthink and groupshift:

Groups on all levels indicate that new ideas are encouraged in their groups and that the role of ‘devils advocate’ is viewed in a positive light. Therefore, a high level of agreement regarding aspects of groupthink and groupshift presents across the levels.

Boundary spanning:

All groups agree that they applied boundary spanning, therefore, a high level of agreement regarding boundary spanning presented across the levels.

Perceptions of the balance between strategic thinking and operational thinking as applicable on each of the three levels:

Overall the results show a high level of agreement of task mental models between Strategy Group Level 1, Level 2 and Level 3 with regard to their perceptions about the difference between operational and strategic thinking and that their roles required high levels of strategic thinking.

The results of normative and real balance of strategic thinking versus operational thinking across all levels are presented in Table 4.14. From this comparison, the results confirmed that:

-
- there is a **high level of agreement** across the levels about the perceptions of the *normative* balance between Strategy Group Level 1's strategic and operational thinking.
 - there is a **medium level of agreement** across the levels about the perceptions of the *real* balance between Strategy Group Level 1's strategic and operational thinking.
 - there is a **low level of agreement** across the levels about the perceptions of the *normative* balance between Strategy Group Level 2's strategic and operational thinking.
 - There is a **medium level of agreement** across the levels about the perceptions of the *real* balance between Strategy Group Level 2's strategic and operational thinking.
 - There is a **medium level of agreement** across the levels about the perceptions of the *normative balance* between Strategy Group Level 3's strategic and operational thinking.
 - There is a **high level of agreement** across the levels about the perceptions of the *real* balance between Strategy Group Level 3's strategic and operational thinking.

Table 4.14 Comparison of perceptions of Strategy Group Level 1, 2 and 3 regarding the balance between strategic thinking and operational thinking as applicable to each level

BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING ON LEVEL:	RESULTS FROM DIFFERENT STRATEGY GROUP LEVELS											
	LEVEL 1				LEVEL 2				LEVEL 3			
	NORMATIVE		REAL		NORMATIVE		REAL		NORMATIVE		REAL	
	ST	OT	ST	OT	ST	OT	ST	OT	ST	OT	ST	OT
1	H	L	M/L	H	H	L	L	H	H	L	M/L	H
2	H	L	M/L	H	M - M/L	L/M/H	M	M	M-M/H	L	M/L	H
3	L	H	L	H	L	H	L	H	L-M/L	H	L	H

Source: Developed for this study

Key:

ST = Strategic thinking

M/L = Medium to low level

OT = Operational thinking

M - M/L = Medium to Medium-low level

H = High level

M - M/H = Medium to Medium-high level

M = Medium level

L - M/L = Low to Medium-Low level

L = Low level

In this section the results from the qualitative content analysis are presented. The results are discussed in Chapter 6. In the next section, organisational documents are analysed to provide results related the four research questions.

4.5 Documentary analysis

As explained in Chapter 3, documentation serves as an important source of evidence in case study research to provide background to the case, to verify organisational details and to substantiate evidence obtained from other sources. In this study, the organisational structures of each of the councils are presented to provide background to how the councils are structured and this, in turn, provides supporting information about the strategy groups. Secondly, the visions, missions and corporate plans of the three councils were analysed, compared and linked to Research Question 1, regarding the content of task mental models of strategic thinking. Finally, the results obtained from documentation are used in triangulation with results obtained from the qualitative content analysis and Leximancer analysis presented in Chapter 5.

4.5.1 Analysis of organisational structures

The organisational structures of Toowoomba, Dalby and Lockyer Valley Regional Councils are attached as Appendices A1, A2 and A3. The overall organisational structure of these councils shows the positions of the community as an overarching body and the top structure includes the mayors and councillors as the ‘Council’. On the next level, the chief executive officers are placed, and reporting directly to this position are the directors of various departments and directorates. Table 4.15 provides a summary of the different departments and directorates in each of the councils.

The only council to have a directorate dedicated to strategy development was Toowoomba Regional Council. In Dalby Regional Council, the corporate plan was prepared by staff in the Corporate Services Department in consultation with the Chief Executive Officer and in Lockyer Valley Regional Council the corporate plan was compiled by staff of the Corporate Governance Department and Chief Executive Officer in consultation with the mayor and councillors. In both these councils input from other directors and departments were obtained and included in the proposed plan.

Table 4.15 Departments and Directorates in each of the councils: Toowoomba, Dalby and Lockyer Valley

DEPARTMENTS/ DIRECTORATES	TOOWOOMBA Regional Council	DALBY Regional Council	LOCKYER VALLEY Regional Council
	Water services		
	Engineering services	Engineering services	Engineering operations
	Planning and development services	Planning and environment services	Planning, building and environmental services
	Environmental and community services	Economic and community development	Community services
	District services	Finance and information and communication technology	Finance and information services
	Corporate services	Corporate services	Corporate governance
	Strategic services		

Source: *Developed for this study*

In the next section, the corporate plans of each of the councils are analysed according to the four predetermined categories of elements of strategic thinking.

The aim is to obtain information about how strategic thinking was applied in the development of the corporate plans.

4.5.2 Analysis of visions, missions and corporate plans

The visions, missions and corporate plans of the three cases, Toowoomba, Dalby and Lockyer Valley Regional Councils are viewed as documents presenting the outcomes of strategic thinking in their strategy development. These documents indicate the directions that the councils will undertake to achieve the visioned futures for each of the councils. The directions are expressed as strategic goals (Toowoomba Regional Council), strategic activities (Dalby Regional Council) and as goals and objectives (Lockyer Valley Regional Council). The visions and missions of the councils are presented in Table 4.16 and the key issues included in the corporate plans are presented in Table 4.17.

The visions, missions and corporate plans provide information relevant to Research Question 1, the content of shared task mental models of strategic thinking, because these documents represent the outcomes of strategic thinking. The development of these documents is based on comprehensive discussion sessions within councils where strategic thinking is applied to develop the long-term directions of each of the councils. These documents are analysed according to the pre-identified elements of strategic thinking as presented in Chapter 2.

4.5.2.1 Visions and missions

Because the focus of this study is on shared mental models within strategy groups and among strategy groups across the different levels, the data from these documents are aggregated and analysed across units. To be consistent with the analysis method applied in the qualitative content analysis, the three councils are not compared and contrasted as individual councils but, rather, an across-case approach is followed. The visions and missions of the councils are linked to the predetermined categories of strategic thinking elements. See Table 4.17.

Strategic thinking: sustainability and competitive advantage:

With regard to sustainability and competitive advantage, aspects of sustainability and economic viability are included in the visions and missions and are worded as ‘*sustainable practices*’ (Toowoomba Regional Council 2009 - 2014 Corporate Plan 2009), while competitiveness is implied with wording such as ‘*To be the Regional Council of choice*’ (Lockyer Valley Regional Council Corporate Plan 2009 - 2013 2008).

Strategic thinking: holistic view:

Aspects such as the environment, economy and governance are included in the visions and missions while a regional focus is applied ‘*Think regionally—deliver locally*’ (Dalby Regional Council 2009 - 2013 Corporate Plan 2009). This indicates a broader view of thinking holistically.

Strategic thinking: analytical and creative thinking:

To ‘*lead with good governance*’ (Toowoomba Regional Council 2009 - 2014 Corporate Plan 2009) and planning that are based on ‘consistent and informed decisions’ (Dalby Regional Council 2009 - 2013 Corporate Plan 2009) demonstrates that analytical thinking is applied. To achieve the vibrant, rural lifestyle implies that creative thinking is also viewed as an important base for strategic thinking.

Strategic thinking: long-term direction and the future:

By offering a vision for each council, they demonstrated a visualisation of the future of their organisations and indicated how they foresee the future. The visions of councils indicate that they envisage the regions to accommodate vibrant, rural living lifestyles for their residents.

Table 4.16 The visions and missions of Toowoomba, Dalby and Lockyer Valley Regional Councils

REGIONAL COUNCIL	VISION	MISSION
Toowoomba	‘The Toowoomba Regional Council area is a vibrant, culturally-diverse, environmentally rich and economically dynamic Region that embraces the future while respecting the past’ (<i>Toowoomba Regional Council 2009 - 2014 Corporate Plan 2009</i>).	‘Working with the community, Toowoomba Regional Council will lead with good governance and sustainable practices to achieve the vision’ (<i>Toowoomba Regional Council 2009 - 2014 Corporate Plan 2009</i>).
Dalby	<p>‘A proud region united by opportunity and lifestyle’. They added to their vision the following guiding principles:</p> <p>‘ As Councillors and staff of Dalby Regional Council we are committed to the following principles as a guide to our actions as representatives of our region:</p> <ul style="list-style-type: none"> • Invest in our people • Think regionally – deliver locally • Facilitate growth – manage impact • Excellence in affordable service delivery • Consistent and informed decisions’ (<i>Dalby Regional Council 2009 - 2013 Corporate Plan 2009</i>). 	No mission statement is included in their corporate plan or on the home page of the council.
Lockyer Valley	‘To be the Regional Council of Choice for vibrant rural living’ (<i>Lockyer Valley Regional Council - Organisation 2008</i>).	No mission statement is included in their corporate plan or on the home page of the council

Source: Developed for this study

4.5.2.2 Corporate plans

The corporate plans of each council are analysed according to the elements of strategic thinking and an overview of the key issues addressed in each of the councils’ corporate plans is presented in Table 4.16.

Strategic thinking: sustainability and competitive advantage:

Sustainability with regard to the environment and natural resources is prominent in the corporate plans. A primary focus on conservation and management of green spaces, land and water assets are evident. Sustainability with regard to economical growth that includes civil infrastructure, utility services and urban

planning also feature as prominent aspects of the corporate plan. Although competitive advantage is not explicitly mentioned in the corporate plans, it is implied that through '*cost effectiveness for our customers*' (Dalby Regional Council 2009 - 2013 Corporate Plan 2009) and '*efficient and effective service delivery*' (Lockyer Valley Regional Council Corporate Plan 2009 - 2013 2008), a regional area will become a residential area of choice that will lead to economic growth of the council.

Strategic thinking: holistic view:

The relationships of councils with the wider community, the natural environment and resources, business systems and technology are evident in the corporate plans. A holistic approach is taken in the strategic thinking process that precedes the development of organisational strategy. A strong community focus is evident from the corporate plans; for example:

‘The corporate planning process is an opportunity for Council to determine the future direction of the region in collaboration with key stakeholders including business, industry, community, Councillors and staff’ (Dalby Regional Council 2009 - 2013 Corporate Plan 2009).

Furthermore, the corporate plans also addresses aspects of the environment '*A highly-valued, diverse, liveable and sustainable environment*' (Toowoomba Regional Council 2009 - 2014 Corporate Plan 2009) and a focus on business systems and technology: '*Implement and manage effective business systems and accountable financial practices*' (Dalby Regional Council 2009 - 2013 Corporate Plan 2009).

Table 4.17 Key issues addressed in the corporate plans of Toowoomba, Dalby and Lockyer Valley Regional Councils

REGIONAL COUNCIL	KEY ISSUES IN THE CORPORATE PLAN	APPLICABLE TO STRATEGIC THINKING ELEMENT:			
		E1	E2	E3	E4
TOOWOOMBA	The corporate plan is structured according to goals, outcomes and strategic actions and the goals include (<i>Toowoomba Regional Council 2009 - 2014 Corporate Plan 2009</i>):				
	Community: A safe healthy and equitable community, enjoying a quality lifestyle		X	X	
	Governance: A well-governed Council respecting community values.		X	X	
	Built Environment: Well managed and integrated regional growth	X	X	X	X
	Natural Environment: A highly-valued, diverse, liveable and sustainable environment	X	X		X
	Economy: A dynamic economy providing employment and opportunity	X		X	

E1= Element 1: Thinking about sustainability and competitive advantage

E2= Element 2: Thinking holistically

E3= Element 3: Thinking analytically and creatively

E4= Element 4: Thinking long-term about the future

COUNCIL	KEY ISSUES IN THE CORPORATE PLAN	E1	E2	E3	E4
DALBY	<p>The corporate plan is structured according to eight strategic activities (<i>Dalby Regional Council 2009 - 2013 Corporate Plan 2009</i>):</p> <ul style="list-style-type: none"> • People and communities: Create an enriched and vibrant social fabric through regular interaction with our people and communities • Growth and Opportunity: Realise opportunities and build capacity for the sustainable growth of our prosperous region • Planning for Liveability: Build an effective planning solution that enhances the liveability and lifestyle of our regional communities whilst promoting sustainable development • Our Environment: Provide a healthy environment for our people today and the generations of tomorrow • Utility Services: Manage our water, sewerage and gas networks to achieve reliability, safety and cost effectiveness for our customers • Infrastructure: Build and maintain civil infrastructure to create safe and liveable communities within our region • Empower our Team: Provide organisational support and leadership to build a strong and effective regional council • Business systems and Technology: Implement and manage effective business systems and accountable financial practices to serve the needs of Council and the community. <p>Although not included in the strategic activities, two issues are highlighted as an important aspect of corporate planning; these are Community Consultation and Assessment of Regional Issues:</p> <p>‘The corporate planning process is an opportunity for Council to determine the future direction of the region in collaboration with key stakeholders including business, industry, community, Councillors and staff’.</p> <p>‘The Queensland Local Government Finance Standard requires local governments to undertake an assessment of regional issues and challenges when developing corporate plans.</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>	<p></p> <p></p> <p>X</p> <p>X</p> <p></p> <p>X</p> <p></p> <p></p> <p>X</p> <p></p> <p></p> <p>X</p> <p></p>	<p></p> <p>X</p> <p>X</p> <p></p> <p>X</p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p>X</p>	<p></p> <p>X</p> <p>X</p> <p>X</p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p>

COUNCIL	KEY ISSUES IN THE CORPORATE PLAN	E1	E2	E3	E4
LOCKYER VALLEY	<p>The corporate plan is structured according to seven primary issues (<i>Lockyer Valley Regional Council Corporate Plan 2009 - 2013 2008</i>):</p> <ul style="list-style-type: none"> • Community Lifestyle: To provide and assist in the development of services and facilities to enrich community life • Leadership: To provide dynamic, innovative leadership and active community engagement • Corporate Governance: To ensure accountable and transparent processes that enable efficient and effective service delivery • Landscape: To enrich and maintain the natural and built environment for the community's enjoyment • Sustainable Growth: To promote and manage sustainable growth and economic development throughout the region • Essential services: To maintain and develop infrastructure and core services to meet the needs of our growing community. 	X	X	X	X

Source: Developed for this study

E1= Element 1: Thinking about competitive advantage

E2= Element 2: Thinking holistically

E3= Element 3: Thinking analytically and creatively

E4= Element 4: Thinking long-term about the future

Strategic thinking: analytical and creative thinking:

Analytical and creative thinking play an important role in identifying and developing regional and urban growth opportunities. Creativity is required for inventing new and original ideas, while analysis is required for evaluating opportunities and examining new ideas. From the corporate plans, it is evident that analytical and creative thinking were important aspects in the strategy development. Regional and economic growths, as well as developing attractive community lifestyles, are included in the corporate plans, for instance:

‘Realise opportunities and build capacity for the sustainable growth of our prosperous region’ and

‘Build an effective planning solution that enhances the liveability and lifestyle of our regional communities whilst promoting sustainable development’ (Dalby Regional Council 2009 - 2013 Corporate Plan 2009).

Strategic thinking: long-term direction and the future:

The fact that the councils developed corporate plans for a period of four years (Dalby and Lockyer Valley) and five years (Toowoomba) indicates that the future and long-term directions of councils are considered and included in their strategic thinking. Indications in the corporate plan about a futuristic focus are evident in the strategic goals, such as *‘develop infrastructure and core services to meet the needs of our growing community’ (Lockyer Valley Regional Council Corporate Plan 2009 – 2013 2008)* and *‘Realise opportunities and build capacity for the sustainable growth of our prosperous region’ (Dalby Regional Council 2009 - 2013 Corporate Plan 2009).*

The results from the analysis of the visions, missions and corporate plans suggest that all four strategic thinking elements are incorporated in the development of the corporate plans. The corporate plans are the outcomes of discussions within and across strategy groups. They are developed by the strategy groups and the final plans are approved during formal council meetings where the mayors, councillors and chief executive officers endorse the corporate plans. The council members are all part of the first level strategy groups and this indicate that they

share a high level of agreement regarding the key issues addressed in the corporate plans.

4.6 Chapter summary

This chapter is the first of two chapters presenting the results of the study. Chapter 4 present the results for the qualitative content analysis and documentation analysis. The results for each research question are presented for each strategy group and intra group and across-levels analyses are conducted.

The results for the content of task mental models (research question one) are based on four predetermined elements of strategic thinking, namely, ‘thinking about sustainable competitive advantage’, ‘thinking holistically’, ‘thinking analytically and creatively’ and ‘thinking long-term about the future’. These elements are operationalised and included in the interview questions.

For research question 2, the data obtained from the first research question are analysed for each strategy group (Strategy Group Level 1, 2 and 3) internally to obtain results for the level of agreement within each group and is also analysed across the different group levels to obtain results for the level of agreement among these groups. The within-group results are summarised after the discussion of each strategy group in Section 4.4.2. A summary of results of agreement across levels is presented in Table 4.5.

For Research Question 3, the results about the content of group-functioning mental models are based on categories derived from the literature and include the perceptions of individuals about other strategy group members’ knowledge, skills and attitudes; how the group interacts; and the roles and responsibilities of other group members. The domain of content of group-functioning mental models is further defined and three additional categories are added: ‘groupthink and groupshift’, perceptions about ‘boundary spanning’ and perceptions of the ‘balance between strategic thinking and operational thinking’ as applicable to each of the three levels. These six categories are included in the interview questions to obtain data about the group-functioning mental model of individuals and groups.

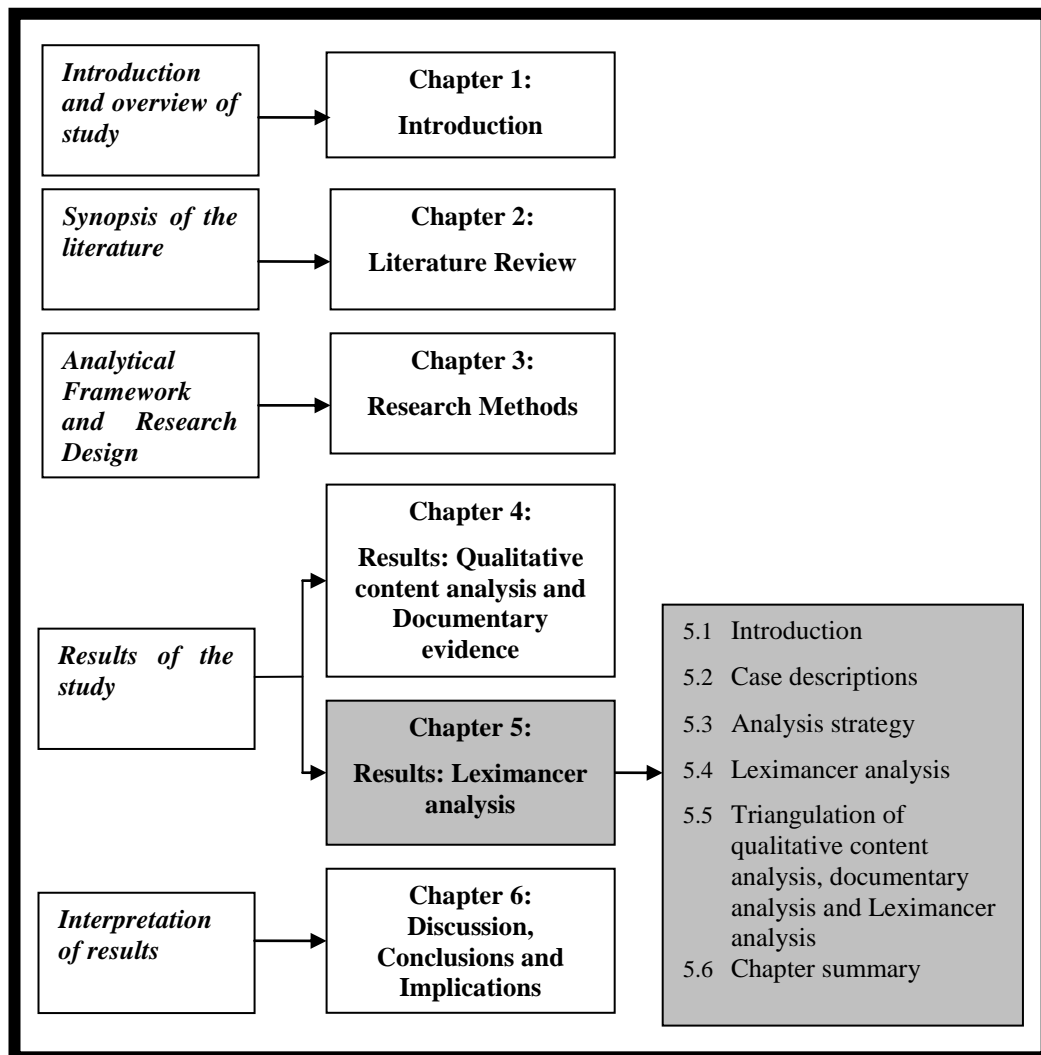
For research question 4, the level of agreement of group-functioning mental models for individuals and strategy groups is analysed. A summary of the results relating to the three main categories about the levels of agreement within each strategy group and across strategy groups is presented in Table 4.13. A summary of the results of groupthink and group shift and also boundary spanning for each of the strategy groups is presented in Table 4.12. A summary of the results of the perceptions of each of the strategy groups regarding the balance between strategic thinking and operational thinking is presented in Table 4.14.

The second method of data analysis is Documentary Analysis and in Section 4.4 the organisational structures, missions, visions and corporate plans of the three councils are analysed. Table 4.17 presents a summary of the key issues identified in the corporate plans of each of the councils and these issues are linked to the four main elements of strategic thinking. The results from that analysis show that the corporate plans are based on strategic thinking elements and, therefore, it is related to the first research question that is focused on the content of shared task mental models of strategic thinking. The Documentary Analysis provide results about the task mental models, but not the group-functioning mental models because the corporate plans, missions and visions provide the outcome of strategic thinking but do not provide indications about how the groups involved with these documents are functioning.

In the next chapter, the third method of analysis of the interview data is addressed. The Leximancer software is used to analyse the content of the transcribed interviews and provide visually displayed results from the data. The results obtained from the qualitative content analysis, documentary analysis and Leximancer are triangulated in Chapter 5. Finally, the results from these analyses are discussed in Chapter 6.

Chapter 5

Results: Leximancer analysis



5.1 Introduction

In Chapter 4 the results from the qualitative content analysis and documentary analysis are presented. Following from the research design presented in Chapter 3, the aim of this chapter, Chapter 5, is to present the results from the Leximancer analysis and to triangulate results obtained from qualitative content

analysis, documentary analysis and Leximancer analysis. These results are discussed in Chapter 6.

5.2 Case descriptions

In Chapter 4, the results of the data analysis are grouped into the three levels and presented as Strategy Group Level 1, Strategy Group Level 2 and Strategy Group Level 3. Figure 4.1 presents an outline of how these groups are established. In this chapter, the analysis is based on the same grouping as applicable to Chapter 4.

5.3 Analysis strategy

For the Leximancer analysis, the same principles regarding the analysis strategy as explained in Chapter 4 applies. The actual results are presented according to the research questions and the applicable propositions are addressed in the discussion. Table 4.1 presents a guide for the link between research questions, the propositions and the sections in which the results are presented.

To avoid duplication of Chapter 4, the Leximancer analysis is not presented in the same level of detail as the qualitative content analysis in the previous chapter. For the Leximancer analysis, the objective is *to identify and confirm the major concepts, the strength of ties between concepts and the overlap between concepts derived from the interview data*. To achieve this, maps for each of the strategy groups are produced for Research Questions 1 and 3 while the overlap of these maps is analysed for Research Questions 2 and 4 to provide analysis of the levels of agreement of task mental models and group-functioning mental models respectively. The results obtained from the Leximancer analysis are now presented.

5.4 Leximancer analysis

In this section, the results for each of the research questions are presented through a conceptual map that provides a visual representation of the concepts obtained from the data, an indication of the strength of each concept and how they are related. It is important to note that the conceptual maps developed by Leximancer are not representing mental maps but a visual display of the analysed data. The aim of conceptual analysis is to identify the presence of concepts and

their relatedness in the textual data. For each map, the settings to produce the map are specified to allow for reproducibility of the study. For content analysis, reliability is linked to stability and reproducibility (*Leximancer Manual Version 3.07* 2008) and reproducibility refers to the consistency of classification and is relevant to the generation of the concept map.

First, an initial exploratory map is presented to provide an overview of the conceptual structure of the interview data. For this map, the complete set of data is entered. Next, the research questions are individually addressed by providing maps for Research Questions 1 and 3 that are based on specific sets of data related to the research issue. For these maps, the same data sets that are used in the qualitative content analysis (Chapter 4) are applied to allow for comparison of results in triangulation. As explained previously, the maps provided for Research Questions 1 and 3 are analysed to present results about the levels of agreement for Research Questions 2 and 4. Before the maps are presented, the next section is provide information about how Leximancer maps are interpreted; this information has been obtained from the Leximancer Manual (*Leximancer Manual Version 3.07* 2008).

5.4.1 Interpretation of the maps

Leximancer maps present theme circles that provide a visual display of concepts that are contextually clustered on the map. Concepts that appear together frequently in the text will settle close together and appear as coloured circles. The colour of the theme circle provides an indication of the connectedness of its parent concept. The colours of the theme are ‘heat mapped’ (*Leximancer Manual Version 3.07* 2008 p. 67). This means that the more connected themes are indicated in the red-end of the colour spectrum, and the less-connected themes are indicated in cool colours—the light greens and blues. The location of the circles, the nearness, reflects that concepts co-occur with similar other concepts. The brightness of the label of concepts indicates its frequency of appearance in the text; the brighter the label, the more frequent the concept occurs in the text. The brightness of the connections between concepts reflects how often the two concepts co-occur closely in the text (*Leximancer Manual*

Version 3.07 2008). The results of each of the maps are discussed according to these indicators.

5.4.2 Map settings

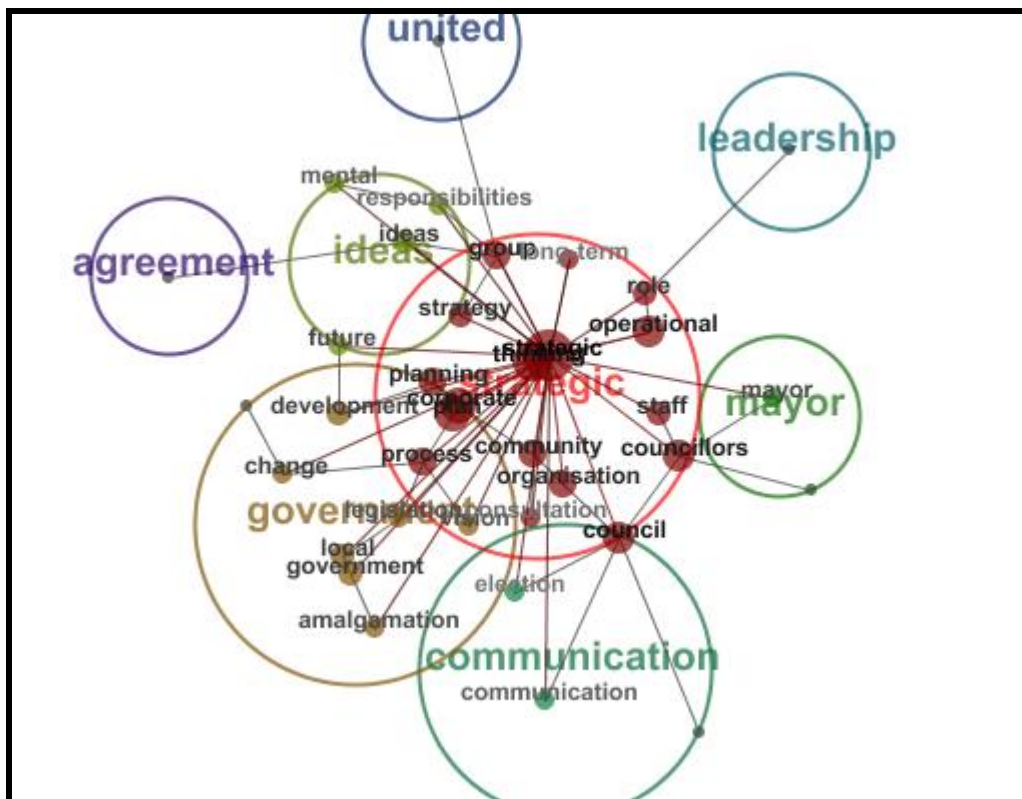
To ensure consistency in the maps, some map settings are standardised for this study. For each map the number of concepts is set to include the top fifty concepts. From the list of automatic concepts extracted from the data, some concepts are removed to exclude unwanted concepts such as day, different, doing, fact, guess, look, people, place, probably, saying, suppose, take, things, trying, whole and work. These words appear as concepts because they are frequently used in conversational speech, but are of no interest to the study. Some of the similar concepts such as plan and planning, strategic and strategically are merged to form one concept respectively because they refer to the same concept. To ensure that the map is representative of the clusters, each map is run from scratch several times. After running a map each time, the map is investigated to pick up concepts that are actually stop words that are used in the interviews but do not add value. In all maps, the concept ‘think’ is carefully monitored to ensure that the use of it as a stop word is removed from the list. The word ‘think’ is not removed from the list where it is related to ‘strategic’ as this is an important concept in the study.

For Maps 1, 2, 3 and 4 the percentage of visible concepts is set at one hundred to reveal all major concepts discovered in the text. For Maps 5, 6 and 7 the percentage is lowered to thirty percent to display a larger number of themes related to aspects of group-functioning mental models. This is necessary because at a setting of one hundred, important concepts related to group-functioning are not displayed as they are included in one or two main concepts. The percentage of theme size is set for all maps at thirty percent to reveal the important thematic clusters without cluttering the map with all possible thematic clusters. The degree of rotation slider is set to thirty percent for Map 1 to provide a better outlay of the thematic clusters, but for all the other maps no changes are made to the degree of rotation.

5.4.3 Initial exploratory map

To provide a ‘bird’s eye view’ of the overall data (*Leximancer Manual Version 3.07 2008 p. 58*), the analysis is commenced with a map of the overall results of the data. For this map, all of the interview data are entered at once to provide an overview of the main concepts in the data. Map 1 presents the overall results of the interview data.

Map 1: Overall results



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and the transcribed interview data of each study participant are entered for analysis.

Map interpretation:

Map 1 shows the concepts and the thematic circles retrieved from the data. The ranked concepts list below (Table 5.1) contains a count of text segments which are classified as containing the specific concept through the body of text. Because of the magnitude of the data, concepts with a relevance of less than twenty percent are excluded from the list. The relevance score presents the

number of occurrences of the concept as a percentage of the most frequent concept, in this case ‘strategic’.

Table 5.1 Ranked Concepts List: Map 1

Word-Like	Count	Relevance
strategic	746	100%
thinking	421	56%
council	417	56%
corporate	344	46%
operational	328	44%
councillors	328	44%
plan	324	43%
group	287	38%
community	245	33%
planning	244	33%
process	239	32%
organisation	209	28%
staff	177	24%
strategy	166	22%
role	158	21%

Source: Developed for this study

Note that the concepts list indicates frequency of individual concept occurrence, but does not indicate the concept co-occurrence which is indicated in the thematic summary list (Table 5.2). Because the Ranked Concept List and the Thematic Summary provide results related to different aspects, they are not compared.

The concepts cluster in groups on the map when there are connections between them and in this map the main theme circles are ‘strategic’, ‘government’, ‘communication’, ‘ideas’, ‘mayor’, ‘agreement’, ‘leadership’ and ‘united’. The theme circle ‘strategic’ is more connected than others and therefore displays at the red-end of the colour spectrum. In contrast, ‘agreement’, ‘leadership’ and ‘united’ are displayed in cooler colours and indicate less connections. The

thematic summary below (Table 5.2) provides the percentage of connectivity for each of the major themes.

Overall, the results from this analysis show a broad range of themes and concepts that are derived from the interview data that coincide with the overall results obtained from the qualitative content analysis. In the next sections the analyses are focused more specifically on data pertaining to specific research questions.

Table 5.2 Thematic Summary: Map 1

Theme	Connectivity
strategic	100%
government	30%
communication	21%
ideas	19%
mayor	18%
agreement	04%
leadership	03%

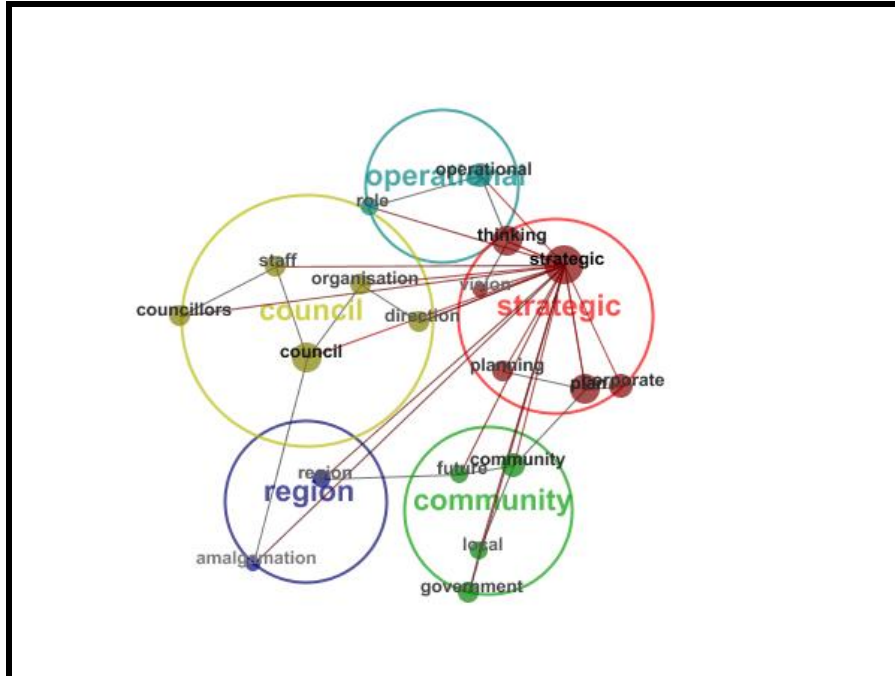
Source: Developed for this study

5.4.4 RQ 1: Content of shared task mental models in three levels of strategy groups

In this section the focus of analysis is on the content of shared mental models for each of the three strategy groups: Level 1: the Mayors, Councillors and Chief Executive Officers, Level 2: The Chief Executive Officers and the Directors of Departments and Level 3: the Director and operational staff involved with strategy development. A map is created for each of these groups to analyse the main concepts identified by each group, the themes that emerged in each group and the links between the concepts.

5.4.3.1 Strategy group Level 1 (Cases 1, 4 and 7: Mayors, Councillors and Chief Executive Officers)

Map 2: Results from interview data about the content of task mental models: Strategy Group Level 1



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and all files with transcribed interview data about RQ1 from Strategy Group Level 1 are entered for analysis. The data include the interviews with all the Mayors, Councillors and Chief Executive Officers.

Map interpretation:

As indicated previously, the brightness of the concepts is related to their frequency and reading from Map 2; the strongest concepts are strategic, council, thinking, plan, community, operational, councillors and corporate. This is confirmed in the Ranked Concepts List presented in Table 5.3 below where these concepts are ranked according to frequency of occurrence in the data. Concepts with a relevance of less than ten percent are excluded from the list.

Table 5.3 Ranked Concepts List: Map 2

Word-Like Concepts	Count	Relevance
strategic	158	100%
council	101	64%
thinking	97	61%
plan	84	53%
community	68	43%
operational	59	37%
councillors	59	37%
corporate	56	35%
organisation	40	25%
government	39	25%
staff	35	22%
future	32	20%
role	32	20%
direction	31	20%
local	25	16%
region	25	16%
vision	20	13%

Source: Developed for this study

Because the focus of the interviews is related to strategy and all interview questions are based on aspects of strategy, the top ranking concept for all groups and all maps is ‘strategic’. The frequency of the appearance of a concept is related to the importance of the concept for a specific group. In this regard, the concepts that are important to the group, those with a high percentage of relevance (more than thirty-five percent), are those associated with thinking about and planning for the community within the council. These concepts show a higher percentage of relevance in this group than concepts related to the future, direction and vision (twenty percent and less). The brightness of links connecting concepts relates to the frequency of co-occurrence of both concepts in the text and in this regard the link between ‘strategic’ and ‘government’ appears the strongest. This means that members of this group use these concepts together more frequently than any other concepts in their responses to interview questions.

From Map 2, the thematic circles that emerged from the data are ‘strategic’, ‘council’, ‘community’, ‘operational’ and ‘region’. The ‘strategic’ circle is coloured red and indicates the highest level of connections among the other circles. The positions of the ‘strategic’ circle and the ‘operational’ circle indicate a strong connection between the themes. Three thematic circles are intersected (‘operational’, ‘council’ and ‘region’) and the closer proximity of the theme circles indicates that the concepts in these circles appear in similar contexts. This implies that members of the first level strategy group discuss operational issues related to council within the context of the region. The Thematic Summary of Map 2 (Table 5.4) shows the connectivity between themes and confirms the highest level of connectivity between ‘strategic’ and ‘government’ at sixty-eight percent.

Table 5.4 Thematic Summary: Map 2

Theme	Connectivity
strategic	100%
government	68%
operational	52%
community	47%
council	21%
councillors	15%
role	10%
region	07%
amalgamation	02%

Source: Developed for this study

The concept ‘government’ is located within the ‘community’ theme circle and is also connected to ‘local’. This indicates the important connection between local government and strategy as derived from the interviews with the mayors, councillors and chief executive officers. Although the concepts of ‘operational’, ‘thinking’ and ‘strategic’ show a closer proximity than ‘strategic’ with ‘local government’, the strength of connectivity is higher between ‘strategic’ and ‘government’.

The strategic thinking concept:

To obtain detailed information about how the mayors, councillors and chief executive officers perceive strategic thinking and to link this information to the elements of strategic thinking, the concept ‘strategic thinking’ is entered to extract the relevant text for further analysis. Examples of the text extracts obtained from Leximancer for this analysis are:

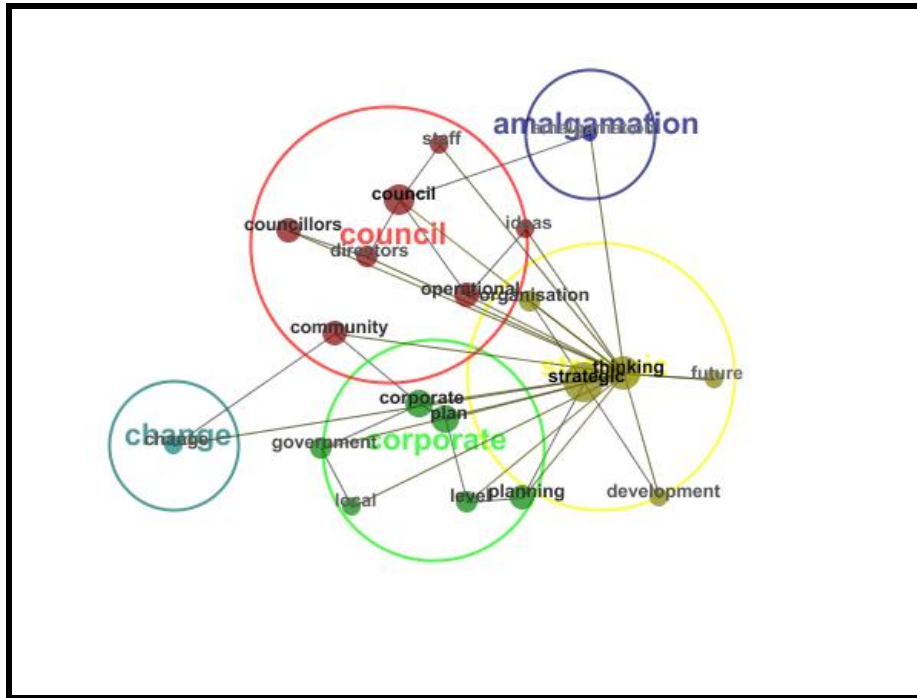
L1 *RQ1.doc/L1* *RQ1~2.html/1/1_462*
Strategic thinking is where it all starts, we must think about opportunities [3] available to ensure competitiveness [1], for example, although we are still in competition with our neighbours and while we work together and work together for the betterment of local government I would suggest, we still compete. Economic development is a major area that we compete in [1].

L1 *RQ1~2.html/1/1_535*
But my thinking is ongoing, continuous, about the strategic directions of the council and the community [4]. I don't see them being too separated, they have to be aligned, whether it be with the university of other business, the community generally [2], the strategic direction of the council and the operational strategies need to be closely aligned with community wishes and expectations[2]. Our corporate plan reflects this [5].

Each of the concepts provides text extracts similar and identical to the examples provided in Chapter 4 (see Section 4.4.1.1). The text extracts represent the general perceptions about strategic thinking on the first level strategy group and, to indicate the elements of strategic thinking that appear in the text extracts, a number is inserted in block brackets to identify the relevant element of strategic thinking. The numbers in brackets in the extracts are assigned by the researcher to refer to the elements as [1] sustainability and competitive advantage, [2] holistic view, [3] analysis and creativity and [4] long-term direction and future. Next, the results from the second level strategy group are presented.

5.4.3.2 Strategy group Level 2 (Cases 2, 5 and 8: Directors and Chief Executive Officers)

Map 3: Results from interview data about the content of task mental models: Strategy Group Level 2



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and all files with transcribed interview data about RQ1 from Strategy Group Level 2 are entered for analysis. The data include the interview data of the Chief Executive Officers and Directors of Departments. Note that the data of the Chief Executive Officers are also entered for the map of Strategy Group Level 1 (Map 2). Maps were run for the Directors without the Chief Executive Officers but because there were only three Chief Executive Officers, the maps did not show any significant differences. Map 3 provides the results of the group including the data from the Chief Executive Officers.

Map interpretation:

Map 3 shows the strongest concepts, those that occur most frequently in the interview data, as strategic, thinking, council, corporate, councillors, plan, operational, community and organisation. This is confirmed in the Ranked

Concepts List presented in Table 5.5 below where these concepts are ranked according to frequency of occurrence in the data. Concepts with a relevance of less than ten percent are excluded from the list.

Table 5.5 Ranked Concepts List: Map 3

Word-Like Concepts	Count	Relevance
strategic	138	100%
thinking	106	77%
council	105	76%
corporate	70	51%
councillors	62	45%
plan	59	43%
operational	55	40%
community	54	39%
organisation	48	35%
government	34	25%
change	31	22%
directors	30	22%
development	29	21%
staff	28	20%
local	23	17%
ideas	23	17%
future	19	14%

Source: Developed for this study

Again the top ranking concept is ‘strategic’, which is expected because all interview questions are based on aspects of strategy. The concepts that are most important and relevant to the chief executive officer and the directors of departments are those associated with thinking about how to manage the organisation, including the operational aspects relating to managing staff and providing required services to the community. The occurrence of concepts such as ‘council’ and ‘councillors’ (seventy-six and forty-five percent respectively) shows that this group view the impact of councillors and the council as important in their thinking about strategy. Among the lower-ranking concepts that are identified by this group are ‘ideas’ and ‘future’ (seventeen and fourteen percent

respectively). The concepts ‘strategic’ and ‘thinking’ are located very close to each other which indicate a close connection between strategy and thinking. The brightness of links connecting concepts indicate the frequency of co-occurrence of concepts in the text and the links between ‘strategic’ and ‘thinking’ and ‘corporate’ and ‘plan’ show links brighter than others. The interview results from chief executive officers and directors of departments present a close connection between strategic thinking and corporate planning. This means that members of this group use these concepts together more frequently than any other concepts.

From Map 3, the thematic circles that emerge from the data are ‘strategic’, ‘council’, ‘corporate’, ‘amalgamation’ and ‘change’. In this map the theme circle with the highest level of connections among the other circles is ‘council’. The concepts included in this theme circle are ‘staff’, ‘councillors’, ‘directors’, ‘operational’, ‘ideas’ and ‘community’ and the intersections and proximities of these theme circles indicate that the concepts in these circles appear in similar contexts. The Thematic Summary of Map 3 (Table 5.6) shows the connectivity between themes and confirms the highest level of connectivity between ‘strategic’ and ‘corporate’ at sixty-four percent.

Table 5.6 Thematic Summary: Map 3

Theme	Connectivity
strategic	100%
corporate	64%
council	63%
operational	49%
planning	41%
government	25%
councillors	23%
community	21%
development	09%
change	07%
future	07%
amalgamation	04%

Source: Developed for this study

Within the ‘strategic’ theme circle (coloured yellow), the concepts of ‘thinking’, ‘strategic’ and ‘future’ are in close proximity and are linked clearly, which means that these concepts co-occur frequently. The theme circle of ‘change’ is smaller, including only one concept, and is linked to the ‘strategic’ theme circle via two paths, namely, ‘community’ and ‘corporate plan’ to indicate that the concept appears in the same context in the text. The ‘amalgamation’ circle links directly to strategic thinking through the concepts of ‘council’ and ‘operational’ which means that amalgamation of the councils is related to operational tasks in the interviews.

The strategic thinking concept:

To obtain detailed information about how the chief executive officers and directors perceive strategic thinking and to link this information to the elements of strategic thinking, the concept ‘strategic thinking’ is entered to extract the relevant text for further analysis. Examples of the text extracts selected by Leximancer for this analysis are:

L2 RQ1 ~1.html/1/1_18
Yeah, so in terms of strategic thinking, I think it is about deliberate cognitive processes [3] that are aiming at some better future and processes and things that will get you there [1]. So in some ways it's not just about the processes though, it is about being able to think what a preferred future [4] might look like and you can only do that if you take into consideration all the environmental factors and what that might, but there's a certain imaginative, intuitive, creative dimension to it [3]. The outcome is provided in the corporate plan that we are developing right now [5]. And of course the impact that this will have on council and the community [2].

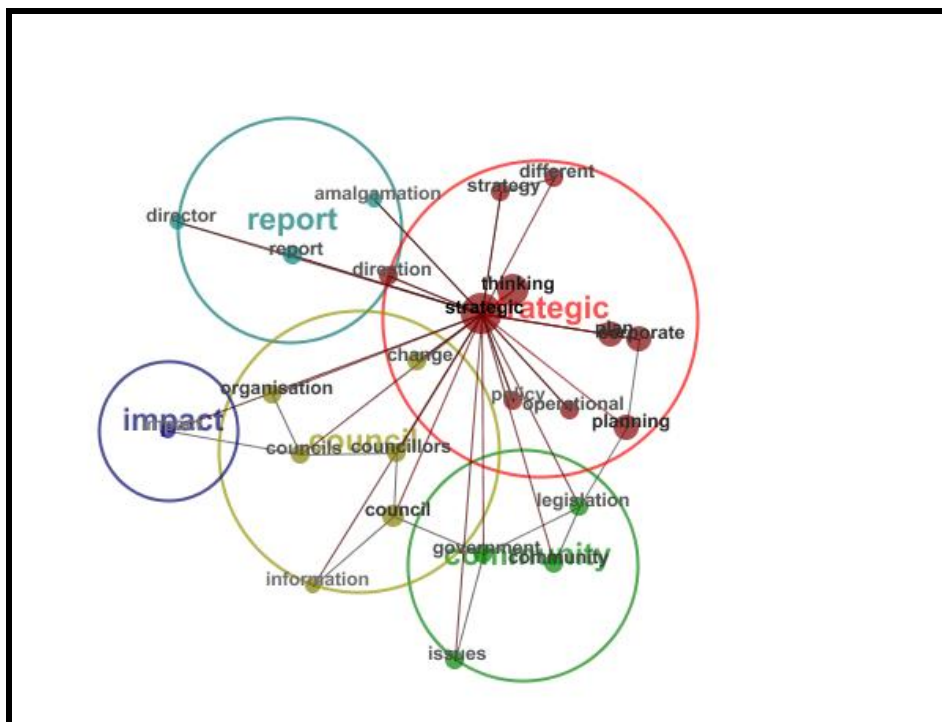
L2 RQ1 ~1.html/1/1_274
We don't have that time, we still have our operational area and we've got to have that all working properly. Strategic thinking just gets pushed to the side by the immediacy and all those other things. The amalgamation process is a good example of this [6]. The executive management team, it has been tough getting them on the strategic thinking, mainly because of the amalgamation process. The work load has been so high in just getting the day to day things right.

Each of the concepts provides text extracts similar and identical to the examples provided in Chapter 4 (see Section 4.4.1.2). The text extracts represent the general perceptions about strategic thinking on the first level strategy group and to indicate the elements of strategic thinking that appear in the text extracts, a

number is inserted in block brackets to identify the relevant element of strategic thinking. The numbers in brackets in the extracts are assigned by the researcher to refer to [1] sustainability and competitive advantage, [2] holistic view, [3] analysis and creativity, and [4] long-term direction and future. Next, the results from the third level strategy group are presented.

5.4.3.3 Strategy group Level 3 (Cases 3, 6 and 9: Directors and operational staff involved with strategy development)

Map 4: Results from interview data about the content of task mental models: Strategy Group Level 3



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and all files with transcribed interview data about RQ1 from Strategy Group Level 3 are entered for analysis. The data include the interview data of all the Directors of Departments and operational staff involved with strategy development. Note that the data of the Directors of Departments are also entered for the map of Strategy Group Level 3 (Map 3). Maps were also run previously for the operational staff involved with strategy development without the Directors of

Departments and those maps showed a high degree of similarity to the map including data from the Directors and operational staff.

Map interpretation:

Map 3 shows the strongest concepts—those that occur most frequently in the interview data—as strategic, thinking, planning, corporate and council. This is confirmed in the Ranked Concepts List presented in Table 5.7 where these concepts are ranked according to frequency of occurrence in the data. Concepts with a relevance of less than ten percent are excluded from the list.

Table 5.7 Ranked Concepts List: Map 4

Word-Like	Count	Relevance
strategic	156	100%
thinking	101	65%
planning	64	41%
corporate	52	33%
council	47	30%
organisation	36	23%
community	34	22%
strategy	34	22%
councillors	32	21%
government	26	17%
change	25	16%
operational	24	15%
report	24	15%
direction	21	13%
legislation	20	13%
director	20	13%
policy	16	10%
amalgamation	15	10%

Source: Developed for this study

Again the top ranking concept is ‘strategic’, which is expected because all interview questions are based on aspects of strategy. The concepts that are most

important and relevant to the directors and operational staff involved with strategic thinking are those associated with thinking about the corporate plan of their organisation because most of these staff members are involved with the development of the corporate plan. Among the lower-ranking concepts that are identified by this group are ‘direction’ and ‘legislation’ (both at thirteen percent). When considering that members of this group are involved with the development of the corporate plan where the direction of the organisation and legislation are key issues, the low level of relevance of these concepts is unexpected. The highest frequency of co-occurrence of concepts are those between ‘strategic’ and ‘thinking’, ‘director’, ‘plan’ and ‘corporate’ and ‘organisation’. This represents the task of members of this group; to think strategically and develop the corporate plan of the organisation, with the director leading the way.

From Map 4, the thematic circles that emerge from the data are ‘strategic’, ‘council’, ‘community’, ‘report’ and ‘impact’. In this map the theme circle with the highest level of connections is ‘strategic’; the concepts included in this theme circle are ‘thinking’, ‘policy’, ‘operational’, ‘planning’, ‘corporate’ and ‘change’ and the intersections and proximity of the theme indicate that the concepts in those circles appear in similar contexts. The Thematic Summary of Map 4 (Table 5.8) shows the connectivity between themes and confirms the highest level of connectivity between ‘strategic’ and ‘plan’ at sixty-nine percent, indicating that the main theme of the staff’s interview data is the development of the corporate plan for the organisation.

Table 5.8 Thematic Summary: Map 4

Theme	Connectivity
strategic	100%
plan	69%
community	25%
council	24%
organisation	18%
report	10%
different	08%
information	03%

Source: Developed for this study

advantage, [2] holistic view, [3] analysis and creativity, and [4] long-term direction and future.

The results obtained from the three strategy groups in this section are compared in the next section to provide results about the level of agreement of the task mental models across the three levels.

5.4.5 RQ 2: Level of agreement of task mental models within each level and then across the levels

To examine the level of agreement of task mental models within each level through a Leximancer analysis requires a map for each individual in each group to allow for comparison of those maps. This will result in thirty-eight maps to be created and analysed in this section. Because of the extent of such an analysis and the objective of using Leximancer analysis to confirm the major concepts, links and overlaps (detailed in the qualitative content analysis, Chapter 4), the analysis in this section does not include a within-level analysis. The results from the qualitative content analysis generally indicate high levels of agreement within each of the strategy groups with regard to the task mental models. The focus in this section is on an *across-levels analysis* and the maps for each level (Map 2, 3 and 4) as presented in the previous section are compared to obtain results about the levels of agreement.

Across levels analysis:

The results obtained for the task mental models of strategic thinking (Section 5.4.3) are analysed according to the map display, the Ranked Concepts Lists, the Thematic Summaries and the text abstracts related to strategic thinking. The results for each of the three strategy groups are compared and the levels of agreement between the levels are qualitatively evaluated and coded as ‘High level’, ‘Medium level’ or ‘Low level’ to be consistent to the coding categories applied in Chapter 4 (see Table 4.4). For this analysis, ‘High level’ is assigned if all three groups are in agreement. ‘Medium level’ is assigned when two out of three groups are in agreement, or when the three groups have certain concepts or themes in common although the percentages of relevance or connectivity are not similar. A ‘Low level’ is assigned when groups have completely different perspectives.

Each of the maps display a number of similar concepts such as ‘strategic’, ‘thinking’, ‘planning’, ‘community’, ‘council’, ‘councillors’, ‘operational’, ‘plan’ and ‘corporate’. These concepts, however, display differently on the maps with regard to their relevance and co-occurrence with other concepts. Table 5.9 provides a comparison of the relevance of concepts for each of the strategy groups.

Table 5.9 Comparison of Ranked Concepts and Relevance List: Maps 2, 3 and 4

MAP 2 Strategy group level 1		MAP 3 Strategy group level 2		MAP 4 Strategy group level 3	
Concepts	Relevance	Concepts	Relevance	Concepts	Relevance
strategic	100%	strategic	100%	strategic	100%
council	64%	thinking	77%	thinking	65%
thinking	61%	council	76%	planning	41%
plan	53%	corporate	51%	corporate	33%
community	43%	councillors	45%	council	30%
operational	37%	plan	43%	organisation	23%
councillors	37%	operational	40%	community	22%
corporate	35%	community	39%	strategy	22%
organisation	25%	organisation	35%	councillors	21%
government	25%	government	25%	government	17%
staff	22%	change	22%	change	16%
future	20%	directors	22%	operational	15%
role	20%	development	21%	report	15%
direction	20%	staff	20%	direction	13%
local	16%	local	17%	legislation	13%
region	16%	ideas	17%	director	13%
vision	13%	future	14%	policy	10%
amalgamation	08%	amalgamation	09%	amalgamation	10%
				information	07%

Source: Developed for this study

The green shaded areas in Table 5.9 show the concepts for each group with a relevance of thirty percent and higher. Each of the groups shows a percentage of 100 for ‘strategic’ as expected, as previously explained, because all of the interview questions are related to aspects of strategy. The concept ‘thinking’ achieves second-highest position in the ranking for group Strategy Group Levels 2 and 3 and higher relevancy scores than for Strategy Group Level 1 where this concept is positioned third. Both Strategy Group Levels 2 and 3 present ‘council’ and ‘corporate’, but the relevance score for both concepts is lower for Level 3 than for Level 2.

Strategy Group Level 1 present a high relevance score for ‘council’ where it achieves the second position in the ranked concepts list; but for ‘corporate’ they achieve a score comparable to the relevance score of Strategy Group Level 3. Overall, Strategy Group Level 2 shows the largest number of concepts with a relevance of thirty percent or more, whereas Strategy Group Level 3 presents the smallest number of these concepts. The strategy groups reveal a large number of shared concepts (those shaded green in the table) and a small number of concepts are similar only in Strategy Group Level 1 and 2 (shaded pink in the table) and also a small number of concepts similar only in Strategy Group 2 and 3 (shaded yellow in the table).

When Maps 2, 3 and 4 are visually compared, they all have a relatively large ‘strategic’ theme circle in common. The highest level of interconnection in this theme is indicated for Strategy Group Level 1 and 3. Strategy Group Level 2 shows a much lower level of interconnection in the ‘strategic’ theme circle. The thematic summaries of the maps provide detail about the connectivity of the themes that emerge from the data and Table 5.10 provides a comparison of the Thematic Summaries of the three maps.

For Strategy Group Level 1 the thematic summary indicate high percentages of connectivity for the themes ‘strategic’, ‘government’, ‘operational’ and ‘community’. The text abstracts linked to these themes in the Leximancer tool indicate that members of this group consider local government’s requirement to address the needs of their communities. The themes with high percentages of connectivity for Strategy Group Level 2 include ‘strategic’, ‘corporate’, ‘council’, ‘operational’ and ‘planning’.

Table 5.10 Comparison of Thematic Summaries: Maps 2, 3 and 4

MAP 2 Strategy group level 1		MAP 3 Strategy group level 2		MAP 4 Strategy group level 3	
Theme	Connectivity	Theme	Connectivity	Theme	Connectivity
strategic	100%	strategic	100%	strategic	100%
government	68%	corporate	64%	plan	69%
operational	52%	council	63%	community	25%
community	47%	operational	49%	council	24%
council	21%	planning	41%	organisation	18%
councillors	15%	government	25%	report	10%
role	10%	councillors	23%	different	08%
region	07%	community	21%	information	03%
amalgamation	02%	development	09%		
		change	07%		
		future	07%		
		amalgamation	04%		

Source: Developed for this study

The text abstracts for these themes indicate this group’s involvement with operational planning within the council and their focus on the corporate environment. Finally, for Strategy Group Level 3, the themes with high percentages of connectivity are ‘strategic’ and ‘plan’ that is also reflected in the text extracts where members of this group’s perceptions about strategic thinking is connected to developing the corporate plan for the councils. In comparison, the thematic summaries of each of the strategy groups reflect the main focus of their task mental models of strategic thinking and, although these summaries reflect similarity with regard to the themes, the percentages of connectivity of the themes vary. The themes that emerge in all the groups are ‘strategic’, ‘community’ and ‘council’ (shaded in green) and the themes that occur in the results of Strategy Group level 1 and 2 are ‘government’, ‘operational’, ‘councillors’ and ‘amalgamation’ (shaded in pink).

When the text abstracts related to the strategic thinking concept are compared across the three levels, the results show that the strategic thinking elements of

‘sustainable competitive advantage’, ‘holistic view’, ‘analytical and creative thinking’ and ‘long-term direction and the future’ are included in the evidence obtained from each of the three strategy groups.

A summary of the results obtained from the comparison of the three strategy groups is presented in Table 5.11. The coding criteria, as explained previously, have been applied to indicate the level of agreement between strategy groups according to the aspects of analysis.

Table 5.11 Summary of results: Leximancer analysis RQ2

ISSUES COMPARED	RESULTS	LEVEL OF AGREEMENT
MAP DISPLAY	Similar concepts, displayed differently on maps	Medium level of agreement
RANKED CONCEPTS	Similar concepts, different % of relevance	Medium level of agreement
THEMATIC SUMMARIES	Similar themes, different focuses, different % connectivity	Medium level of agreement
TEXT ABSTRACTS	Including the same elements of strategic thinking, different focuses	Medium level of agreement

Source: Developed for this study

In the next section, the content of the group-functioning mental models for each of the strategy groups is analysed using the Leximancer software.

5.4.6 RQ 3: Content of shared group-functioning mental models in three levels of strategy groups

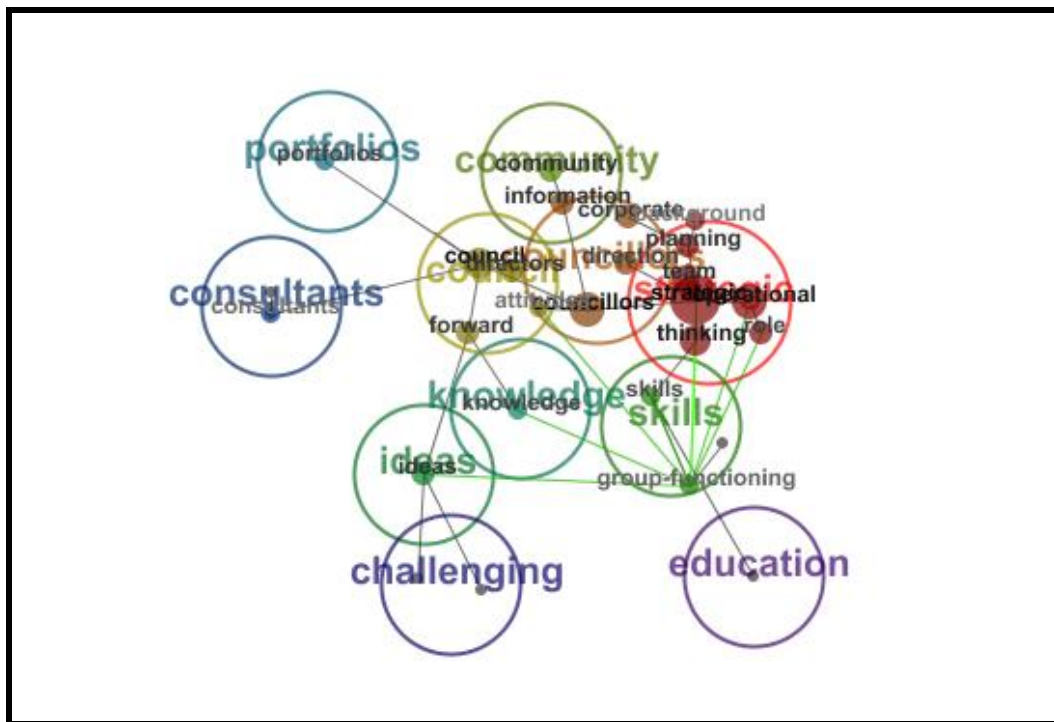
The aim of this research question is to obtain information about the shared group-functioning mental models of strategy groups and pertains to perceptions about:

- other strategy group members’ knowledge, skills and attitudes;
- how the group interacts; and
- the roles and responsibilities of other group members.

In this section Leximancer software is applied to analyse the content of shared group-functioning mental models for each of the three strategy groups: Level 1: the mayors, councillors and chief executive officers, Level 2: the chief executive officers and the directors of departments and Level 3: the director and operational staff involved with strategy development. A map is created for each of these groups to display the main concepts identified by each group, the themes that emerge in each group and the links between the concepts.

5.4.5.1 Strategy group Level 1 (Cases 1, 4 and 7: mayors, councillors and chief executive officers)

Map 5: Results from interview data about the content of group-functioning mental models: Strategy Group Level 1



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and all files with transcribed interview data about RQ3 from Strategy Group Level 1 are entered for analysis. The data include the interviews with all the Mayors, Councillors and Chief Executive Officers. For all the group-functioning mental models maps, Maps 5, 6 and 7, concepts from the list of available concepts such as attitudes, communicate, consultants, devil’s advocate, education, group-functioning, knowledge, boundary spanning, skills, attitudes, roles, and

responsibilities are added because they play an important role in perceptions about group-functioning.

Map interpretation:

As indicated previously, the brightness of the concepts is related to their frequency and, reading from Map 5, the strongest concepts are located in the ‘strategic’ and ‘council’ theme circles and these concepts are ‘strategic’, ‘council’, ‘councillors’, ‘operational’, ‘thinking’ and ‘team’. This is confirmed in the Ranked Concepts List presented in Table 5.12 where these concepts are ranked according to frequency of occurrence in the data as a proportion of the concept ‘strategic’ as top ranking concept. For this map, those concepts with a percentage of relevance of less than ten percent are not removed because among the lower-ranking concepts in this list are: ‘group-functioning’, ‘devil’s advocate’, ‘boundary spanning’, ‘attitudes’ and ‘education’. The concept ‘devil’s advocate’ relates to aspects of groupthink where respondents use this concept to explain the way in which new ideas are brought into their group. The concept ‘boundary spanning’ is addressed in the responses where participants explain that their groups are communicating with other groups within the organisation and are making use of consultants to deliver specific services to their groups.

Table 5.12 Ranked Concepts List: Map 5

Word-Like	Count	Relevance
strategic	135	100%
councillors	97	72%
council	87	64%
operational	80	59%
thinking	63	47%
team	39	39%
community	35	26%
information	33	24%
planning	32	24%
corporate	27	20%
knowledge	19	14%
portfolios	19	14%
skills	15	11%
education	4	03%

Source: Developed for this study

The concepts ‘attitudes’ and ‘education’ emerge when group members provide their perceptions about the attitudes and education of other group members. Although these concepts are ranked lowest in relation to ‘strategy’, they are important concepts related to group-functioning and they are analysed further.

The concept ‘group-functioning’ is investigated to reveal its links to other concepts. The highest level of co-occurrence of concepts in the text are those connecting ‘group-functioning’ with ‘skills’, ‘ideas’, ‘knowledge’ and ‘operational’. This represents the content of the shared group-functioning mental models where the interview questions aim at discovering the perceptions of group members regarding aspects of group-functioning such as skills, knowledge and interaction within strategy groups.

As mentioned earlier, Maps 5, 6 and 7 are set at a lower level of ‘Percentage Visible Concepts’ than the maps for task mental models (Maps 2, 3 and 4) to include a larger number of thematic circles to display themes related to aspects of group-functioning. This is necessary because at a setting of 100 percent, as for Maps 2, 3 and 4, only the major themes of ‘strategic’, ‘council’ and ‘councillors’ appear and this does not provide sufficient information about the other relevant themes. Eleven thematic circles emerge from the data and they are: ‘strategic’, ‘council’, ‘councillors’, ‘community’, ‘knowledge’, ‘skills’, ‘ideas’, ‘education’, ‘challenging’, ‘consultants’ and ‘portfolios’.

Table 5.13 Thematic Summary: Map 5

Theme	Connectivity
strategic	100%
councillors	42%
council	35%
community	06%
skills	06%
ideas	05%
knowledge	04%
portfolios	02%
consultants	02%
education	01%

Source: Developed for this study

The theme circle with the highest level of connections among the other circles is ‘strategic’ and this is expected because all the interview questions are investigating different aspects of strategy.

The concept ‘group-functioning’ is included in the ‘skills’ thematic circle and the intersections and proximity of theme circles indicate that the concepts in these circles appear in similar contexts. The Thematic Summary of Map 5 (Table 5.13) shows the connectivity between themes and confirms the highest level of connectivity between ‘strategic’ and ‘council’ at thirty-five percent. The summary shows a very low percentage (two percent) connectivity with ‘group-functioning’ but, because the focus of this analysis is on the connection between group-functioning and other concepts and not on the connection between the themes ‘strategic’ and ‘group-functioning’, this result is also expected.

Because the group-functioning of the strategy group is under investigation here, the ‘group-functioning’ concept is selected as primary concept and the links and relevance of this concept in relation to others is investigated. This provides an indication of the concepts related to group-functioning as presented in Table 5.14.

Table 5.14 Concepts related to group-functioning: Map 5

Related to Group-functioning	Likelihood
attitudes	20%
responsibilities	20%
skills	07%
knowledge	05%
role	05%
ideas	03%
thinking	03%
strategic	01%
operational	01%

Source: Developed for this study

To obtain information about the content of these concepts, text extracts related to each of the concepts are retrieved to provide direct quotes from the interview data where key words such as ‘attitudes’, ‘skills’ or ‘interaction’ co-occur with ‘group-functioning’ in key segments of text. Note that Leximancer software does not explain or summarise the concepts, but provides a count of co-

occurrence of concepts and shows the actual text segments through the text extraction. Each of the concepts provides text extracts similar and identical to the examples provided in Chapter 4 (see Section 4.4.3.1) and to avoid duplication of these text extracts, only limited examples are provided here:

L1 *RQ 3* *~1.html/1/1_1*
'They've got various levels of skills and so yeah I acknowledge all their skills but they're not all the same, they're not all thinking the same, they're not all on the same level, not the same experience or qualifications. They're very variable, and democracy delivers the people elected, particularly of the elected members, they're more variable than anywhere else. I think they need support and guidance.'

'I think everyone's got a very strong attitude to develop an organisational strategy.' *'Yes there is willingness but there's a definite lack of capability or understanding or comprehension about how.'*

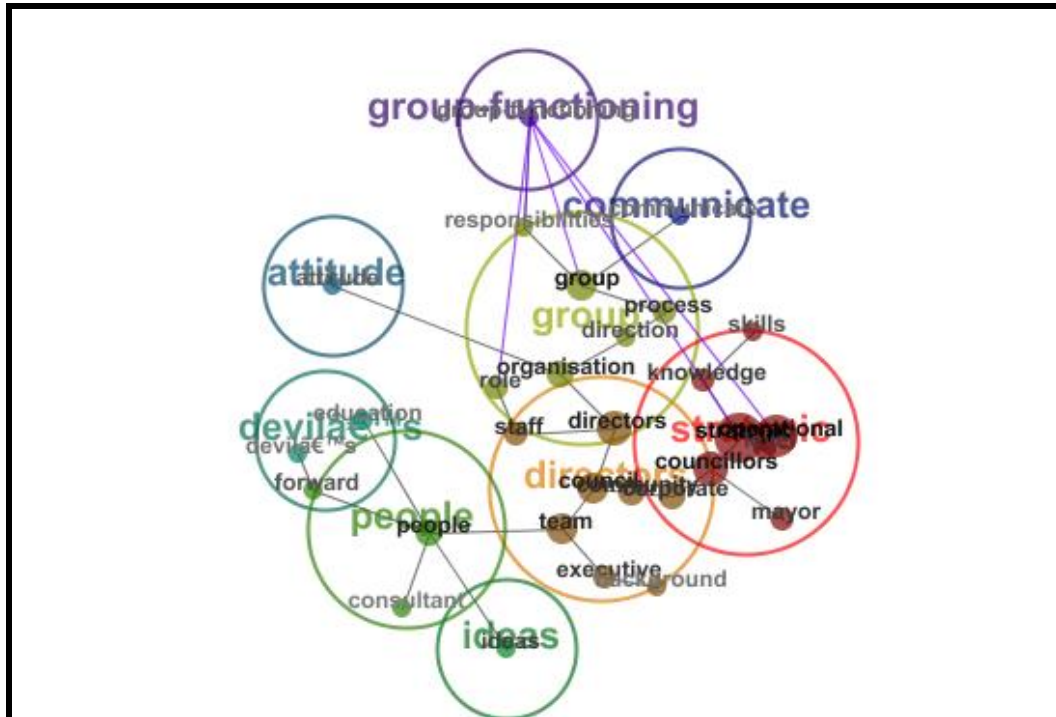
L1 *RQ 3* *~1.html/3/2/1*
'I think it's a progressive scaling down as you get further down or further up, less operational.'
'We're used to being hands on and we're used to working in a small environment where we get out and do everything and now you have to do the system of sending it down the line and the operational people do it. We should do the strategic stuff.'

The text extracts address each of the perceptions that are identified as representing the content of shared group-functioning mental models; the perceptions about other strategy group members' knowledge, skills and attitudes, group interaction, and the roles and responsibilities of group.

The results obtained from the content of group-functioning mental models for the second level strategy group are presented next.

5.5.5.5 Strategy group Level 2 (Cases 2, 5 and 8: Directors and Chief Executive Officers)

Map 6: Results from interview data about the content of group-functioning mental models: Strategy Group Level 2



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and all files with transcribed interview data about RQ3 from Strategy Group Level 2 are entered for analysis. For this map, the same concepts that are added from the available concept list in Map 5 (see Section 5.4.5.1) are also added for this map. The data include the interview data of the Chief Executive Officers and Directors of Departments. Note that the data of the Chief Executive Officers are also entered for the map of Strategy Group Level 1 (Map 5). Maps were also run for the Directors without the Chief Executive Officers but because there were only three Chief Executive Officers, those maps did not show any significant differences. Map 6 provides the results of the group including the data from the Chief Executive Officers.

Map interpretation:

In Map 6, the concepts with the highest frequency of appearance are ‘strategic’, ‘operational’, ‘councillors’, ‘directors’, ‘council’, ‘group’, ‘team’, ‘organisation’ and ‘people’. This is confirmed in the Ranked Concepts List presented in Table 5.15 where these concepts are ranked according to frequency of occurrence in the data as proportion of the concept ‘strategic’ as top ranking concept.

Table 5.15 Ranked Concepts List: Map 6

Word-Like	Count	Relevance
strategic	97	100%
operational	79	81%
group	61	63%
councillors	53	55%
directors	47	48%
council	44	45%
people	40	41%
team	37	38%
organisation	32	33%
staff	28	29%
community	24	25%
corporate	23	24%
executive	21	22%
knowledge	20	21%
mayor	19	20%
ideas	17	18%
role	14	14%
direction	12	12%
skills	10	10%
attitude	7	07%
group-functioning	5	05%
responsibilities	4	04%
devil’s advocate	4	04%
communicate	4	04%
education	4	04%

Source: Developed for this study

For this map, the concepts with a percentage of relevance of less than ten percent are not removed because among the lower-ranking concepts identified in this list are: 'group-functioning', 'devil's advocate', 'boundary spanning', 'attitudes' and 'education'. The same explanations of these terms provided for Strategy Group Level 1 apply here. Although these concepts are ranked lowest in relation to 'strategy', they are important concepts related to group-functioning and they are analysed further.

The concept 'group-functioning' is investigated to reveal its links to other concepts. The highest frequency of co-occurrence of concepts are those connecting 'group-functioning' with 'role', 'responsibilities', 'group', 'strategic' and 'operational'. These links show that members of this group, the chief executive offices and directors of departments, frequently use the concepts together in their responses to interview questions.

Nine thematic circles emerge from the data and they are: 'strategic', 'directors', 'group', 'people', 'attitude', 'group-functioning', 'communicate', 'ideas' and 'devils' advocate'. In this map the theme circle with the highest level of connections among the other circles is 'strategic' followed by 'directors'. Again, this is expected because the interview questions investigate different aspects of strategy and members of this group are mostly directors of departments and the questions focus on group-functioning within this group. The intersections and proximities of the thematic circles 'strategic', 'directors', 'group', 'communicate' and 'people' indicate that the concepts in these circles appear in similar contexts. The Thematic Summary of Map 6 (Table 5.16) shows the connectivity between themes and confirms the highest level of connectivity between 'strategic' and 'directors' at seventy-eight percent. The summary shows a very low percentage of connectivity with themes associated to group functioning such as 'attitude' and 'communicate' (one percent).

Table 5.16 Thematic Summary: Map 6

Theme	Connectivity
strategic	100%
directors	78%
group	35%
people	11%
role	05%
ideas	04%
responsibilities	02%
attitude	01%
communicate	01%

Source: Developed for this study

Because the group-functioning of the strategy group is under investigation, the same method is followed as for the Strategy Group Level 1 analysis. The ‘group-functioning’ concept is selected as primary concept and the links and relevance of this concept in relation to others are investigated. This provides an indication of the concepts related to group-functioning as presented in Table 5.17.

Table 5.17 Concepts related to Group-functioning: Map 6

Related to Group-functioning	Likelihood
responsibilities	25%
role	07%
group	02%
operational	01%
strategic	01%

Source: Developed for this study

To obtain information about the content of these concepts, text extracts related to each of the concepts are retrieved. Each of the concepts provides text extracts similar and identical to the examples provided in Chapter 4 (see Section 4.4.3.2) and, to avoid duplication of these text extracts, only limited examples of the text extracts are presented:

L2

RQ 3

~1.html 3/2/1

'I would say that generally we have high levels of skills and knowledge in this group because all our Directors have been CEO's of the previous smaller councils and they have years of management and leadership experience.'

'I think that our group has done reasonably well because of the skills and knowledge that the individuals have.'

'Everyone has a great attitude towards the process and towards getting the right things done.'

L2

RQ 3

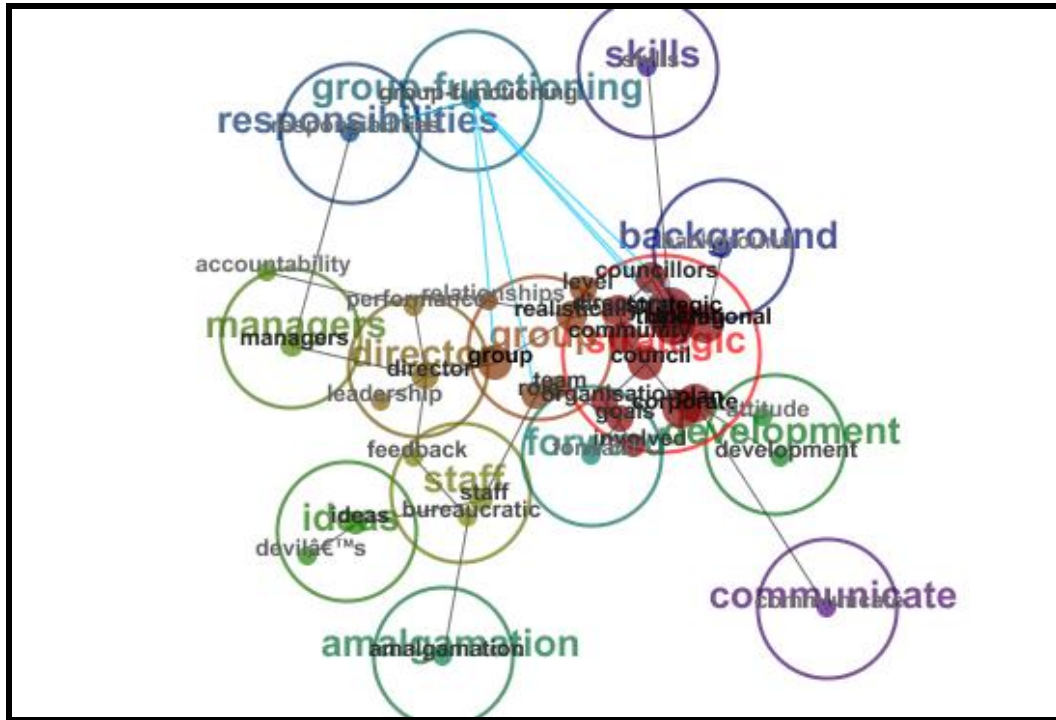
~1.html 3/2/3

'We have both that strategic role as a group and we have the operational responsibilities as director of a particular department, so there's that dichotomy it would change from time to time because at the outset of the organisation, it's critical and probably a larger percentage of the time should be spent in strategic thinking and putting strategic plans into place and then the responsibility moves from that to operational which means implementing, ensuring that operationally, you are reflecting an alignment with your strategic objectives. So it would change, I don't think you could actually say there has to be a certain percentage in a healthy organisation, it's variable.'

The text extracts address the perceptions that represent the content of shared group-functioning mental models; the perceptions about other strategy group members' knowledge, skills and attitudes, group interaction, and roles and responsibilities of group. The results from the content of group-functioning mental models for the third level strategy group are presented next.

5.5.5.6 Strategy group Level 3 (Cases 3, 6 and 9: Directors and operational staff involved with strategy development)

Map 7: Results from interview data about the content of group-functioning mental models: Strategy Group Level 3



Map settings:

For this map, the standardised settings indicated in Section 5.4.2 are applied and all files with transcribed interview data about RQ3 from Strategy Group Level 3 are submitted for analysis. For this map, the same concepts that are added from the available concept list in Map 5 (see Section 5.4.5.1) are also added for this map. The data include the interview data of all the Directors of Departments and operational staff involved with strategy development. Note that the data of the Directors of Departments are also entered for the map of Strategy Group Level 3 (Map 6). Maps were also run for the operational staff involved with strategy development without the Directors of Departments and those maps showed a high degree of similarity to the map including data from the Directors and operational staff.

Map interpretation:

Map 7 displays the most frequently occurring concepts as ‘strategic’, ‘thinking’, ‘corporate’, ‘plan’, ‘operational’, ‘council’, ‘group’, ‘directors’, ‘councillors’, ‘realistic’, ‘communicate’ and ‘goals’. This is confirmed in the Ranked Concepts List presented in Table 5.18 where these concepts are ranked according to frequency of occurrence in the data as a proportion of the concept ‘strategic’ as top ranking concept. For this map, the concepts with a percentage of relevance of less than ten percent are not removed because among the lower-ranking concepts in this list are: ‘skills’, ‘devil’s advocate’, ‘responsibilities’, ‘attitudes’ and ‘accountabilities’. The same explanations of these terms provided for Strategy Group Level 1 apply here. Although these concepts are ranked lowest in relation to ‘strategy’, they are important concepts related to group-functioning and they are analysed further.

Table 5.18 Ranked Concepts List: Map 7

Word-Like	Count	Relevance
strategic	47	100%
group	40	85%
corporate	35	74%
operational	35	74%
thinking	31	66%
plan	31	66%
council	27	57%
community	23	49%
councillors	19	40%
realistically	18	38%
managers	18	38%
directors	16	34%
director	16	34%
Goals	15	32%
organisation	15	32%
level	14	30%
Ideas	14	30%
amalgamation	13	28%

Word-Like	Count	Relevance
role	12	26%
team	12	26%
staff	10	21%
development	9	19%
bureaucratic	7	15%
feedback	5	11%
group-functioning	5	11%
performance	4	09%
leadership	4	09%
devil's advocate	4	09%
relationships	3	06%
forward	3	06%
attitude	3	06%
responsibilities	3	06%
accountability	3	06%
Skills	3	06%
communicate	3	06%

Source: Developed for this study

The concept 'group-functioning' is investigated to reveal its links to other concepts. The highest frequency of co-occurrence of concepts are those connecting 'group-functioning' with 'role', 'thinking', 'group', 'strategic' and 'operational'. These links show that members of this group, the directors and staff members involved with strategy development, frequently use the concepts together in their responses to interview questions.

Fourteen smaller size thematic circles emerge from the data and they are: 'strategic', 'group', 'forward', 'development', 'background', 'directors', 'staff', 'managers', 'ideas', 'amalgamation', 'communication', 'response', 'group-functioning' and 'skills'. In this map the theme circle with the highest level of connections among the other circles is 'strategic' followed by 'group'. Again, this is expected because all the interview questions are investigating different aspects of strategy, the members of this group are mostly staff members involved with developing the corporate plan and the questions focus on group-functioning

within this group. The intersections and proximities of the thematic circles ‘strategic’, ‘group’, ‘forward’, ‘background’, ‘development’ and ‘directors’ indicate that the concepts in these circles appear in similar contexts. The ‘forward’ theme, according to the text extracts linked to this theme, refer to the capacity for this group to continue with their task, receiving approval from the councillors and mayors for the corporate plan that they are developing. The theme ‘background’ refer to the background of strategy group members in terms of their experiences, skills and knowledge that has an impact on how the group functions. The theme circles are located close to each other and the closer proximity indicates that the concepts in these circles appear in similar contexts. The Thematic Summary of Map 7 (Table 5.19) shows the connectivity between themes and confirms the highest level of connectivity between ‘strategic’ and ‘group’ at twenty-seven percent. The summary shows a very low percentage of connectivity with all other themes, less than ten percent.

Table 5.19 Thematic Summary: Map 7

Theme	Connectivity
strategic	100%
Group	27%
Director	06%
Staff	05%
managers	03%
Ideas	03%
development	02%
amalgamation	02%
Forward	01%
group-functioning	01%
responsibilities	00%
background	00%
Skills	00%
communicate	00%

Source: Developed for this study

Because the group-functioning of the strategy group is under investigation here, the same method is followed as for the Strategy Group Level 1 and 2 analyses.

The ‘group-functioning’ concept is selected as primary concept and the links and relevance of this concept in relation to others are investigated. This provides an indication of the concepts related to group-functioning as presented in Table 5.20.

Table 5.20 Concepts related to Group-functioning: Map 7

Related to Group-functioning	Likelihood
responsibilities	33%
Role	08%
thinking	03%
operational	03%
Group	03%
strategic	02%

Source: Developed for this study

Because Leximancer software does not explain concepts, but only provides a count of co-occurrence of concepts, text extracts related to each of the concepts are retrieved. Each of the concepts provides text extracts similar and identical to the examples provided in Chapter 4 (see Section 4.4.3.3) and to avoid duplication of these text extracts, only limited examples are provided here:

L3 RQ 3 ~1.html3/3/1
‘I think they have reasonable skills, providing those skills are managed and directed appropriately. I think the group has a mixture of good strategic thinkers and other members who are very operational minded.’
‘It depends, I suppose, how they’re led through the process but I think that they all, if they’re given the right direction, not necessarily direction but if they can be given the latitude to think then they will do well.’
‘I think they’ve got a positive attitude towards developing it and they can see the benefits of it. It’s just their work loads I think are inhibiting.’

L3 RQ 3 ~1.html3/3/3
‘We are expected to apply a much higher level of strategic thinking in our group than what we currently do because we are so swamped with integrating the businesses of the shire councils but we are certainly aiming at decreasing our operational approach to follow a more strategic one.’

The text extracts address each of the perceptions that represent the content of shared group-functioning mental models; the perceptions about other strategy

group members' knowledge, skills and attitudes, group interaction, roles and responsibilities of group members and how the group perceives group interaction and knowledge and skills available in the group. The next section provides the results of the level of agreement among strategy groups regarding the content of the group-functioning mental models.

5.5.5.7 RQ 4: Level of agreement of group-functioning mental models within each level and then across the levels

To examine the level of agreement of group-functioning mental models *within* each level through a Leximancer analysis requires a map for each individual in each group to allow for comparison of those maps. As explained in Section 5.4.4 where the results of the level of agreement of task mental models were presented, this will result in thirty-eight maps to be created and analysed in this section. Because of the extent of such an analysis and the objective of using Leximancer analysis to confirm the major concepts, links and overlaps (detailed in Chapter 4 the qualitative content analysis); the analysis in this section does not include a within-level analysis. The results from the qualitative content analysis (Chapter 4) generally indicate high levels of agreement within each of the strategy groups with regard to the task mental models. The focus in this section is on an across-levels analysis; the maps for each level (Map 5, 6 and 7), as presented in the previous section, are compared to obtain results about the levels of agreement.

Across levels analysis:

The results obtained for the group-functioning mental models of strategic thinking (Section 5.4.4) are analysed according to the map display, the ranked concepts lists, the thematic summaries, concepts related to group-functioning and the text abstracts related to strategic thinking. The results for each of the three strategy groups are compared and the levels of agreement between the levels are qualitatively evaluated and coded as 'High level', 'Medium level' or 'Low level' to be consistent with the coding categories applied in Chapter 4 (see Table 4.4). For this analysis, 'High level' is assigned if all three groups are in agreement. 'Medium level' is assigned when two out of three groups are in agreement or when the three groups have certain concepts or themes in common although the percentages of relevance or connectivity are not similar. A 'Low level' is

assigned when groups have very low levels of similarity or completely different perspectives.

Maps 5, 6 and 7 display a number of similar concepts most frequently appearing in the texts such as ‘strategic’, ‘council’, ‘councillors’, ‘operational’, ‘plan’ and ‘corporate’. These concepts, however, display differently on the maps with regard to their relevance and co-occurrence with other concepts. Table 5.21 provides a comparison of the relevance of concepts for each of the strategy groups.

Table 5.21 Comparison of Ranked Concepts List: Maps 5, 6 and 7

MAP 5		MAP 6		MAP 7	
Strategy group level 1		Strategy group level 2		Strategy group level 3	
Concepts	Relevance	Concepts	Relevance	Concepts	Relevance
strategic	100%	strategic	100%	strategic	100%
councillors	72%	operational	81%	group	85%
council	64%	group	63%	corporate	74%
operational	59%	councillors	55%	operational	74%
thinking	47%	directors	48%	thinking	66%
team	39%	council	45%	plan	66%
community	26%	people	41%	council	57%
information	24%	team	38%	community	49%
planning	24%	organisation	33%	councillors	40%
corporate	20%	staff	29%	realistically	38%
knowledge	14%	process	27%	managers	38%
portfolios	14%	community	25%	directors	34%
skills	11%	corporate	24%	director	34%
group-functioning	06%	executive	22%	goals	32%
consultants	04%	knowledge	21%	organisation	32%
devil’s advocate	04%	mayor	20%	level	30%
boundary spanning	04%	level	18%	ideas	30%
attitudes	04%	ideas	18%	amalgamation	28%
education	03%	role	14%	role	26%

MAP 5 Strategy group level 1		MAP 6 Strategy group level 2		MAP 7 Strategy group level 3	
Concepts	Relevance	Concepts	Relevance	Concepts	Relevance
		direction	12%	team	26%
		skills	10%	staff	21%
		forward	09%	development	19%
		attitude	07%	bureaucratic	15%
		group- functioning	05%	feedback	11%
		responsibilities	04%	group- functioning	11%
		devil's advocate	04%	performance	09%
		communicate	04%	leadership	09%
		education	04%	devil's advocate	09%
				relationships	06%
				forward	06%
				attitude	06%
				responsibilities	06%
				accountability	06%
				skills	06%
				communicate	06%

Source: Developed for this study

Each of the groups show a percentage of 100 for 'strategic' and this is expected, as previously explained, because all of the interview questions are related to aspects of strategy. Concepts shared among all three strategy groups are shaded in green. The concepts shared only by Strategy Group Level 1 and 2 are shaded in pink; and those shared by Strategy Group Level 2 and 3 are shaded yellow. The highest number of concepts shared is those that appear in all three strategy groups (green). The second highest number of concepts shared is those shared by Strategy Group Level 2 and 3 (yellow) and the lowest number of concepts shared is those between Strategy Group Level 1 and 2 (pink). The concepts related to group-functioning such as 'attitudes', 'skills', 'responsibilities' and 'devil's

advocate’ show low relevance to the ‘strategic’ concept and ,therefore, these concepts are linked to the concept of ‘group-functioning’ later in this chapter.

When Maps 5, 6 and 7 are visually compared, they all show the ‘strategic’ thematic circle in red, indicating the highest level of interconnection in the theme. Map 5 (Strategy Group Level 1) produce eleven thematic circles, Map 6 (Strategy Group Level 2) produce nine and Map 7 (Strategy Group Level 3) produce fourteen thematic circles. The thematic summaries of the maps provide detail about the connectivity of the themes that emerge from the data and Table 5.22 provides a comparison of the Thematic Summaries of the three maps.

Table 5.22 Comparison of Thematic Summaries and Connectivity: Maps 5, 6 and 7

MAP 5		MAP 6		MAP 7	
Strategy group level 1		Strategy group level 2		Strategy group level 3	
Theme	Connectivity	Theme	Connectivity	Theme	Connectivity
strategic	100%	strategic	100%	strategic	100%
councillors	42%	directors	78%	group	27%
council	35%	group	35%	director	06%
community	06%	people	11%	staff	05%
skills	06%	role	05%	managers	03%
ideas	05%	ideas	04%	ideas	03%
knowledge	04%	responsibilities	02%	development	02%
portfolios	02%	attitude	01%	amalgamation	02%
consultants	02%	communicate	01%	forward	01%
challenging	01%			group-functioning	01%
education	01%			responsibilities	00%
				background	00%
				skills	00%
				communicate	00%

Source: Developed for this study

In this comparison between the thematic summaries of the three strategy groups, only two themes emerge in all three groups: ‘strategy’ and ‘ideas’ (shaded in

green). When Strategy Group Level 2 results are compared to Strategy Group Level 3, another three themes are shared: ‘directors’, ‘group’ and ‘responsibilities’, shaded in yellow. Because the group-functioning of the strategy group is investigated here, the results from the related group-functioning concepts for Strategy Group Level 1, 2 and 3 are compared. This comparison is presented in Table 5.23.

Table 5.23 Comparisons of Concepts related to Group-functioning: Maps 5, 6 & 7

MAP 5 Strategy group level 1		MAP 6 Strategy group level 2		MAP 7 Strategy group level 3	
Related to Group- functioning	Likelihood	Related to Group- functioning	Likelihood	Related to Group- functioning	Likelihood
attitudes	20%	responsibilities	25%	responsibilities	33%
responsibilities	20%	role	07%	role	08%
skills	07%	group	02%	thinking	03%
knowledge	05%	operational	01%	operational	03%
role	05%	strategic	01%	group	03%
ideas	03%			strategic	02%
thinking	03%				
strategic	01%				
operational	01%				

Source: Developed for this study

The comparison of concepts related to group-functioning shows the similarities in all three groups—shaded in green. They include ‘responsibilities’, ‘role’, ‘strategic’ and ‘operational’. The concept ‘group’ appears in the results of both Strategy Group Level 2 and 3 and is shaded in yellow. The concept ‘thinking’ appears in both Strategy Group Level 1 and 3 and is shaded in pink.

When the text extracts related to the concepts related to group-functioning that appeared in all three groups (‘responsibilities’, ‘role’, ‘strategic’ and ‘operational’) are analysed across the three levels, the results show that these concepts address each of the perceptions previously identified as representing the

content of shared group-functioning mental models; the perceptions about other strategy group members' knowledge, skills and attitudes, group interaction, and the roles and responsibilities of group. A summary of the results of the analysis of the text extracts of the three strategy groups is presented in Table 5.24. The coding criteria, as explained previously, are applied to indicate the level of agreement between strategy groups according to the aspects of analysis.

Table 5.24 Summary of results: Leximancer analysis RQ4

ISSUES COMPARED	RESULTS	LEVEL OF AGREEMENT
MAP DISPLAY	Similar concepts , displayed differently on maps in terms of relevance and co-occurrence	Medium level of agreement
RANKED CONCEPTS	High number of similar concepts between all three strategy groups, different % of relevance	Medium level of agreement
THEMATIC SUMMARIES	Only 2 similar themes, different focuses, different % connectivity	Low level of agreement
CONCEPTS RELATED TO GROUP-FUNCTIONING	Some similar concepts between all three strategy groups, different % of likelihood	Medium level of agreement
TEXT ABSTRACTS	Similarity regarding the issues among the three groups, although perspectives about the issues are not similar in all cases.	Medium level of agreement

Source: Developed for this study

This concludes the Leximancer analysis and. in the next section, the results from the three methods of analysis are triangulated.

5.5 Triangulation of Leximancer analysis, content analysis and documentary evidence

In Chapter 4 the results of the qualitative content analysis and the documentary analysis are presented. In the first part of this chapter the results of the Leximancer analysis are presented. In this section, the results obtained from different analysis methodologies are triangulated to increase the interpretability and validity of the results. The objective of triangulation in this study is to explore the results from various methodological perspectives. Triangulation is a method to cross-check the data to search for regularities in the data (O'Donoghue & Punch 2003). One of the criticisms of triangulation of data obtained from different methods of analysis is that it cannot be unmistakably compared and regarded as equivalent in answering the research question (Denzin 1989). Because the triangulation for this study aims at providing a more detailed representation of the rich and complex results, it is used to compare results to seek for similarities and to integrate the results obtained from different analysis methods. The results for each of the research questions are now presented.

5.5.1 RQ 1: Content of shared task mental models in three levels of strategy groups

Through the qualitative content analysis (Chapter 4), specific elements of strategic thinking are identified and the results for each of the strategy groups regarding each of these elements are presented. The results of this analysis are presented in Table 5.25. A quantitative content analysis of the results of a scenario question in the interview was conducted and provided results for each of the strategy groups regarding the elements. These results are also presented in Table 5.25. Furthermore, the results from Leximancer analysis and documentary analysis for each strategy group are also presented in Table 5.25. For these two methods, the results are not presented for each element separately, but inclusive for all elements.

The qualitative content analysis provides information about the content of the task mental models for each of the strategy groups. The main findings are presented in Table 5.25. These findings are based on the responses that members of the groups provided for the research question. The results indicate that the four

pre-identified elements of strategic thinking, namely ‘sustainability and competitive advantage’, ‘holistic view’, ‘analytical and creative thinking’ and ‘thinking long-term about the future’ are addressed in the responses of all three strategy groups. For the quantitative content analysis, the interview includes a scenario exercise where participants have to apply strategic thinking in a practical setting to provide results of their application of strategic thinking skills. This provides results for each of the strategy groups about each of the elements. When the results of these two methods are compared, it shows that although all groups include all the elements in their responses to how they understood strategic thinking, they achieve different results in the practical application of strategic thinking in a scenario situation. For instance, the second level strategy group performed on average better than the first level strategy group in this exercise.

For another perspective of the results, the Leximancer analysis provides information about the frequency of occurrence and co-occurrence of concepts within the interview data for each strategy group. For Research Question 1, the most frequently occurring concepts that appear in the interview data of all three strategy groups are identified in Table 5.9 and include concepts such as ‘strategic’, ‘thinking’, ‘council’, ‘corporate’ and ‘councillors’. The specific concepts for each of the strategy groups are also presented in Table 5.25. The co-occurrence of concepts is displayed in the thematic circles that are heat-coloured to show the higher-connected theme circles in the red end of the colour spectrum. The thematic circles that appear in each of the strategy groups are ‘strategic’, ‘community’ and ‘council’. Leximancer provide the text segments for the concepts and themes to allow the user to read the text that include the concept to explain the context of the concept. From these text extracts, elements of strategic thinking are recognised and this concurs with the set of elements identified in the qualitative content analysis. Therefore, the Leximancer analysis confirms the results from the qualitative content analysis.

The documentary analysis addresses the visions, missions and corporate plans of the three councils and the results are presented in Section 4.5.2. The documentary analysis provides evidence that the elements of strategic thinking,

namely, ‘sustainability and competitive advantage’, ‘holistic view’, ‘analytical and creative thinking’ and ‘thinking long-term about the future’ are employed by strategy groups of the councils. The documentary analysis confirms the strategic thinking elements that emerge in both the qualitative content analysis and the Leximancer analysis.

To summarise, the methods applied to analyse the interview data related to Research Question 1 confirm the four elements of strategic thinking from different methodological perspectives and is discussed in detail in Chapter 6. Table 5.25 follows and, in the next section, the results obtained for Research Question 2 are triangulated.

Table 5.25 Comparison of results related to Research Question 1

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	DOCUMENTARY ANALYSIS	REFERENCE
SUSTAINABILITY AND COMPETITIVE ADVANTAGE	L1: Identified strategic thinking as a very important issue and linked sustainability and competitive advantage to strategic thinking	<p><u>This element achieved the highest score in the overall results for elements</u></p> L1: This group achieved second highest score for application of this element in strategic thinking in the scenario exercise	STRATEGY GROUP LEVEL 1 Most frequently occurring concepts in the text: ‘strategic’, ‘council’, ‘thinking’, ‘plan’, ‘community’, ‘operational’, ‘councillors’ and ‘corporate’. These are the important concepts that emerged from the text. Thematic circles that emerged from the data:	VISIONS & MISSIONS Aspects of sustainability and economic viability are included – they refer to ‘sustainable practices’ Competitiveness is implied with wording ‘to be the Regional Council of Choice’ CORPORATE PLANS Sustainability towards environment / natural resources.	Section 4.4, Chapter 4 Section 4.4, Chapter 4 Section 5.4, Chapter 5 Section 4.5.2, Chapter 4
	L2: They acknowledged the need for competitiveness, they competed on service delivery, customer satisfaction and delivery efficiency.	L2: This group achieved the highest score for application of this element in strategic thinking in the scenario exercise	‘strategic’, ‘council’, ‘community’, ‘operational’ and ‘region’. The ‘strategic’ circle is coloured red and indicates the highest level of connections among the other circles.	Economical growth was prominent. Competitive advantage implied in statements such as ‘efficient and effective service delivery’ as reasons for residents to stay in the area.	Section 4.4, Chapter 4 Section 4.4, Chapter 4 Section 5.4, Chapter 5 Section 4.5.2, Chapter 4

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	DOCUMENTARY ANALYSIS	REFERENCE
SUSTAINABILITY AND COMPETITIVE ADVANTAGE	L3: Not mentioned specifically but identified the community plan and corporate plan as tools to ensure long-term survival of councils	L3: This group achieved the lowest score for application of this element in strategic thinking in the scenario exercise	<p>Text extracts:</p> <p>They represented the general perceptions about strategic thinking on the first level strategy group and include elements of strategic thinking and are indicated as [1] sustainability and competitive advantage, [2] holistic view, [3] analysis and creativity, [4] long-term direction and future</p>		<p>Section 4.4, Chapter 4</p> <p>Section 4.4, Chapter 4</p> <p>Section 5.4.4, Chapter 5</p>
HOLISTIC VIEW	L1: Holistic view identified as important – focus on including other stakeholders	L1: This group achieved second highest score for application of this element in strategic thinking in the scenario exercise	<p>STRATEGY GROUP LEVEL 2</p> <p>Most frequently occurring concepts in the text:</p> <p>‘strategic’, ‘thinking’, ‘council’, ‘corporate’, ‘councillors’, ‘plan’, ‘operational’, ‘community’ and ‘organisation’</p> <p>The concepts that were most important and relevant to the Chief Executive Officer and the Directors of Departments were those associated with thinking about how to manage the organisation that included the operational aspects related to managing staff and providing required services to the community.</p>	<p>VISIONS & MISSIONS</p> <p>Aspects such as the environment, economy and government included – indicate holistic view.</p> <p>CORPORATE PLANS</p> <p>Holistic approach was evident – corporate plans included issues related to community plans, environmental developing plans, land-use plans. Plans were developed in collaboration with key stakeholders in business, industry, community, staff and councillors.</p>	<p>Section 4.4, Chapter 4</p> <p>Section 4.4, Chapter 4</p> <p>Section 5.4.4, Chapter 5</p>

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	DOCUMENTARY ANALYSIS	REFERENCE
HOLISTIC VIEW	L2: Considers the demands of the region, firm and internal and external factors	L2: This group achieved the highest score for application of this element in strategic thinking in the scenario exercise	<p>Thematic circles that emerged from the data: 'strategic', 'council', 'corporate', 'amalgamation' and 'change'. In this map the theme circle with the highest level of connections among the other circles is 'council' and is coloured red. The concepts included in this theme circle are 'staff', 'councillors', 'directors', 'operational', 'ideas' and 'community'.</p> <p>Text extracts: They represented the general perceptions about strategic thinking on the first level strategy group and include elements of strategic thinking and are indicated as [1] sustainability and competitive advantage, [2] holistic view, [3] analysis and creativity, [4] long-term direction and future. .</p>		Section 4.4, Chapter 4 Section 4.4, Chapter 4 Section 5.4 Chapter 5
	L3: Identified this as a problem in councils – misalignment between Federal, State and Local government	L3: This group achieved the lowest score for application of this element in strategic thinking in the scenario exercise			Section 4.4, Chapter 4 Section 4.4, Chapter 4 Section 5.4, Chapter 5

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	DOCUMENTARY ANALYSIS	REFERENCE
ANALYTICAL AND CREATIVE THINKING	L1: Indicated that both analytical and creative thinking is necessary but indicated that their creativity in developing long-term plans for councils were somewhat restricted by other levels of government and statutory requirements.	L1: This group achieved the highest score for application of this element in strategic thinking in the scenario exercise	<p>STRATEGY GROUP LEVEL 2</p> <p>Most frequently occurring concepts in the text: strategic, thinking, council, corporate, councillors, plan, operational, community and organisation</p> <p>The concepts that were most important and relevant to the Chief Executive Officer and the Directors of Departments were those associated with thinking about how to manage the organisation that included the operational aspects related to managing staff and providing required services to the community.</p>	<p>VISIONS & MISSIONS</p> <p>Documents indicated that planning for the future was based on ‘consistent and informed decisions’ – this demonstrated that analytical and critical thinking were applied.</p> <p>CORPORATE PLANS</p> <p>The plans indicated that regional and urban growth opportunities were developed – this demonstrated that analysis and creative thinking were applied.</p>	<p>Section 4.4, Chapter 4</p> <p>Section 4.4, Chapter 4</p> <p>Section 5.4.4, Chapter 5</p>
	L2: All agreed that both analysis and creative thinking is required.	L2: This group achieved second highest score for application of this element in strategic thinking in the scenario exercise	<p>Thematic circles that emerged from the data: ‘strategic’, ‘council’, ‘corporate’, ‘amalgamation’ and ‘change’. In this map the theme circle with the highest level of connections among the other circles is ‘council’ and is coloured red.</p>		<p>Section 4.4, Chapter 4</p> <p>Section 4.4, Chapter 4</p> <p>Section 5.4.4, Chapter 5</p>

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	DOCUMENTARY ANALYSIS	REFERENCE
ANALYTICAL AND CREATIVE THINKING	L3: Main task is to prepare and analyse data for Directors and Councillors for strategy development. Focus for this group is more on analysis than creative thinking.	L3: This group achieved the lowest score for application of this element in strategic thinking in the scenario exercise	<p>Text extracts:</p> <p>They represented the general perceptions about strategic thinking on the first level strategy group and include elements of strategic thinking and are indicated as [1] sustainability and competitive advantage, [2] holistic view, [3] analysis and creativity, [4] long-term direction and future [5] corporate plan and [6] amalgamation</p>		<p>Section 4.4, Chapter 4</p> <p>Section 4.4, Chapter 4</p> <p>Section 5.4, Chapter 5</p>
THINKING LONG-TERM ABOUT THE FUTURE	L1: Acknowledged the importance of developing a vision for the future of the council, different community groups had an input in this.	L1: This group achieved the lowest score for application of this element in strategic thinking in the scenario exercise	<p>STRATEGY GROUP LEVEL 3</p> <p>Most frequently occurring concepts in the text:</p> <p>‘strategic’, ‘thinking’, ‘planning’, ‘corporate’ and ‘council’. The concepts that were most important and relevant to the Directors and operational staff involved with strategic thinking were those associated with thinking about the corporate plan because they were involved with the development of the corporate plan.</p>	<p>VISIONS & MISSIONS</p> <p>To have visions and missions for an organisation demonstrate that decision-makers think about the direction and the future of an organisation.</p>	<p>Section 4.4, Chapter 4</p> <p>Section 4.4, Chapter 4</p> <p>Section 5.4, Chapter 5</p>

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	DOCUMENTARY ANALYSIS	REFERENCE
THINKING LONG-TERM ABOUT THE FUTURE	L2: Explained strategic thinking as long-term, setting the direction of where the council should be moving to. It was viewed as a prerequisite for strategy development.	L2: This group achieved the highest score for application of this element in strategic thinking in the scenario exercise	Thematic circles that emerged from the data: 'strategic', 'council', 'community', 'report' and 'impact'. In this map the theme circle with the highest level of connections among the other circles is 'strategic' and is coloured red. The concepts included in this theme circle are 'thinking', 'policy', 'operational', 'planning', 'corporate' and 'change'.	CORPORATE PLANS Corporate plans for periods between four and five years were developed for councils. This indicates an approach directed towards the future of the councils. The development of infrastructure and core services was addressed in the corporate plans to deal with growing communities. The plans also indicate building capacity for sustainable growth of the region.	Section 4.4, Chapter 4 Section 4.4, Chapter 4 Section 5.4, Chapter 5
	L3: Strategic thinking was described as long-term, 'where we are, where we want to go and how to get there', included 'monitoring' and 'planning'.	L3: This group achieved second highest score for application of this element in strategic thinking in the scenario exercise	Text extracts: They represented the general perceptions about strategic thinking on the first level strategy group and include elements of strategic thinking and are indicated as [1] sustainability and competitive advantage, [2] holistic view, [3] analysis and creativity, [4] long-term direction and future		Section 4.4, Chapter 4 Section 4.4., Chapter 4 Section 5.4, Chapter 5

Source: Developed for this study

5.5.2 RQ 2: Level of agreement of task mental models within each level and then across the levels

Results obtained about the level of agreement of task mental models through the qualitative content analysis, the quantitative content analysis and Leximancer are triangulated in this section. The qualitative content analysis provides results about the level of agreement within each of the strategy groups, but also across the groups. For the quantitative content analysis, the scenario exercise, the results of individuals with a group are aggregated and presented for the group. These results are compared across the groups. Leximancer analysis only provides across-levels results for strategy groups. These results are presented in Table 5.26.

The within-group results for each strategy group and each strategic thinking element indicate high levels of agreement except for Strategy Group Level 1's within-group result for the element 'holistic view' that display low levels of agreement. The quantitative content analysis and Leximancer analysis do not provide results for within groups.

For the across-levels results, the qualitative content analysis for the element 'sustainability and competitive advantage' shows high levels of agreement between Strategy Group Level 1 and 2 and, compared to Strategy Group Level 3, low levels of agreement are presented. The high level of agreement between Strategy Group Level 1 and 2 is confirmed by the quantitative content analysis where the scores for Levels 1 and 2 are very close, 88.3 percent for Level 1 and 90 percent for Level 2.

For the element 'holistic view', the qualitative content analysis shows a medium level of agreement across groups because of the differences of agreement within Strategy Group Level 1. In contrast, the quantitative content analysis for this element indicates a high level of agreement across groups with average scores for each group ranging between 73.3 percent and 80 percent. The qualitative content analysis results for this element are therefore not confirmed by the quantitative content analysis. This discrepancy is discussed in detail in Chapter 6.

For elements ‘analytical and creative thinking’ and ‘thinking long-term about the future’, the results from the qualitative content analysis show high levels of agreement and this is confirmed by the quantitative content analysis. Leximancer analysis produces maps from interview results for each of the strategy groups. The map display, ranked concepts, thematic summaries and text abstracts indicate medium levels of agreement among the strategy groups. Although there are similarities in concepts and themes, the maps display differently and various levels of relevance and connectivity are shown.

Next, Table 5.26 presents the results related to Research Question 2. Detailed discussion about the results follows in Chapter 6. In the next section, the results obtained for Research Question 3 are triangulated.

Table 5.26 Comparison of results related to Research Question 2

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
SUSTAINABILITY AND COMPETITIVE ADVANTAGE	<p>WITHIN GROUP</p> <p>L1: High level of agreement</p> <p>L2: High level of agreement</p> <p>L3: High level of agreement</p> <p>ACROSS LEVELS</p> <p>L1 & L2: High level of agreement</p> <p>L1 & L2 compared to L3: Medium level of agreement</p>	<p>WITHIN GROUPS</p> <p>No results available for within-group agreement</p> <p>ACROSS LEVELS:</p> <p>Average scores for totals for each strategy group were 90% (L2), 88.3% (L1) and 78.3% (L3) which places all groups at the high end of understanding and applying strategic thinking according to this element. Therefore, the level of agreement was rated as high.</p>	<p>WITHIN GROUPS</p> <p>No results available for within-group agreement</p> <p>ACROSS LEVELS</p> <p>L1, L2 & L3:</p> <p>Map display: Similar concepts, displayed differently on maps: Medium level of agreement.</p> <p>Ranked Concepts: Similar concepts, different % of relevance: Medium level of agreement</p>	<p>Section 4.4 Chapter 4</p> <p>Section 4.4 Table 4.3 Chapter 4</p> <p>Section 5.4 Table 5.11</p>

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
HOLISTIC VIEW	<p>WITHIN GROUPS</p> <p>L1: Low level of agreement</p> <p>L2: High level of agreement</p> <p>L3: High level of agreement</p> <p>ACROSS LEVELS</p> <p>L1 & L2 & L3: Medium level of agreement</p>	<p>WITHIN GROUPS</p> <p>No results available for within-group agreement</p> <p>ACROSS LEVELS:</p> <p>Average scores for totals for each strategy group were 80% (L2), 75% (L1) and 73.3% (L3) which places all groups at the high end of understanding and applying strategic thinking according to this element. Therefore, the level of agreement was rated as high.</p>	<p>Thematic Summaries: Similar themes, different focuses, different % of connectivity: Medium level of agreement</p> <p>Text extracts: Including the same elements of strategic thinking, different focuses: Medium level of agreement.</p>	<p>Section 4.4 Chapter 4</p> <p>Section 4.4 Table 4.3 Chapter 4</p> <p>Section 5.4 Table 5.11</p>
ANALYTICAL AND CREATIVE THINKING	<p>WITHIN GROUPS</p> <p>L1: High level of agreement</p> <p>L2: High level of agreement</p> <p>L3: High level of agreement</p> <p>ACROSS LEVELS</p> <p>L1 & L2 & L3: High level of agreement</p>	<p>WITHIN GROUPS</p> <p>No results available for within-group agreement</p> <p>ACROSS LEVELS:</p> <p>L1, 2 & 3: Average scores for totals for each strategy group were 88.3% (L1), 86.6% (L2) and 73.3% (L3) which places all groups at the high end of understanding and applying strategic thinking according to this element. Therefore, the level of agreement was rated as high.</p>		<p>Section 4.4 Chapter 4</p> <p>Section 4.4 Table 4.3 Chapter 4</p> <p>Section 5.4 Table 5.11</p>

ELEMENTS OF STRATEGIC THINKING	QUALITATIVE CONTENT ANALYSIS	QUANTITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
THINKING LONG-TERM ABOUT THE FUTURE	<p>WITHIN GROUPS</p> <p>L1: High level of agreement</p> <p>L2: High level of agreement</p> <p>L3: High level of agreement</p> <p>ACROSS LEVELS</p> <p>L1 & L2 & L3: High level of agreement</p>	<p>WITHIN GROUPS</p> <p>No results available for within-group agreement</p> <p>ACROSS LEVELS:</p> <p>L1, 2 & 3: Average scores for totals for each strategy group were 80% (L2), 78.3% (L3) and 75% (L1) which places all groups at the high end of understanding and applying strategic thinking according to this element. Therefore, the level of agreement was rated as high.</p>		<p>Section 4.4</p> <p>Chapter 4</p> <p>Table 4.3</p> <p>Chapter 4</p> <p>Section 5.4</p> <p>Table 5.11</p>

Source: Developed for this study

5.5.3 RQ 3: Content of shared group-functioning mental models in three levels of strategy groups

The results obtained from the qualitative content analysis and Leximancer analysis provide information about the content of shared group-functioning mental models for Strategy Group Level 1, 2 and 3. The main results are presented in Table 5.27.

The qualitative content analysis provide details about how members of each group perceive other group members' knowledge, skills and attitudes; about their perceptions about group interaction; and the roles and responsibilities of other groups. Additional categories emerging from the interview data are added – they are aspects related to groupthink and groupshift; perceptions about boundary spanning in the groups and perceptions about the balance between strategic thinking and operational thinking in each of the strategy groups.

The Leximancer analysis provides details about the frequency in which concepts and themes occur and co-occur in the interview data. To obtain more detail about the concepts that are specifically related to group-functioning, the 'group-functioning' concept is investigated, rather than the overall results that display the concepts related to 'strategic'. Leximancer does not explain concepts, although it provides the text extracts as evidence that are counted in the frequency index. To obtain a better understanding of the context and content of the concepts, the text extracts are analysed. The extracts provide similar results to the qualitative content analysis. The concepts and related text extracts from Leximancer results confirm the content of the categories as presented by the qualitative content analysis. Table 5.27 provides an overview of the results that is discussed in detail in Chapter 6. After Table 5.27, the next section addresses the levels of agreement of the group-functioning mental models according to the results obtained from the qualitative content analysis and the Leximancer analysis.

Table 5.27 Comparison of results related to Research Question 3

CATEGORIES	QUALITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
<p>PERCEPTIONS ABOUT OTHER STRATEGY GROUP MEMBERS' KNOWLEDGE, SKILLS AND ATTITUDES</p>	<p>L1: Members had various perceptions about this issue; it ranged from being perceived as very good to limited. All had very positive attitudes towards strategy development.</p>	<p>LEVEL 1</p> <p>Level 1 Concepts:</p> <p>The concepts related to group-functioning were identified as 'attitudes' (20%), 'responsibilities' (20%), 'skills' (7%), 'knowledge' (5%), 'role' (5%), 'ideas' (3%), 'thinking' (3%), 'strategic' (1%) and 'operational' (1%).</p>	<p>Sections 4.4</p> <p>Section 5.4</p> <p>Chapter 5</p>
	<p>L2: Members viewed the knowledge and skills of their own group as very high but rated the knowledge and skills of the second level as limited. All had very positive attitudes towards strategy development.</p>		
	<p>L3: Members had various perceptions about the issue; it ranged between 'limited' and 'good'. All had very positive attitudes towards strategy development.</p>		
<p>PERCEPTIONS ABOUT HOW THE GROUP INTERACTS</p>	<p>L1: Various responses were noted with regard to their unity in:</p> <ul style="list-style-type: none"> • perceptions about reaching their goals; these ranged from high levels of unity to medium levels of unity • perceptions about levels of communication; these ranged from adequate communication between group members to inadequate communication between group members. <p>Team interaction was rated low and this was related to the fact that they were newly established groups. Each councillor was responsible for a specific portfolio and they indicated that communication between these portfolios was essential because they crossed areas of responsibilities. This was an area that they indicated they needed to improve. They were positive about their strategy group and predicted improvement in team interaction in future.</p>	<p>Level 1 Thematic circles that emerged from the data:</p> <p>Eleven thematic circles emerged from the data:</p> <p>'strategic', 'council', 'councillors', 'community', 'knowledge', 'skills', 'ideas', 'education', 'challenging', 'consultants' and 'portfolios'. The concepts that co-occurred in the text are clustered in the theme circles.</p>	<p>Sections 4.4</p> <p>Chapter 4</p> <p>Section 5.4</p> <p>Chapter 5</p>
	<p>L2: They all agreed that their group was not fully united in trying to reach their goals because they were a newly established group and they indicated that they expected this to improve over time. Group members rated the success of their strategy group as 'average' to 'below average' and attributed this to the stress and instability caused by amalgamation. Although they indicated that they were fairly confident that they will be able to achieve their goals, they said it would take time for their group to develop.</p>		
	<p>L3: Group members explained that their group was still developing and therefore rated interaction as 'fairly good'. Group members viewed their group as not sufficiently united in trying to reach their goals and they attributed to the amalgamation process and their newly established groups.</p>		

CATEGORIES	QUALITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
PERCEPTIONS ABOUT THE ROLES AND RESPONSIBILITIES OF OTHER GROUP MEMBERS	L1: Different perceptions about who the natural leaders of their groups were and about who were responsible for error or poor performance in the group.	<p>Level 1 Text extracts:</p> <p>The text extracts related to each of the concepts were linked to the categories and text extracts that were similar to those selected and presented in the qualitative content analysis appeared.</p> <p>LEVEL 2</p> <p>Level 2 Concepts:</p> <p>The concepts related to group-functioning were identified as 'responsibilities' (25%), 'role' (7%), 'group' (2%), 'strategic' (1%) and 'operational' (1%).</p>	Sections 4.4
	L2: Group members identified the CEO as the natural leader of their group and indicated that they all took responsibility for their own area.		Chapter 4
	L3: Group members identified the Director in their groups as the natural leader and indicated that they all took responsibility for error or poor performance in their group.		Section 5.4 Chapter 5
GROUPTHINK AND GROUPSHIFT	L1: They indicated that in group discussions and decision-making the majority usually dominated although there were one or two group members that acted as 'devil's advocates' and provided different perspectives about the issues.	<p>Level 2 Thematic circles that emerged from the data:</p> <p>Nine thematic circles emerged from the data: 'strategic', 'directors', 'group', 'people', 'role', 'ideas', 'responsibilities', 'attitude' and 'communicate'. The concepts that co-occurred in the text are clustered in the theme circles.</p> <p>Level 2 Text extracts:</p> <p>The text extracts related to each of the concepts were linked to the categories and text extracts that were similar to those selected and presented in the qualitative content analysis appeared.</p>	Section 4.4 Chapter 4
	L2: Group members indicated that new ideas were brought into their group (through the roles of devils' advocate) and that those ideas were accepted in a positive way.		Section 5.4 Chapter 5
	L3: Group members indicated that new ideas were brought into their group on a regular basis and these ideas created grounds for debate, it was encouraged by the group leader and viewed in a positive way.		Section 4.4 Chapter 4 Section 5.4 Chapter 5

CATEGORIES	QUALITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
<p>PERCEPTIONS ABOUT THE BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING</p>	<p>L1: Table 4.6 provided details about their perceptions about the balance between operational and strategic thinking for the three groups. They rated the actual levels of strategic thinking as much lower to what they thought it should be for both L1 and L2.</p>	<p>LEVEL 3</p> <p>Level 3 Concepts:</p>	<p>Section 4.4 Chapter 4</p> <p>Section 5.4 Chapter 5</p>
	<p>L2: Table 4.6 provided details about their perceptions about the balance between operational and strategic thinking for the three groups. They rated the actual levels of strategic thinking as much lower to what they thought it should be for both L1 and L2.</p>	<p>The concepts related to group-functioning were identified as ‘responsibilities’ (33%), ‘role’ (8%), ‘thinking’ (3%), ‘operational’ (3%), ‘group’ (3%) and ‘strategic’ (2%).</p> <p>Level 3 Thematic circles that emerged from the data:</p>	<p>Section 4.4 Chapter 4</p> <p>Section 5.4 Chapter 5</p>
	<p>L3: Table 4.6 provided details about their perceptions about the balance between operational and strategic thinking for the three groups. They rated the actual levels of strategic thinking as much lower to what they thought it should be for both L1 and L2.</p>	<p>Fourteen thematic circles emerged from the data: ‘strategic’, ‘group’, ‘forward’, ‘development’, ‘background’, ‘directors’, ‘staff’, ‘managers’, ‘ideas’, ‘amalgamation’, ‘communication’, ‘response’, ‘group-functioning’ and ‘skills’. The concepts that co-occurred in the text are clustered in the theme circles.</p> <p>Level 3 Text extracts:</p> <p>The text extracts related to each of the concepts were linked to the categories and text extracts that were similar to those selected and presented in the qualitative content analysis appeared.</p>	<p>Section 4.4 Chapter 4</p> <p>Section 5.4 Chapter 5</p>

Source: Developed for this study

5.5.4 RQ 4: Level of agreement of group-functioning mental models within each level and then across the levels

The results for the content of group-functioning mental models according to two methods of analysis are presented in the previous section. In this section, the levels of agreement as determined by the qualitative content analysis method and the Leximancer analysis method are presented. The qualitative content analysis method provides results of the levels of agreement about the content of group-functioning mental models for individuals in groups (within groups) and also for across-level agreement. The Leximancer analysis method provides results for across-level agreement only. These results are presented in Table 5.28.

The qualitative content analysis results for the perceptions about other group members' knowledge and skills indicate that, for Level 2 and 3, a high level of agreement within each group exists while Level 1 presents a low level of agreement where members have varied perceptions about their fellow group members' knowledge and skills. Across the levels it is evident that each group has unique perceptions and, therefore, the level of agreement among groups is rated as low. In contrast, the perceptions about group members' attitudes are similar in each group and also across levels where all respondents view the attitudes in the groups as very positive.

The qualitative content analysis results regarding the perceptions about how the group interacts, the perceptions about the roles and responsibilities of other group members and the perceptions about the balance between strategic and operational thinking indicate identical ratings in all three categories. Strategy Group Level 1 presents medium levels of agreement while Strategy Group Levels 2 and 3 present high levels of agreement within the groups. Overall the groups demonstrate medium levels of agreement across the groups about these perceptions.

The qualitative content analysis results regarding perceptions about how the group perceives team interaction and the knowledge and skills available in the group show high levels of agreement in each of the groups, but the across-level

comparison present a medium level because the perceptions within each group are dissimilar.

Regarding the map display and ranked concepts, Leximancer results show medium level agreement among the three strategy groups. Although a large number of similar concepts are displayed on the maps, the percentages of relevance of concepts and co-occurrence of concepts display differently. The thematic summaries across the three strategy groups present a low level of agreement because only two of the themes are similar in all three groups. This indicates different focuses for each group and shows different percentages of connectivity. The level of agreement for concepts related to group-functioning across the groups is also rated as medium because the groups present some similar concepts, but the percentages of likelihood of occurrence are varied. Finally, the text extracts for the different groups display a medium level of agreement across the groups because similar issues are addressed (related to the categories for group-functioning), but the views of the groups regarding those issues are different.

From the triangulation of results obtained from different analysis methodologies it is clear that different methods provide results from different perspectives and these results are compared to find similarities in results, but the real value is achieved when these results are integrated to provide a clearer picture of the rich and complex data. This is discussed in detail in Chapter 6.

Next, Table 5.28 presents an overview of the levels of agreement of group-functioning mental model. After the table, this chapter is concluded and Chapter 6 will follow where these results are discussed in detail.

Table 5.28 Comparison of results related to Research Question 4

CATEGORIES	QUALITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
PERCEPTIONS ABOUT OTHER STRATEGY GROUP MEMBERS' KNOWLEDGE, SKILLS AND ATTITUDES	<p>WITHIN GROUP</p> <p>L1: Low level of agreement</p> <p>L2: High level of agreement</p> <p>L3: High level of agreement</p> <p>ACROSS LEVELS</p> <p>L1, L2 & L3: Low level of agreement.</p> <p>For attitudes: L1, L2 & L3: High level of agreement</p>	<p>WITHIN GROUPS</p> <p>No results available for within-group agreement</p> <p>ACROSS LEVELS</p> <p>L1, L2 & L3:</p> <p>Map display: Similar concepts, displayed differently on maps in terms of relevance and co-occurrence: Medium level of agreement.</p> <p>Ranked Concepts: High number of similar concepts between all three strategy groups, different % of relevance: Medium level of agreement</p>	<p>Section 4.4</p> <p>Chapter 4</p> <p>Table 4.13 Chapter 4</p> <p>Section 5.4</p> <p>Chapter 5</p> <p>Table 5.24 Chapter 5</p>
	PERCEPTIONS ABOUT HOW THE GROUP INTERACTS	<p>WITHIN GROUP</p> <p>L1: Medium level of agreement</p> <p>L2: High level of agreement</p> <p>L3: High level of agreement</p> <p>ACROSS LEVELS</p> <p>L1, L2 & L3: Medium level of agreement</p>	<p>Thematic Summaries: Only two similar themes, different focuses, different % of connectivity: Low level of agreement</p> <p>Concepts related to Group-functioning: Some similar concepts between all three strategy groups but different % of likelihood: Medium level of agreement</p> <p>Text extracts: Similarity regarding the issues among the three groups, although perspectives about the issues are not similar in all cases: Medium level of agreement.</p>

CATEGORIES	QUALITATIVE CONTENT ANALYSIS	LEXIMANCER ANALYSIS	REFERENCE
PERCEPTIONS ABOUT THE ROLES AND RESPONSIBILITIES OF OTHER GROUP MEMBERS	WITHIN GROUP		Section 4.4
	L1: Medium level of agreement		Table 4.13 Chapter 4
	L2: High level of agreement		Section 5.4
	L3: High level of agreement		Chapter 5
	ACROSS LEVELS		Table 5.24 Chapter 5
	L1, L2 & L3: Medium level of agreement		
PERCEPTIONS ABOUT THE BALANCE BETWEEN STRATEGIC THINKING AND OPERATIONAL THINKING	WITHIN GROUP		Section 4.4
	L1: Medium level of agreement		Chapter 4
	L2: High level of agreement		Table 4.13 Chapter 4
	L3: High level of agreement		Section 5.4
	ACROSS LEVELS		Chapter 5
	L1, L2 & L3: Medium level of agreement		Table 5.24 Chapter 5

Source: Developed for this study

5.6 Chapter summary

The first part of this chapter presents the results of the Leximancer analysis. This analysis follows the detailed qualitative content analysis presented in Chapter 4. The objective of the Leximancer analysis is to identify and confirm the major concepts, the strength of ties between concepts and the overlap between concepts retrieved from the interview data. Through Leximancer, a set of maps are presented to provide a visual display of the results obtained from the text analysis for each of the research questions and the strategy groups.

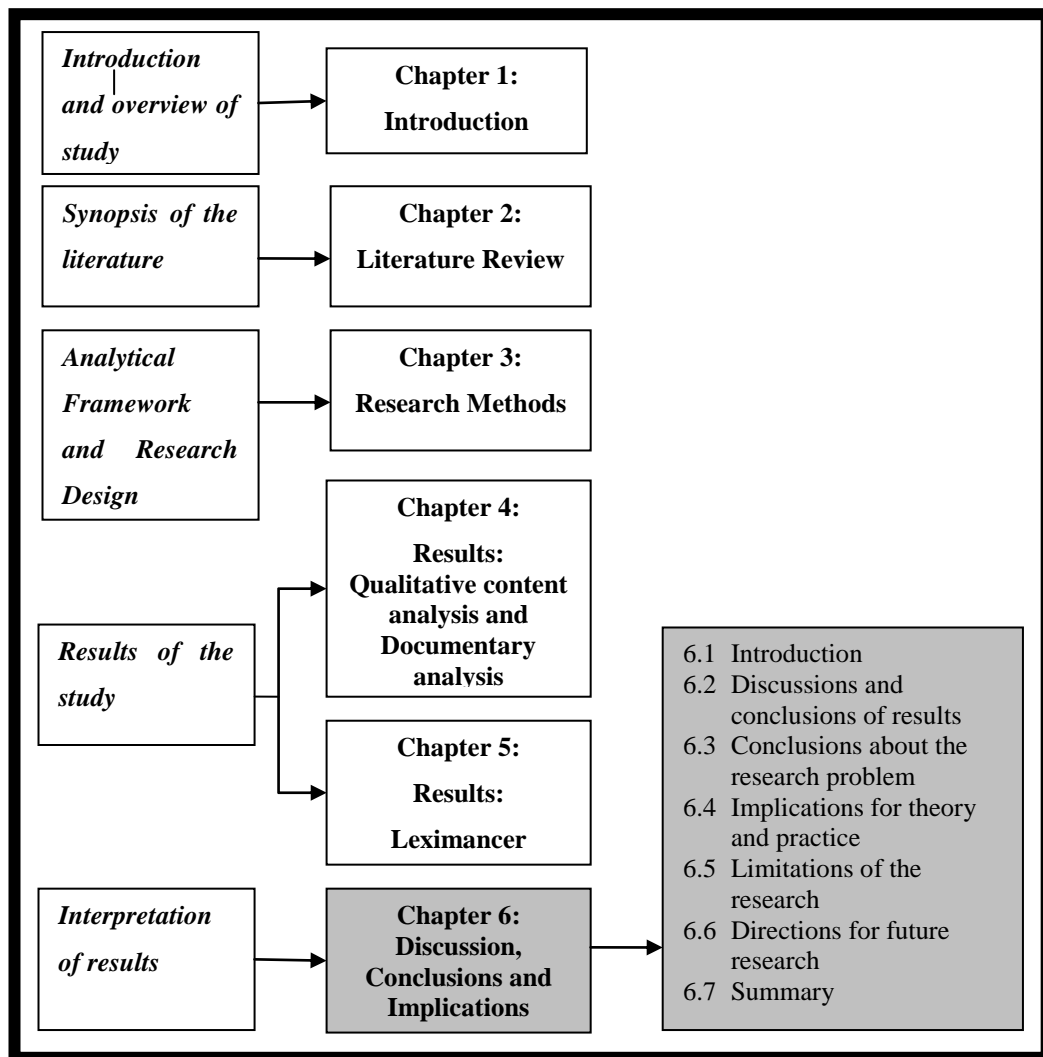
The second part of this chapter presents a triangulation of the results obtained from the qualitative content analysis, quantitative content analysis and documentary analysis (Chapter 4) and the Leximancer analysis. As mentioned previously, it is important to note that the different methods of analyses provide results from different methodological perspectives which make direct comparison of results intricate. Instead of direct comparison, the real value of triangulation of results lies in the deeper level of exploration of the data and the presentation of integrated results from the different methods to reflect the richness and complexity of the interview data. The results presented in this chapter are explained and discussed in Chapter 6.

Chapter 6

Discussion, Conclusions and Implications

'We shall not cease from exploration, and the end of all our exploring will be to arrive where we started, and know the place for the first time.'

(TS Eliot, 'Four Quartets')



6.1 Introduction

Chapter 1 commenced with a quote from Senge's seminal work on learning organisations where mental models are viewed as deeply-held internal images that could limit new insights because they tend to steer people to revert to familiar ways of thinking and acting (Senge 1990). It is suggested that mental

models need to be examined and tested to improve people's internal pictures for developing learning organisations. Inspired by this perspective, the objective of this study is to 'investigate the role of shared mental models of strategic thinking in the development of organisational strategy' and to achieve this objective, four research questions and eleven propositions are developed. The study finds that shared mental models of strategic thinking play a significant role in strategy development and the research questions and propositions are largely confirmed. To investigate the role of mental models of strategic thinking, mental models of the task of strategic thinking; mental models of the group-functioning and also the levels of agreement within and across groups are included in the research questions:

RQ1: What is the shared task mental model of strategic thinking of strategy groups?

RQ2: What is the level of agreement of the task mental models of strategic thinking amongst strategy groups?

RQ3: What is the shared group-functioning mental model of strategy groups?

RQ4: What is the level of agreement of the group-functioning mental models amongst strategy groups?

Based on the literature pertaining to each of these questions, as reviewed in Chapter 2, propositions developed for this study are addressed in this chapter.

The purpose of this final chapter is to discuss the results reported in Chapters 4 and 5, the contributions and their implications for theory and practice. Since all research has limitations, this chapter also address the limitations of this study as it may facilitate future research strategies. Finally, future research directions are discussed to conclude this thesis.

6.2 Discussions and conclusions of the results

The results for this study are presented in Chapters 4 and 5 and, in this section; the results are discussed in relation to the literature for each of the research

questions. The propositions related to each research question and formulated in Chapter 2 are also addressed.

6.2.1 RQ1: What is the shared task mental model of strategic thinking of strategy groups?

The results in Chapters 4 and 5 show that four elements of strategic thinking, namely, ‘sustainability and competitive advantage’, ‘holistic view’, analytical and creative thinking’ and ‘thinking long-term about the future’ are applied in strategic thinking in all of the strategy groups. The results for RQ1 are now discussed, followed by an examination of individual contributions to strategic thinking and the section concludes with a summary of findings from the research question.

Element 1: Sustainability and competitive advantage

To address this element, Proposition 1 applies:

P1: Strategy group members consider sustainable competitive advantage when thinking about the long-term direction of the organisation.

The results of this study are in agreement with P1. The results of the qualitative content analysis show that strategy group members on all levels view sustainability and competitive advantage as very important aspect of strategic thinking. The quantitative content analysis indicates that the element ‘sustainability and competitive advantage’ is the most important element as it achieved the highest scores in the overall results for the elements. The documentary analysis and the text abstracts obtained from the Leximancer analysis confirm this element.

Regarding the element ‘sustainability and competitive advantage’, strategy group members indicate that it is essential to plan for the establishment of sustainable communities to ensure the long-term survival of their regions. They also indicate that although local government is not focused on profitability but, rather, was responsible for providing essential services to their region, they do compete with their neighbouring councils for federal funding to support economic development

that attracted new businesses and residents to their communities. They compete on efficiency measures as more efficient services meant more affordable services to residents. The efficiency measures relate to providing high levels services for the community with limited resources. Because councils are required to meet service targets that have been set externally, they are challenged to consider and develop ways to meet those targets with their limited resources. To achieve sustainability and competitive advantage, strategy group members indicate that such considerations formed part of their strategic thinking in developing long-term strategies for their councils. These results show the importance of sustainability and competitive advantage in the unique context of regional councils in local government. This coincides with the general theory provided in Chapter 2 and the specific links are now addressed.

As discussed in Chapter 2 (Section 2.3.2 Elements of strategic thinking), this element, sustainable competitive advantage, has an overarching effect on the other elements as it characterises the main objective of strategy development (Dunphy, Griffiths & Benn 2007). Strategic thinking is precursory to strategy development and entails consideration of the long-term direction of organisations that needs to include reflection of the social and environmental consequences of organisational strategy (Hubbard et al. 2008). The results of this study indicate that sustainability and competitive advantage are vital in strategic thinking. In Table 2.1 the approaches of various researchers towards sustainable competitive advantage was presented. The proposed element includes an aspect of sustainability that was not directly noted by the other researchers. Although researchers identified aspects related to competitiveness (Acur & Englyst 2006; Liedtka 1998; Venkatraman 1989) and developing multiple alternatives (Graetz 2002), ‘sustainability’ was not specifically mentioned—although it could be inferred from their discussions of the elements. Sustainable competitive advantage is addressed in this study and related to the sustainability phase model; where links to the fourth phase of efficiency and the fifth phase of strategic proactivity are indicated. These phases characterise organisations’ unique way of treating human and natural resources in their utilisation of these resources and can be used to chart possible paths forward (Dunphy, Griffiths & Benn 2007). It is suggested that, in Phase 4, the path to efficiency include aspects of cost

reduction, value adding and innovation and flexibility. For true strategic sustainability and to reach competitive advantage as applicable to Phase 5, however, organisations need to move beyond efficiency approaches to develop human and ecological capabilities within the organisation. This includes developing close relationships with government and communities (Dunphy, Griffiths & Benn 2007). The results from the regional councils indicate that regional councils compete with neighbouring councils on the basis of efficiency measures. This indicates that the regional councils are functioning at Phase 4 where they deal with economic and social measures in their approach to utilisation of resources. On the other hand, the results also indicate that their organisational strategy was developed with the input of the community and other stakeholders such as state and federal government, and local businesses. This indicates that the regional councils moved beyond the fourth phase into the strategic proactivity phase. The results from the regional councils shows that strategy group members consult widely with all stakeholders to identify the environmental changes and this feeds into their deliberations about the strategic options for their councils. In developing organisational strategy, the strategy makers in regional councils seek first and foremost the input from the community and other stakeholders. They explore new opportunities and consider the impact of new strategies on their stakeholders and the environment. Furthermore, they also explore ways to deliver effective and efficient services to the community to ensure that their council area is a popular choice for new residents. This links to Hamel and Prahalad's (1994) views on sustainable competitive advantage as part of strategic thinking where it is argued that sustainable competitive advantage can help organisations to identify, respond to and influence changes in the environment by creating options to ensure ongoing success for organisations. The implication of the transition from the fourth phase of efficiency to the fifth phase of strategic proactivity is that regional councils are now positioned to keep abreast of sustainability issues and to achieve sustainable competitive advantage. Regional councils demonstrate how the progression from efficiency measures to strategic sustainability can be made through developing close relationships with the community and other layers of government by purposefully including the inputs of all stakeholders in their strategy development process.

The inclusion of sustainability into strategic thinking provides a sensible basis for considering options for the long-term direction for regional councils. With the increasing attention to climate change, global warming, pollution management and waste disposal, organisations' success is also measured not only their financial success, but also by their approaches to managing environmental and social dimensions (Group 100 Incorporated, 2003). These dimensions must be aligned to the organisational strategies and become critical in strategic thinking. By including 'sustainable competitive advantage' as an element of strategic thinking as proposed, the true nature of strategic thinking is demonstrated.

Element 2: Holistic view

To address this element, Proposition 2 applies:

P2: Strategy group members think holistically about the organisation when they apply strategic thinking in considering the long-term direction of the organisation.

The results of this study are in agreement with P2. The results for this element are closely linked to Proposition 1's results because it indicates that strategy group members consider the input from a wide range of stakeholders into their strategic thinking when considering the long-term direction of their organisations. This confirms their approach towards sustainability. The qualitative content analysis and text extracts obtained from the Leximancer analysis shows that strategy group members on all levels consider the demands of external and internal stakeholders and reflect about the proposed strategic directions in a holistic way. The results from the quantitative content analysis indicate that all groups apply a holistic view in the scenario exercise. The documentary analysis indicates that a holistic view is evident in the visions and missions of the councils because they include aspects related to the environment, economy and governance.

Councils are required to compile community plans and corporate plans in response to federal government, state government and local government regulations with regard to urban development, transport and roads planning, and

natural resources management. It is required that these plans are developed through consultation with the residents and community groups. In this regard the councillors play a pivotal role, being the link between the community and council and, in some cases, this leads to councillors leaning more towards operational than strategic thinking (see results in Section 4.4 Qualitative content analysis). This is addressed in more detail later.

The results show that strategy group members consider internal and external stakeholders in their strategic thinking. This is in agreement with systems thinking that Hanford et al. (1995) and Daft and Pirola-Merlo (2009) describe as synergy of whole systems and consideration of individual parts in learning how to strengthen and change whole systems. Strategy group members also acknowledge the need for alignment between internal discipline groups; taking into consideration how changes in operational aspects influence other operations when considering options for the long-term direction of their councils. When strategic thinking is applied, the whole organisation, as well as external stakeholders, is included (Johnson et al. 2008).

The comparison of approaches towards strategic thinking in Table 2.1 include 'thinking holistically' as a proposed key element of strategic thinking. Liedtka (1998) directly refer to a systems perspective in her explanation of this element. This means that the participation of internal and external stakeholders is encouraged and, by devolving responsibilities from the core decision makers, employees are given greater autonomy and responsibility. In the case of the councils, participation of external groups is not only encouraged, but mandatory by law.

The results shows that strategic thinking is required on various organisational levels through the strategy groups and all members of strategy groups contribute to strategy development. In two of the councils, the corporate plan is developed by third level strategy groups and submitted to the first level strategy group for approval. This clearly indicates increased responsibilities for the third level strategy groups. This finding may be unique to the councils, as other organisations may not delegate the vital tasks of developing corporate plans to

lower level strategy groups. The results of specifically the scenario exercise shows that strategy group members are highly successful in applying holistic thinking by acknowledging how changes in one area of the council will affect other areas, internally and externally. One of the success criteria for strategy formulation (Acur & Englyst 2006) is understanding the impact that changing organisational processes will have on the organisation, internally and externally. The results from the scenario exercise confirm this aspect.

Element 3: Analytical and creative thinking

To address this element, Proposition 3 applies:

P3: Strategy group members apply analytical and creative thinking they apply strategic thinking in considering the long-term direction of the organisation.

The results of this study are in agreement with P3. The results from the qualitative content analysis show that both analytical and creative thinking are applied by strategy group members in their strategic thinking. This is confirmed by the quantitative content analysis and the text extracts obtained from the Leximancer analysis. The documentary analysis of the visions and missions of the councils indicates that their planning for the future was based on ‘consistent and informed decisions’ (*Dalby Regional Council 2009 - 2013 Corporate Plan 2009*) and the corporate plans indicate that regional and urban growth opportunities are exploited—and this demonstrates the application of analytical and creative thinking.

Organisational strategy for councils is based upon state and federal legislation and councils also need to take the needs and wants of the community into account. To develop strategies, members of the strategy groups indicate that they needed information from the external environment (state and federal government, communities and businesses) and the internal environment (the council departments) to enable their analytical processes. In this regard they report that they often experienced difficulties in obtaining this information due to long and slow administrative processes within the council, and also externally. This affects their strategy development processes negatively because the delays in

obtaining the information hold decision-making back and sometimes circumstances changed to such an extent that they have to redesign their initial strategies. Strategy group members also indicate that their creativeness is somewhat restrained by government regulations that diminish their freedom of designing council strategies that are appropriate for their specific regions and communities.

The literature review presented in Chapter 2 clearly shows that successful strategies can only be achieved through analysis and creative strategic thinking (Ohmae 1982). The results of the study show that analytical and creative thinking are applied in strategic thinking. Johnson et al. (2008) argue that strategy development relies on analytical approaches to develop information to explain the strategic position of an organisation; including the impact of the external environment, the internal organisational competences and the expectations of stakeholders. In this regard, the strategy groups admit that they are dependent on analysis information from the council departments that is sometimes difficult to obtain. Mintzberg (1994) contends that not only analytical processes are required, but also intuition and creativity in developing organisational strategy. To develop anything new requires creativity, and creating long-term visions for councils is no exception. Strategy groups went through the exercise of developing plans for the future – they had to analyze the external environment and internal environment, they had to think creatively about the future of their region, they had to come up with a viable plan for the future. This may not be a demonstration of commitment to think strategically but it indicates that strategic thinking is applied. The comparison of approaches towards strategic thinking in Table 2.1 include ‘thinking analytically and creatively’ as a proposed key element of strategic thinking. In this regard, Liedtka (1998) directly explains strategic thinking as creative and analytical, while Graetz (2002) refers to lateral and intuitive thinking and O’Shannassy (2003) posits that, for strategic thinking, either or both intuition and analysis is required. Acur et al. (2006) focus on a SWOT analysis approach where analysis of strengths and weaknesses linked to analysis and opportunities and threats linked to creativity. The results obtained from this study agree with the inclusion of ‘thinking analytically and creatively’ as an element of strategic thinking.

Element 4: Long-term direction and future

To address this element, Proposition 4 applies:

P4: Strategy group members think long-term about the future when they apply strategic thinking in considering the long-term direction of the organisation.

The results of this study are in agreement with P4. The results from the qualitative content analysis show that members from all strategy groups consider strategic thinking as thinking long-term about the future. This is confirmed by the quantitative content analysis and the text extracts obtained from the Leximancer analysis. The documentary analysis of the visions and missions of the councils indicate that the direction and the future of the councils are considered for the next four to five years and this is in agreement with proposition four.

Furthermore, the results indicate that strategy group members defined strategic thinking as a core function for their groups aiming at developing visions for councils through long-term goals focusing on the future of the councils. The ten year community plans and asset plans that they are developing are evidence of a long-term approach towards developing future goals for their councils; this is included in their corporate planning for the next four to five years. This element, the long-term direction and future, is demonstrated in their views where some members expressed strategy development as considering '*where we are, where we want to go and how to get there*'.

These results are in agreement with the literature on strategic thinking as presented in Chapter 2. A key issue describing strategy is 'long-term'; where strategy entails the future and the long-term effects of decisions made in the organisation (Hubbard et al. 2008 p. 608). As explained in Chapter 2, the duration of long-term depends on the industry and, for regional councils; the duration is four to five years into the future. This does not mean that no changes would be made to the organisational strategy for that period—members indicated that their long-term plans are reviewed regularly to incorporate changes that

impact on their councils such as changes in legislation or changes in the environment. This links back to the discussion in Chapter 2 about intended and emergent strategies (Mintzberg 1994). The results from these councils show that they commence with intended strategies and then shift to emergent strategies as changes occurred in their environment. This links to the view of Dibrell (2007) that appropriate change in strategy rarely occurs if it was not commenced with an intended approach. The comparison of approaches towards strategic thinking in Table 2.1 include ‘thinking long-term about the future’ as a proposed key element of strategic thinking. This element is derived from Venkatraman’s (1989) strategy dimension of ‘futuraity’ where the notion of a desired future is explained. The desired future for the councils is presented through their vision and mission statements. Liedtka (1998) and O’Shannassy (2003) explain the concept of ‘thinking in time’ where the history of the organisation is viewed as influencing the present, and the past as having predictive value for the future—thereby recognising the importance of the past, present and future in strategic thinking. This is confirmed in the results from council where the history of the pre-amalgamation phase is taken into consideration when developing the ‘where we are’ and ‘where we want to go’. This also coincides with Acur et al.’s (2006) criteria for strategy formulation that addresses the notion of learning from experience. For councils, the past, as presented through the amalgamation process, have a significant influence on how they developed their organisational strategy for the future.

Role players in strategic thinking

To address this issue, Proposition 5 applies:

P5: Strategy groups on and across various organisational levels apply strategic thinking in considering the long-term direction of the organisation.

The results of this study are in agreement with P5. The results from the qualitative content analysis, quantitative content analysis and the Leximancer analysis indicate that strategic thinking occurs in each of the strategy groups and

the members of these groups are positioned on various organisational levels ranging from the top level through to the operational level.

Strategy groups on three different levels were investigated and the members of those groups include employees on the top management level (mayor, councillors, chief executive officers, directors of departments), middle management level (managers of sections) and operational level (town planners, human resource officers, chief engineers). These employees are selected to work in the three strategy groups. The results indicate that strategic thinking occurs in each of these strategy groups and that the four elements of strategic thinking are included in the strategic thinking among all group members.

In Section 2.3.3 it is indicated that there is no consensus in the literature about who within the organisation should be involved in strategic thinking—the senior management level only, or employees throughout the organisation. The literature review in Chapter 2 indicates that strategic thinking on multiple organisational levels is required for creating and sustaining competitive advantage (Graetz 2002) and it is proposed that all employees develop their strategic thinking skills (DiVanna & Austin 2004; Wooldridge 1990; Guth 1986) and are involved in the strategy development process (O'Shannassy 2003). Another theoretical perspective is that strategic thinking is the responsibility of senior managers in the organisation (Ansoff 1965; Child 1972) and, although individuals throughout the organisation contribute to strategy development through scanning and data processing, it is the top managers who determine the direction of the organisation (Nadkarni & Barr 2008). The main limitation of such an approach is the assumption that managers are rational decision makers who can accurately predict future challenges. This also leads to narrow perceptions about the environment when other employees are excluded from the strategy development process (Dunphy, Griffiths & Benn 2007). The results of this study confirm the first theoretical perspective where employees from various organisational levels are included in strategy development and applying strategic thinking. Although employees from top management level, middle management level and operational level are included in strategy development, it does not mean that each and every person in the organisation is involved with developing organisational

strategy. The members of the strategy groups, especially Strategy Group Level 3, are selected for participating in the strategy group based on their individual competencies and previous experiences and involvement in strategy development in their previous councils.

The results from the study also indicate various levels of application of strategic thinking among strategy groups and identify the need to develop specific individuals' strategic thinking skills. The results from the qualitative content analysis, where the strategy group members completed a scenario exercise to provide results about their practical application of strategic thinking, indicate that the second level strategy group perform better overall at strategic thinking than the first level strategy group. This was not anticipated by the general perspective that the top level employees should perform better at strategic tasks than other employees. However, taking into account the bases for election and appointment to the top level positions in local government, as explained earlier, these results are quite understandable. The advantage of extending strategy development beyond the boundaries of the top level decision makers to include selected individuals from various organisational levels is demonstrated in this study. The establishment of three interacting strategy groups on three organisational levels in these councils contribute to the enhancement of strategy development because the high performing second level strategy group could supplement and strengthen the performance of the first level strategy group, who is ultimately responsible for making strategic decisions. Because the second level strategy group members have extensive operational experience in working in council environments, they perform a filtering and interpretive function to assist the first level strategy group in decision-making.

The results of this study show that strategic thinking is applied on the top-management level, the middle-management level and the operational level where all four elements of strategic thinking are evident and, therefore, proposition five is in agreement with the results.

Research Question 1 Conclusion

Research Question 1 asks what the shared task mental model of strategic thinking of strategy groups is. Based on the literature of strategic thinking, this study proposes four elements of strategic thinking that task mental models are built upon. The study was applied to strategy groups in regional councils and results from this study was obtained for three levels of strategy groups; Level 1 (mayor, councillors and chief executive officers), level 2 (chief executive officers and directors of council departments) and level 3 (directors and operational staff of specific departments/directorates involved with strategy development). The results confirm current theory about the elements of strategic thinking and make a unique contribution in including the concept of sustainability into the first element about competitive advantage. All aspects of sustainability need to be considered when strategy group members think about how their organisation can achieve competitive advantage. The regional councils demonstrate their commitment to sustainability by involving external stakeholders and their community in reflecting on the long-term direction of the councils in their strategic thinking. The theories about strategic thinking, as discussed in Chapter 2, identify the need for sustained competitive advantage by influencing and responding to changes in the environment (Hamel & Prahalad 1994; Hubbard et al. 2008), but do not fully address sustainability aspects other than the economic aspect of competitive advantage. The results from the councils identify a broader approach to sustainability where environmental and social aspects are considered in their strategic thinking. Regarding the theory debate whether strategic thinking is applied only by employees on the top organisational level or on various organisational levels, the results of this study confirm the theory that strategic thinking occurs on various organisational levels in regional councils and that strategy groups on different organisational levels contribute towards strategy development. The contribution of this study towards the theoretical debate is the provision of actual results (obtained from a real organisation) that strategic thinking in regional councils does occur on more than one organisational level. It also confirms that strategic thinking contributions from multiple levels enhance the effectiveness of strategy development in practice. Next, the results of

Research Question 2 about the levels of agreement of task mental models are discussed.

6.2.2 RQ2: What is the level of agreement of the task mental models of strategic thinking within and among strategy groups?

The level of agreement of task mental models of strategic thinking is investigated according to levels of agreement *within* strategy groups (Levels 1, 2, and 3) and *among* strategy groups (comparing Levels 1, 2 and 3) to provide a deeper level of understanding of this issue. The results of this investigation are provided in Table 5.26 where the results are triangulated by comparison across the different methodological approaches. The qualitative content analysis method provide results for within groups and across levels (among strategy groups) but the other methods, the quantitative content analysis method and Leximancer analysis, provide results only for across levels comparison. First, the within-group results are discussed, followed by the across-levels results and finally this section is closed with a conclusion about the research question.

Within-group results

To address the level of agreement among members of each strategy group, Proposition 6 applies:

P6: High levels of agreement of task mental models among group members enable strategic thinking within strategy groups.

The results of this study are in agreement with P6. The qualitative content analysis provides results for levels of agreement within each strategy group according to the four elements of strategic thinking. For the element ‘thinking about sustainable competitive advantage’ the results show a high level of agreement within each group. The content of their mental models regarding sustainable competitive advantage is provided in Section 6.2.1. The results for the second element, ‘thinking holistically’ indicate that a high level of agreement among group members of Strategy Group Levels 2 and 3 occurs while a low level of agreement within Strategy Group Level 1 is noted. Most group members within Strategy Group 2 and 3 respectively, address the interplay between

external environment demands (legislation, natural environmental issues, community and regional demands) and internal organisational aspects (departments, employees, policies, procedures), taking all stakeholders into consideration in their strategic thinking and demonstrating holistic thinking.

Members of strategy groups on levels 2 and 3 share many years of work experience in local government and they demonstrate a thorough understanding of how the external and internal issues impact on each other. In contrast, the results of members of Strategy Group Level 1 do not present holistic thinking as a prominent feature of strategic thinking. Some members of this group focus exclusively on their role as a link between the community and the council, without acknowledging the impact that this link has on other stakeholders and external environmental issues; while other members of this group did recognise that strategic thinking should incorporate a holistic view of the council and its external connections. The reasons for this low level of agreement is linked to the fact that the councillors are newly elected in their positions and other factors relating to education and experience that are discussed in the previous section. For the other elements of strategic thinking, ‘thinking analytically and creatively’ and ‘thinking long-term about the future’, the results show high levels of agreement within each group.

The importance and advantages of shared mental model agreement are discussed in the literature review in Section 2.5.3. It is proposed that groups sharing mental models carry knowledge that is compatible and complementary (Cannon-Bowers & Salas 2001; Salas & Cannon-Bowers 2001) and supports effective group performance (Klimoski & Mohammed 1994; Mathieu et al. 2000). as well as effective group coordination (Webber et al. 2000). On the other hand, too high levels of shared mental models or identical mental models can also be harmful for group functioning as it may result in groupthink where the potential for individual contributions is diminished (Klimoski & Mohammed 1994). Many individual group members, especially from the second level strategy group, indicated in the interviews that they acquired formal training (university degrees and company directors’ training) and informal training (workshops, conferences) with regard to strategic management where the concept of strategic thinking has

been addressed. Although training in these areas may provide group members with a broad and general understanding of strategic thinking, this cannot not cause identical mental models of strategic thinking as the literature shows that many other aspects such as an individual's core beliefs and values, relevant experiences and exposure to specific events also have an important effect on shaping individual mental models (Denzau & North 1994; Fiske & Taylor 1991; Mathieu et al. 2000). Therefore, in this study, the indication of high levels of agreement within groups does not reflect identical mental models, but refers to high levels of similarity about strategic thinking in groups. Mental model similarity relates to groupthink and groupshift and this will be further discussed in Section 6.2.3.

Across-levels results

To address the levels of agreement of task mental models across the three levels of strategy groups, Proposition 7 applies:

P7: High levels of agreement of task mental models across strategy groups support the development of strategy in organisations.

The results of this study are in agreement with P7. The results from the qualitative content analysis show that all three strategy groups apply strategic thinking by including the strategic thinking elements in developing organisational strategy (see Section 6.2.1). The results show a high level of agreement in the content of the task mental model for 'thinking about sustainable competitive advantage' for Strategy Group Level 1 and 2 where both groups acknowledge the importance of achieving sustainable competitive advantage and identify efficiency measures as an important aspect in delivering council services. Although the results show low levels of agreement within Strategy Group Level 1, the issues pertaining to sustainable competitive advantage do emerge, although it is not shared by most group members and are in agreement to the views of Strategy Group Level 2 members. The results from the quantitative content analysis, as explained in the previous section (Section 6.2.1), indicate that, overall, Strategy Group Level 2 achieves the highest performance in the application of strategic thinking. This may be linked to reasons related to

education, training and extensive experience as discussed previously. In contrast, Strategy Group Level 3 focus more on the practical aspects of ensuring efficiency in how council services are delivered and mention the corporate and community plans frequently, rather than addressing higher level issues related to sustainable competitive advantage such as how the council could compete with neighbouring councils through seeking economic development opportunities. Therefore, the level of agreement between Group Level 1 and 2, and Level 3, is rated as medium. The Leximancer results confirm this—the map display shows a medium level of agreement among all three groups because the maps look differently, although similar concepts are included in all of the maps. Further to this issue, the differences between strategic and operational thinking as it applied to the different strategy group levels are discussed in Section 6.2.3.

Linked to the theoretical perspective that employees on multiple organisational levels are involved in strategy development (DiVanna & Austin 2004; Graetz 2002), the results confirm that strategic thinking occurs on various organisational levels in regional councils, although the level of agreement among the strategy groups is rated as medium. This demonstrates that strategy groups on different levels make shared, but also unique, contributions toward strategy development.

The level of agreement for the element ‘thinking holistically’ across the three levels is rated as ‘medium’ because of the various contents of this element in each of the strategy groups as explained in the previous section. The reason for the different approaches among strategy groups may be linked to various levels of education, knowledge and experience, where the second level strategy group has the advantage of years of council experience, high level education and qualifications that are required for their positions. The high level of agreement across strategy groups with regard to the elements ‘thinking analytically and creatively’ and ‘thinking long-term about the future’ may be explained by the shared understanding about strategy development that many of the strategy group members acquired through formal and informal training in strategy, as explained previously. The quantitative content analysis confirms this—when the results are compared according to the elements of strategic thinking, the levels of agreement

among strategy groups *per element* are all rated as high because the average scores for each group are all clustered close together at the top end of the scale.

The theory about the effects of agreement among mental models as discussed for Proposition 6 also applies to the shared mental models among strategy groups. High levels of agreement among strategy groups about mental models of strategic thinking have a positive effect on strategy development (Klimoski & Mohammed 1994; Miles & Kivlighan JR 2008). The strategy groups demonstrate the inclusion of the same set of elements of strategic thinking in their thinking about strategy development. This supports discussions among these groups by providing similar conceptualisations about the task and task requirements and leads to more effective problem solving (Klimoski & Mohammed 1994; Mathieu et al. 2000; Rentsch & Woehr 2004; Webber et al. 2000).

Research Question 2 Conclusion

Research Question 2 asks what the level of agreement of the task mental models of strategic thinking among strategy groups is. The results of this study show that medium to high levels of agreement about the task of strategic thinking occur within and across strategy groups. Some researchers warn against over reliance on shared information and the development of identical mental models (Klimoski & Mohammed 1994), but the results of this study indicate that although some of the strategy group members attended the same training courses about strategy development, their mental models about strategic thinking are not identical. This study shows that the development of mental models includes many aspects influencing individual mental models such as individual experiences and beliefs and, therefore, mental models of individuals and groups can never be identical. The results confirm Fiol's view that individual characteristics lead to diversity in mental models where group members concurrently agree and disagree to some extent (Fiol 1994). This study further confirms the theory that high levels of agreement among group members' mental models enhance group performance (Cannon-Bowers & Salas 2001). The results show that in Strategy Group Level 2, higher levels of agreement regarding task mental models of strategic thinking exist in comparison to Strategy Group Level

1. The results of the scenario exercise, where the practical application of strategic thinking was assessed, show that Strategy Group Level 2 performs overall better than Strategy Group Level 1. In the next section, the results of the content of the shared group-functioning mental models are discussed.

6.2.3 RQ3: What is the shared group-functioning mental model of strategy groups?

To obtain information about the shared group-functioning mental models of strategy groups, three aspects of group-functioning are investigated and these aspects include ‘perceptions about other strategy group members’ knowledge, skills and attitudes’; ‘perceptions about how the group interacts’ and ‘perceptions about the roles and responsibilities of other group members’. The literature review in Chapter 2 further reveals other issues of importance when the group-functioning mental models are investigated and these are ‘groupthink and groupshift’ and ‘perceptions about boundary spanning’. From the interview results, an additional issue emerge regarding ‘perceptions about the balance between strategic thinking and operational thinking in strategy groups’, and this is investigated as an additional category. The interview data were analysed using qualitative content analysis and Leximancer analysis and the results were presented in Chapters 4 and 5. In this section, the results are discussed according to each of the aspects identified and the discussion closes with a conclusion about the research question.

Perceptions about other group members’ knowledge and skills

To address the perceptions that group members have about their fellow group members’ knowledge and skills, Proposition 8 applies:

P8: Strategy group members share perceptions about other strategy group members’ knowledge, skills, and attitudes when they apply their shared mental model of strategic thinking in considering the long-term direction of the organisation.

The results of this study are in partial agreement with P8. Overall, the results of Strategy Group Level 2 and 3 indicate that group members do share perceptions

about other strategy group members' knowledge, skills and attitudes. In contrast, Strategy Group Level 1 shows a low level of agreement regarding this element. The results from the qualitative content analysis reveal that members of Strategy Group Level 1 have different perceptions about their fellow group members' knowledge and skills about strategy development. In contrast, Strategy Group Level 2 demonstrate shared perceptions and rate their own group's knowledge and skills as very high and also suggest that Level 1 has limited knowledge and skills about strategy development. Members of Strategy Group Level 3 share the perception that the knowledge and skills in the group are between good and limited. Text extracts from the Leximancer analysis confirm these results.

The wide variety of responses in Level 1 may have been caused by the fact that this group was only recently created and that group members did not know each other very well at the stage when the interviews were conducted. As explained previously, the composition of the Level 1 strategy groups was instigated by the amalgamation process where members of this group were mayors and councillors of the previous shire councils and they had very little or no contact with each other prior to the establishment of the regional councils. Strategy Group Level 2, including the chief executive officers and the directors of council departments, however, is more stable in terms of group composition after amalgamation because many of the directors continue in their positions in council after amalgamation and continue to work with other directors with whom they personally are well-acquainted with and worked with previously. Although some changes have been made to this group, the majority group members acknowledge and are familiar with the knowledge and skills of their fellow group members. The members of Strategy Group Level 3, who have been working together for a longer period of time, are well acquainted and know more about each other's individual knowledge and skills, hence the shared perceptions about this issue.

The literature review in Chapter 2 indicates that shared mental models include an understanding of each group member's knowledge, skills and roles and it has been labelled as 'interpositional knowledge' (Fiore & Schooler 2004 p. 139). It was explained previously that it is essential that each team member possesses knowledge about other group members' capabilities so that each group member's

full potential in the group can be exploited. The results from this study with regard to Strategy Group Level 1 shows that group members within these groups have a wide variety of perceptions about the knowledge and skills of their fellow group members and this indicates a low level of interpositional knowledge. This group was recently formed and this can be related to the first stage of the group formation stages as proposed by Tuckman (1965). Group members may be experiencing some of the difficulties and uncertainties associated with the initial stage of forming. This first stage is characterised by a great deal of uncertainty about the purpose, structure and leadership in a group (Robbins et al. 2008) and this is displayed in the varied perceptions about the knowledge and skills of fellow group members and the roles that each played in the structure of the group. As this group was in the first stages of group development (Tuckman 1965), dimensions such as groupthink (Peterson et al. 1998) and groupshift (Clark III 1971; Robbins et al. 2008) did not emerge. Although the results for Strategy Group Level 1 are not in agreement with this proposition, it is suggested that if the study had been conducted at a later stage, allowing for the development of this group, this group may have achieved results similar to the other two groups. Strategy Group Level 1 has optimistic perceptions about the achievement of the goals of their strategy group in the long-run and group members have positive attitudes towards developing strategy and, therefore, the results are in agreement with this proposition.

Perceptions about how the group interacts

To address the perceptions that group members have about how their group interacted, Proposition 9 applies:

P9: Strategy group members share perceptions of how the group interacts when they apply their shared mental model of strategic thinking in considering the long-term direction of the organisation.

The results of this study are not in agreement with P9. The results obtained from the qualitative content analysis indicate that all three of the groups are not united

in trying to reach their goals. This is confirmed by the text extracts obtained through the Leximancer analysis.

Within the context of the new regional councils, strategy group members report difficulties with amalgamation and under-developed communication processes within and across groups that are the symptoms of newly-established groups. All groups indicate that they expect this to improve over time as amalgamation settled and groups have the opportunity to work together more often. Again, this situation can be linked to the group formation stages where these groups are in the forming stages (Tuckman 1965) where uncertainty and confusion are present because members did not choose to work with each other, and their task and group expectations are not formalised. Fiore and Schooler (2004) indicate a link between interpositional knowledge and group interaction and found that an increase in interpositional knowledge (increased knowledge about group members' skills and knowledge) help to overcome information-sharing problems that are sometimes experienced in group interaction. To develop shared perceptions, group members must cultivate shared knowledge, attitudes and beliefs (Cannon-Bowers & Salas 2001) and this can only occur through regular contact and communication. Shared mental models only start to develop during the second and third stage of group formation where groups progress from intra-group conflict to the development of close relationships (Cooke et al. 2000; Mathieu et al. 2000; Mohammed & Dumville 2001; Robbins et al. 2008). As indicated earlier, if the study had been conducted at a later group development stage allowing for maturity of the groups, this proposition may have been supported, however, at the time of the study the results are not in agreement with this proposition.

Perceptions about the roles and responsibilities of other group members

To address the perceptions that group members have about their fellow group members' knowledge and skills, Proposition 10 applies:

P10: Strategy group members share perceptions of the roles and responsibilities of other group members when they apply their shared

mental model of strategic thinking in considering the long-term direction of the organisation.

The results of this study are partially in agreement with P10. The results from the qualitative content analysis indicate that members of Strategy Group Levels 2 and 3 share perceptions about the roles and responsibilities of other group members, but Strategy Group Level 1 present a variety of perceptions about roles and responsibilities in their group. These results are confirmed by the text extracts obtained from the Leximancer analysis. Because the results of two of the three groups indicate that group members do share perceptions about how the group interacts, this proposition is in agreement with the results. Although the results for Strategy Group Level 1 are not in agreement with this proposition, it is suggested that if the study had been conducted at a later stage allowing for the development of this group, this group's results may have concurred with the other two groups' results.

As discussed before, although all the groups are newly-established, the composition of group Level 1 endures the most significant changes with newly-elected councillors, mayors of previous shire councils that had to step down to positions of councillors and new chief executive officers. These changes, especially those regarding to changes in roles (from mayor to councillor), may have a huge impact on the perceptions of group members about the roles and responsibilities of other group members. Again, the group formation stages have an impact here where this group is experiencing all the effects of a group in the forming stages (Tuckman 1965). To overcome the ambiguities associated with this first group formation stage, Fiore and Schooler (2004) suggest that process mapping may be used to facilitate communication among group members and introduce group members to the roles and responsibilities of each group member. As the group develops, their communication about the expectations of each group member may improve and their perceptions about the roles and responsibilities of other group members may become more shared.

Groupthink and Groupshift

The results indicate that, in all three groups, groupthink do not occur because new ideas are brought into the group by at least one or two group members and the role of ‘devils’ advocate’ is taken on by some group members during discussions. It is explained in the literature review in Chapter 2 that groupthink is not equivalent to shared mental models. Shared mental models aim at building shared frameworks that are based upon shared experiences, whereas groupthink is a social process driving conformity as the outcome of sufficient searches for information and alternatives (McCauley 1998). Robbins et al. (2008) contend that the inclusion of a ‘devils’ advocate’ role in the roles of group members can assist in challenging conformity and the search for alternative solutions. Members of the strategy group report that the input from those members taking on the ‘devils’ advocate’ role is encouraged and is received in a positive way - this ignite new debate and discussions about the issue.

Furthermore, it is suggested that groupthink occurs more frequently when group members work closely together, share similar values and seek cohesiveness and affiliation when facing a possible crisis (Whyte 1998). In this regard, the strategy groups are newly-created groups and they are still in the forming stage of group development where they are not working closely together or sharing similar values. It is concluded that groupthink do not occur in these strategy groups. The same conclusion applies to groupshift; groupshift is described as a type of groupthink (Robbins et al. 2008) and because groupthink does not occur in the strategy groups, groupshift does not apply also.

Boundary Spanning

The results show that all three strategy groups do apply boundary spanning to liaise with internal and external stakeholders and create and transfer knowledge. All the groups indicate that they regularly appoint consultants to assist them in their work by incorporating the expertise from those consultants. They also report that they consult within the councils to obtain information and develop their skills in various aspects. Ancona (1992) posits that groups practising boundary spanning are more likely to achieve their goals and are more effective.

Groups need to interact with external stakeholders to assist them in meeting their goals (Marrone et al. 2007). In this regard, the strategy groups indicate that they liaise closely with the community, businesses and residents to enable them to develop community and corporate plans.

Boundary spanning can also be related to an element of strategic thinking, namely, 'holistic thinking' where holistic thinking requires consideration of all stakeholders, internal and external to the organisation. In this study, group members indicate that they considered a holistic view as very important and that the demands of the region, council and community are taken into account in their strategy development processes. They also indicate that they consult with internal and external stakeholders and therefore it is concluded that members in all strategy groups practise boundary spanning.

Perceptions about the balance between strategic thinking and operational thinking

The results of the perceptions that group members have about the percentage of time spent on strategic thinking versus operational thinking was presented in Table 4.6 for Strategy Group Level 1, Table 4.7 for Level 2 and Table 4.8 for Level 3. The results show that all groups share the perception that the first level strategy group should be involved with strategic thinking for most of their time and a very small amount of time should be spent on operational thinking. However, they all perceive that the actual time spent on strategic thinking is very low. They perceive that the same trend occurs in Strategy Group Level 2; although they expect slightly lower percentages of time spent on strategic thinking than the first level group. For Strategy Group Level 3, the first and second level groups indicate that percentage time spent on strategic thinking should be low (less than twenty percent) while the third level group indicate that it should be at least thirty percent. Strategy Group Level 1 and 2 report that they perceived the actual time the third level group spend on strategic thinking as similar to what it should be. On the other hand, the third level strategy group indicate that the real percentage time spent on strategic thinking is actually lower than what it should be. Because the third level strategy group is involved with

the development of the corporate plan, they feel that they need to spend more time on strategic thinking than operational thinking but, because of the amalgamation and the pressures to integrate, resource and finalise the operational issues within their departments, they have no choice but to focus more on operational issues.

The perceptions about the requirement of employees at the top management level to be focused on strategic issues and apply strategic thinking is confirmed in the literature where developing the long-term direction is viewed as the responsibility of the senior managers in the organisation (De Wit & Meyer 2005; Hanson et al. 2005; Johnson et al. 2005). As discussed in the literature review in Chapter 2, the development of organisational strategy requires crucial strategic thinking competencies that include envisioning, abstracting and multivariate thinking (Linkow 1999) and the first level strategy group has an essential role to play in strategy development.

It was stated in Section 6.2.2 that the results of this study indicate that strategic thinking occurs on levels throughout the organisation, but the balance of strategic thinking as opposed to operational thinking is not clarified. The results of this element show that although strategic thinking occurs on Strategy Group Levels 1, 2 and 3, the first level strategy group is required to spend most of their time on strategic thinking and a small percentage of time on operational thinking. The amount of time allocated to strategic thinking decreases on levels 2 and 3 and the time allocated to operational thinking increases. These results have important implications for the debate about the application of strategic thinking in organisations. This study contributes by clarifying the need for strategic thinking on all organisational levels but indicates that the same degree of strategic thinking is not suitable on all organisational levels. This study demonstrates that top level strategy groups concentrate on strategic thinking and are involved with minimal operational issues and subsequent operational thinking. It is required that they focus on strategy development and apply their strategic thinking competencies. On the other hand, lower level strategy groups are required to concentrate on their operational activities, although they have to be involved in strategy development and apply strategic thinking to a lesser degree. The

strategy groups on different organisational levels complement and support each other with regard to their focus areas and this can only be achieved through two-way and effective communication between strategy groups.

Research Question 3 Conclusion

Research Question 3 asks what the shared group-functioning mental model of strategic thinking is. To answer this question, important aspects related to shared group-functioning mental models are investigated and the results indicate that two of the three propositions related to shared group-functioning mental models are partially in agreement with the study results (P8 and P10), while there is no agreement between the results and the third (P9) proposition. Although group members share perceptions about the roles and responsibilities of other group members and group members share perceptions about the knowledge and skills of other group members, no evidence is available that strategy groups share perceptions about how the groups interact. As explained in the discussions, these results may be linked to the initial stage of group forming where the interviews were conducted shortly after the establishment of the new regional councils and strategy groups. The significance of this finding is that the development of shared group-functioning mental models can be linked to Tuckman's (1965) group development stages. During the first stage of group development, the forming stage, individual mental models are actively applied during group interaction. Each individual's personal mental model influences his or her perceptions and expectations of the group because little information about their fellow group members is available. Only during the second (storming) and third (norming) stages do shared group-functioning mental models begin to develop as result of regular contact between group members and many discussions and communication about certain issues. During these phases, group cohesion and closer relationships start to develop that result in shared perceptions and ultimately shared group-functioning mental models about specific issues. The final stage of 'performing' commences when high levels of agreement about group-functioning mental models have been achieved and this supports group interaction and, ultimately, group performance. It needs to be noted that although all group members do not share perceptions about how the groups interact, they all indicate that their groups are still developing and that they

predict the group-functioning to improve in future and this confirms the link with the group development stages.

With regard to the other aspects related to shared group-functioning mental models that are investigated, the results show no evidence of groupthink and groupshift and indicate that members of all groups practise boundary spanning. This confirms the results regarding the strategic thinking element 'holistic thinking' where the results provided evidence of group members applying holistic thinking in strategy development. When linked to the group development stages, these results show that groupthink and groupshift do not occur at the initial stages of group development and it is assumed that it can transpire only during the performing phase when shared group-functioning mental models have been well-established and high levels of agreement among group members regarding group-functioning appear.

Furthermore, the results indicate shared perceptions and understanding about the requirements for different levels of strategic thinking and operational thinking across strategy groups in the organisation. As explained previously, the significance of these findings lies in clarifying the required degree of strategic thinking on various organisational levels. Although strategic thinking is required throughout the organisation, the degree of strategic thinking across the different organisational levels differs where the top levels require high degrees of strategic thinking and low degrees of operational thinking and on the lower, operational levels, the opposite is required. Although strategic thinking among members of strategy groups on the third level is essential, it is to a much lesser degree required, and operational staff's main focus must remain on operational issues.

In the next section the levels of agreement of the group functioning mental models will be discussed.

6.2.4 RQ4: What is the level of agreement of the group-functioning mental models amongst strategy groups?

In this section the aspects of group-functioning mental models are discussed but two aspects, ‘groupthink and groupshift’ and ‘perceptions about boundary spanning’, are excluded because it was evident, as discussed in the previous section, that groupthink and groupshift did not occur in any of the strategy groups and boundary spanning was practised in all of the strategy groups. First, the levels of agreement within each strategy group with regard to the abovementioned aspects regarding shared group-functioning mental models are discussed. This is followed by a discussion of the across-levels results. Finally the discussion closes with a conclusion about the fourth research question.

Within-group agreement

To address the levels of agreement among individuals in each strategy group, Proposition 11 applies:

P11: Successful strategic thinking in organisations requires high levels of agreement of group-functioning mental models among group members within a specific strategy group.

The results of this study are in agreement with P11. The results from the qualitative content analysis indicate high levels of agreement across all aspects related to group-functioning for members of Strategy Group Level 2 and 3. In contrast, Strategy Group Level 1 present varied within-group results for those aspects. For the perceptions about other group members’ knowledge, skills and attitudes, this group present a low level of agreement, indicating that individual members have different perceptions about this aspect. For the perceptions about how the group interacts; perceptions about the roles and responsibilities of other group members; and perceptions about the balance between strategic thinking and operational thinking, this group present a medium level of agreement in all three instances—indicating that although they shared perceptions about some issues, their perceptions about these aspects are different. The reasons for the

different perceptions in Strategy Group Level 1 can be linked to group composition and group stages as previously discussed.

The importance and advantages of shared mental model agreement are discussed in the results of research question two where the levels of agreement of the task mental models are addressed in Section 6.2.2, and this study confirms previous research by Klimoski (1994), Mathieu et al. (2000), Rentsch and Woehr (2004) and Webber et al. (2000). The same theory and principles apply to the level of agreement of group-functioning mental models and will not be duplicated here.

Across levels results

To address the levels of agreement across the three strategy groups, Proposition 12 applies:

P12: Successful strategic thinking in organisations requires high levels of agreement of group-functioning mental models among strategy groups.

The results of this study are in agreement with P12. The results from the qualitative content analysis indicate that the levels of agreement across Strategy Group Level 1, 2 and 3 are presented as ‘low’ for the perceptions about other strategy group members’ knowledge and skills, meaning that the various strategy groups have different perceptions about the knowledge and skills available in their groups. In contrast, all strategy groups indicate high levels of agreement about the attitudes that group members have towards strategy development, suggesting that all members and all groups have positive attitudes towards developing strategy. For the perceptions about how the group interacts, perceptions about the roles and responsibilities of other group members and perceptions about the balance between strategic thinking and operational thinking, the levels of agreement present as ‘medium’. This signifies that the different groups have different perspectives about these aspects as discussed in the previous section. Although the levels of agreement are different and group members and strategy groups indicate various perspectives about the aspects of group-functioning that are investigated, they unanimously indicate at several

instances that they are part of recently-created groups and they predict that group-functioning would improve over time as they worked together as groups.

The literature about shared mental models proposes that when groups work together they develop shared expectations of the task and develop shared knowledge that is compatible, complementary and shared with other groups (Cannon-Bowers & Salas 2001; Salas & Cannon-Bowers 2001). When considering the medium level of agreement among these groups it may be interpreted as a positive effect on strategy development as the contributions from various groups were unique, but complementary, in strategy development.

Research Question 4 Conclusion

Research Question 4 asks what the levels of agreement of the group-functioning mental models of strategic thinking are. To answer this question, the within-group levels of agreement were discussed and it was indicated that Strategy Group Level 1 presented various levels of within-group agreement, but Strategy Group Level 2 and 3 presented consistent high levels of agreement within their groups.

Regarding level of agreement across levels, the groups presented a low level of agreement across the groups for perceptions about other strategy group members' knowledge and skills, a high level of agreement across the groups for perceptions about the attitudes towards developing organisational strategy and medium levels of agreement across the groups for the other aspects. Because of the various levels of agreement for each of the categories of group-functioning, the overall conclusion is that medium levels of agreement of the group-functioning mental models of strategic thinking occurred. This research question focuses on the perceptions of group-functioning and, as discussed previously, the fact that the data were collected shortly after the strategy groups were established had a significant impact on the results. The strategy groups were still in the initial stages of group development and their perceptions about the knowledge and skills of their fellow group members were influenced by their unfamiliarity. For successful group performance, cohesiveness is required (Mudrack 1989) and it was found that cohesiveness is related to the group's productivity depending on

the performance-related norms of the group (Evans & Dion 1991; Robbins et al. 2008). If performance-related norms are high and high quality cooperation within and outside the group are required, a cohesive group will be more productive than a less cohesive group. To increase cohesion in groups, Robbins et al. (2008) suggests that group members increase the time spend together. Applied to the strategy groups, it is envisaged that over time the strategy groups will spend more time together as a group and develop cohesiveness that will improve their performance and increase their productivity. The demands on regional councils and strategy groups to develop their strategic plans as required by the Queensland Government (2007) within the suggested timeframes (see Section 2.7.3) will also lead to an increase in their participation in strategy groups that may contribute towards the further development of strategy groups in regional councils. The next section provides overall conclusions about the research problem.

6.3 Conclusions about the research problem

In Figure 2.2 (Chapter 2) the proposed conceptual framework for this study is presented. This framework indicates the interplay between mental models and strategy development and was created before the results of the study were analysed. The results influenced the initial framework and although some minor changes have been made according to the results, the results confirmed and expanded the initial conceptual framework. The final conceptual framework for this study is presented in Figure 6.1.

The results confirm that individuals' thinking and experience in a particular context influence their current approach to strategic thinking. It is recognised that staff members of the regional councils are influenced by their previous involvement in the shire councils with regard to their experiences and knowledge that they accumulated through their involvement in dealing with strategic issues. When they enter into the new regional councils and are appointed to new positions and work groups such as the strategy groups, their individual mental models about the new tasks, their new roles in the regional council, their fellow employees and group members are influenced. Individuals enter the new regional councils with their own beliefs about amalgamation; some with very

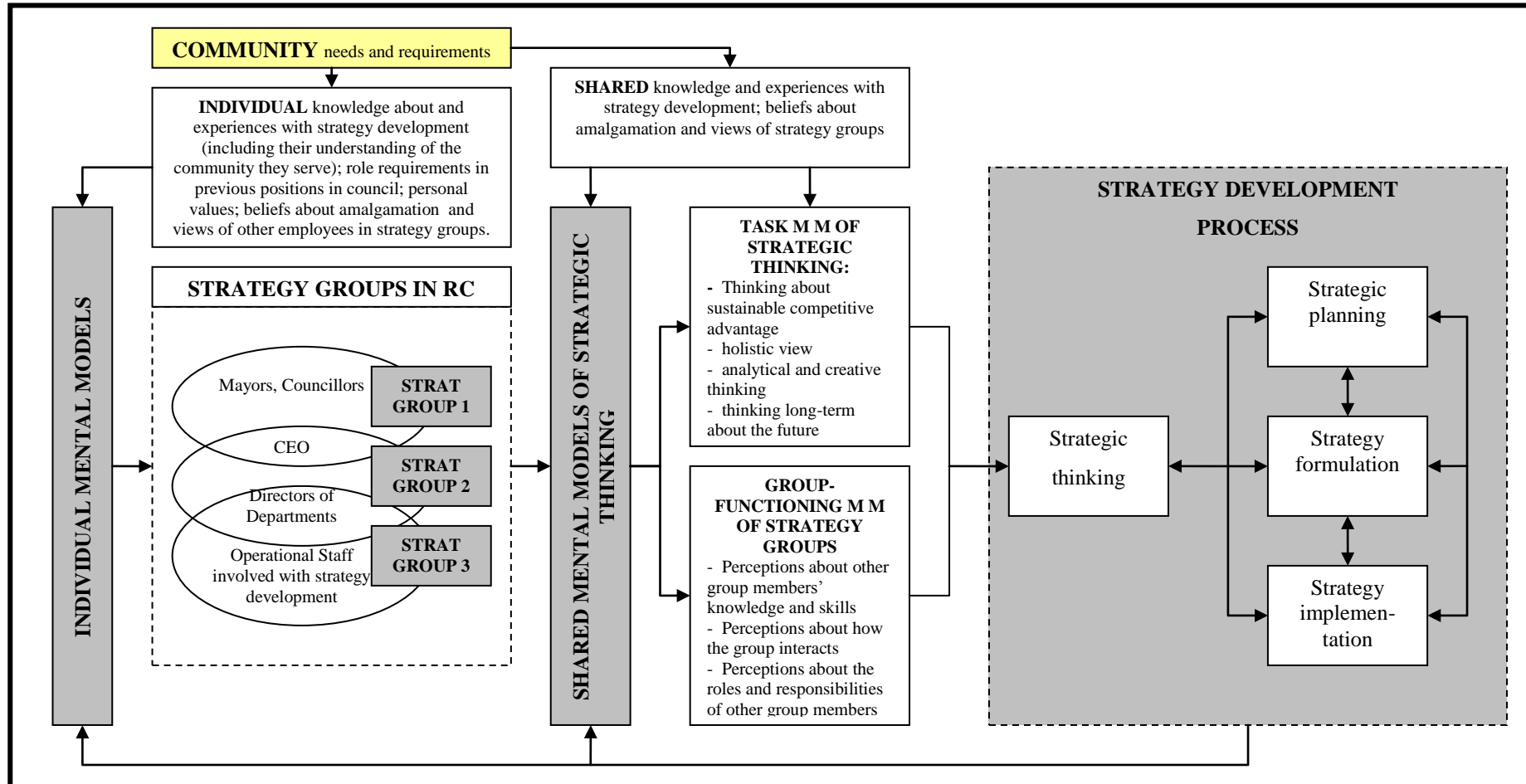
positive views, while others have feelings of trepidation. These issues have important implications for their individual mental models of strategic thinking. These contextual factors need to be incorporated into the debate about the development of individual strategic thinking mental models, as well as shared mental models.

In the original conceptual framework, it is indicated that employees in the regional councils are assigned to strategy groups, but before the study was executed it was not clear how these strategy groups were structured. The final model provides clarity on the structure of the strategy groups and indicates that three main strategy groups are presented in regional councils: the first level strategy group including the mayor, councillors and chief executive officers, the second level including the directors of the council departments, and the third level includes the director of departments involved with strategy development and the operational staff working in this department. In one of the councils a separate directorate was established to develop the organisational strategy for the council and in the other two councils the Departments of Corporate Services and Corporate Governance respectively were involved with strategy and corporate plan development.

Again, it is noted that the results contributes to the debate about strategy making on various levels of an organisation by confirming the view of some researchers that strategy development occurs on various levels in the organisation. The expanded conceptual framework identifies the members of the strategy groups on each level and also shows the overlap of the groups that supports communication and interaction between strategy groups and integration of the output of each of the groups.

An addition to this model is the inclusion of the ‘community’ and the impact that it has on the individual and shared mental models. The results of the study indicate that the mental models of especially the councillors, as elected members but also other council employees, are directly influenced by the needs and requirements of the community that they served. This influenced the framework for their thinking about the regional councils’ strategies.

Figure 6.1 Conceptual framework



Source: Developed for this study

Within each of the strategy groups and among strategy groups, shared mental models begin to develop as strategy groups work together and shared their individual knowledge and thinking about strategy development. One issue that is unique to the regional councils and an addition to the original model is the sharing of beliefs and attitudes regarding the amalgamation process. Although this issue is unique to the developmental stage of regional councils in this study, researchers should be aware that similar issues may also emerge in other contexts, for example, in mergers and acquisitions in private sector companies.

The shared mental models of strategic thinking include a component of the task of strategic thinking and one about the group-functioning aspects of the strategy group. Contrary to what is discussed in the literature, the results show stronger levels of agreement in shared task mental models than in group-functioning mental models. As discussed previously, this is related to the group development stage that strategy groups were in during the data gathering phase and although the group-functioning mental models did not display high levels of agreement, there were indications that this would improve over time and, therefore, this component is still valid in the final conceptual model.

A further change to the conceptual model is the development of one of the aspects of the task mental models. Initially, the first element was indicated as ‘thinking about competitive advantage’ as derived from a theoretical analysis of models of elements of strategic thinking. Further investigation and support obtained from the results show that a component of sustainability needed to be included in this element and this element is changed to ‘thinking about sustainable competitive advantage’. This is an important contribution of this study and the conceptual framework is adjusted accordingly.

Finally, the conceptual model confirms that shared mental models influence the strategy development process by the mechanism of entering through strategic thinking. Strategic thinking is shown as an action that occurs prior to strategy formulation, planning and implementation, although strategic thinking influences and is influenced by each of these steps. What this means is that strategic thinking—that is shaped by individual and shared mental models of strategic

thinking—occurs *before* the organisational strategy is formulated to provide a range of creative alternatives from which the most appropriate one can be selected to be formulated in detail. Strategic thinking also influences the planning and implementation of the chosen strategy because any organisational change or plan needs to consider the effect that it will have on the future of the organisation, its stakeholders and the natural environment. In this regard *sustainability*, as part of shared mental models of strategic thinking, features prominently and is another contribution of the study. The success of the organisational strategy depends on its strategic adoption and development of socially and ecologically supportive processes and to achieve this strategic adoption, the mental models of individuals and groups must be changed accordingly. As indicated in the conceptual framework, the strategy development process feeds back to individual and shared mental models. Individuals involved in the strategy development process and all other employees affected by this process gained new knowledge and experiences from this and their individual beliefs may have also changed. This impact on their individual mental models and, within strategy groups, their shared perceptions may also change. It is clearly a continuous and iterative process and can be related to organisational learning.

The acknowledgement of the impact that individual and shared mental models has on strategic thinking and, ultimately, the strategy development process; is a significant contribution to current theory because it expands the traditional strategy development models to include cognitive aspects of employees and its influence on strategy development. It recognises the human component and clarifies how and why mental models are important in strategy development.

6.4 Implications for theory and practice

The findings of this study draw attention to a number of important implications for theory on organisational strategy, strategic thinking and methodology. The discussion of the implications of this study is presented in three sections: the first section addresses the implication of the results for theory, the second addresses the implication for methodology and the third is devoted to the implications for practice.

6.4.1 Implication of the results for theory

Closing the theoretical gap between mental models theory and strategic thinking theory:

Although strategic thinking is identified as an essential component of strategy development, the cognitive component of strategists has received less attention in research and the need for further research about this component has been identified (Bonn 2001; Hutzschenreuter & Kleindienst 2006; Zahra & O'Neill 1998). Cognition, on the other hand, has been studied and researched for decades and researchers in the field of cognitive psychology identified shared mental models as frameworks of thinking that influence individual and shared thinking (Denzau & North 1994; Fiske & Taylor 1991; Gentner & Stevens 1983; Jacobs & Heracleous 2005; Langfield-Smith 1989; Mathieu et al. 2000). The problem is that the link between strategic thinking and mental models has not been addressed in the literature and the gap in theory between strategic thinking and how strategists apply mental models of strategic thinking was identified. Therefore, this study bridges this gap by developing theory about shared mental models of strategic thinking and its role in strategy development.

Providing a framework of key strategic thinking elements

Strategic thinking has been investigated by various researchers and a number of researchers identified elements of strategic thinking (Liedtka 1998) dimensions of the strategy construct (Venkatraman, N. 1989); correlates of strategic thinking (Graetz 2002) or success criteria for strategy formulation that included aspects of strategic thinking (Acur & Englyst 2006). These aspects are investigated and assessed in the study and a key set of strategic thinking elements are identified to represent strategic thinking. The implication and contribution of this framework of strategic thinking element are that it provides a set of key elements to understand strategic thinking that can be used to assess task mental models of strategic thinking. The strategic thinking elements are also operationalised and methods such as scenarios are developed as part of the research design to investigate the various elements. This provides a contribution to current methods of eliciting strategic mental models which are currently not well established as

noted by various authors (Klimoski & Mohammed 1994; Mohammed, Klimoski & Rentsch 2000; Webber et al. 2000).

Incorporating strategic sustainability into strategic thinking

The findings of this study indicates that one of the proposed key elements of strategic thinking, ‘thinking about competitive advantage’, has to be extended to include strategic sustainability. Where other researchers focused mostly on the competitive advantage aspect, this study finds that sustainability is a crucial aspect that needs to be included in strategic thinking. This element is changed to ‘thinking about sustainable competitive advantage’ to include strategic sustainability into the elements of strategic thinking. This is a significant contribution to theory about strategic thinking because human and ecological sustainability have become one of this century’s key debates that impact on organisations and, subsequently, the development of organisational strategy. This means that strategic thinking needs to be directly linked to sustainability to ensure competitive advantage in future.

Extending strategic management theoretical frameworks to include shared mental models

Typical traditional strategic management models (Ansoff 1987; Bourgeois & Brodwin 1984; Mintzberg & Waters 1985; Nonaka 1988; Shrivastava & Grant 1985) do not indicate strategic thinking or mental models of strategic thinking as a separate component or action in strategy development, although it may be viewed as part of other components. The strategic process as presented by De Wit and Meyer (2005) indicates strategic thinking as a phase precursory to strategy formulation, but does not show mental models of strategic thinking in their model—although their discussion about strategic reasoning explains mental models as an important aspect of cognitive activities. The findings of this study indicate that strategic thinking is precursory to the strategic management process and that task mental models of strategic thinking and group-functioning mental models play a crucial role in strategic thinking and, ultimately, in the strategic management process. This needs to be incorporated into strategy development

models. The implications of this finding are that they expand the understanding of the strategy development process to include mental models of strategic thinking into this process.

Group-functioning mental model agreement is related to stages in group development

The findings of the study indicate that the development of shared group-functioning mental models is related to the stages of group development. The results from some of the strategy groups indicate low levels of agreement within groups for group-functioning mental models where group members never worked together before and are not well acquainted. These groups are in the initial forming stage of group development and reported low levels of interaction among group members because the groups are recently established. The implications of these results for theory on group-functioning mental models are that the impact of the stage of group development needs to be acknowledged when assessing group-functioning mental models. The contribution of this study is extending the understanding of group-functioning mental models by incorporating group development theory into theory about group-functioning mental models.

Contribution to debate about role players in strategic thinking

The literature indicates that there are different views about who in the organisation should be involved with strategy development and apply strategic thinking. Some researchers (Ansoff 1965; Child 1972; Drucker 1970; Porter 1980) view the senior managers as responsible for setting the organisation's strategy, determining the direction of the organisation and for applying strategic thinking; while others (DiVanna & Austin 2004; Graetz 2002; Hanford 1995; Mintzberg 1990) argue that employees from all organisational levels should ideally be involved in the strategy development process and that strategic thinking should take place on multiple organisational levels. The findings of this study indicate that there are strategy groups on various organisational levels and members of these groups apply strategic thinking in developing organisational

strategy. Although strategic thinking is evident on all organisational levels, the degree of strategic thinking as opposed to operational thinking on these levels is different. For the top level, a high degree of strategic thinking and a low degree of operational thinking are evident and the degree of strategic thinking decreases on the second and third level. This study contributes to the debate in the theory by providing evidence that strategic thinking occurs on multiple organisational levels in regional councils and extends this theory by showing that although strategic thinking is applied on various levels, the degree of strategic thinking decreases towards the lower organisational levels.

6.4.2 Implications of the results for methodology

Along with the theoretical implications, this study also has implications for methodology. These findings and contributions will now be briefly addressed:

Real findings from real organisations

The difficulties related to assessing abstract mental models about organisational issues causes researchers in this area to fall back on experiments executed in laboratory settings and limited research has been devoted to testing application in field settings (Klimoski & Mohammed 1994; Kraiger & Wenzel 1997; Mohammed, Klimoski & Rentsch 2000; Webber et al. 2000). The outcome of this situation is a dearth of studies addressing real organisational issues and providing mental model results obtained from real organisational settings. In this regard, this study makes a contribution to theory on mental models of strategic thinking as it addresses a contemporary issue, mental models of strategic thinking, and provides results form real organisations (i.e. regional councils). This also has implications for practice and will be further discussed in the next section.

Levels of analysis:

Most management issues and problems implicate multiple organisational levels, but most research apply only a single level of analysis (Hitt et al. 2007). Hitt et al. (2007) suggest that research on more than one level is required for

measurement and analysis in investigations of research questions. This study incorporates various organisational levels, as well as various analysis methods and, therefore, contributes by suggesting methodology to investigate and analyse mental models of strategic thinking.

Method for assessing mental models

Research on mental models shows that methods related to measuring strategic mental models are not well-established (Webber et al. 2000). The existing methods for measurement are pervaded by various problems for organisational researchers and practitioners (Klimoski & Mohammed 1994). Researchers in this area voiced the need for fast, valid and more user-friendly measures of mental models (Klimoski & Mohammed 1994; Kraiger & Wenzel 1997). It is suggested that measurement may require the development and use of multiple types of measures to enable assessment of the complexities of mental models (Kraiger & Wenzel 1997). Drawing from existing methodologies related to measuring mental models, a new method for investigating mental models of strategic thinking is developed in this study. This method includes different data gathering methods and multiple analysis approaches. The method of assessment of mental models developed for this study provides a significant contribution to the methodology literature as this is the first attempt to develop a way to investigate mental models of strategic thinking.

Development of a road map for the study

The application of various data gathering methods, analysis methods and application on various organisational levels can make the design of the research process very complex and convoluted. For this study, the data gathering process and the data analysis process were mapped out in flow diagrams to provide the researcher with a clear ‘road map’ to indicate how the data sets would be obtained during specific phases and how the results from each of the data sets will be dealt with in analysis to link to each of the research questions (see Figures 3.4 and 3.5 in Chapter 3). This method proved to be very helpful in

executing a large and complex study and may contribute to methodology by providing an example of a data gathering and analysis plan.

6.4.3 Implications of the results for practice

Further implications of the results of the study relate to implications for practice. This study was applied to strategy groups in regional councils and the results provide specific contributions to this sector that is currently under-researched.

The implications of this study in regional councils is that through discussions about shared mental models, strategic thinking and strategy development that took place during the interviews, strategy group members became aware of the role of strategic thinking in strategy development and they could reflect on their own mental models of strategic thinking and those of their strategy groups. A number of interviewees commented on the value that they obtained through the interview discussions with regard to better understanding of shared mental models and strategic thinking and also the opportunity to discuss their frustrations about their strategy groups confidentially with a person outside of the council. The contribution of this study to practice is that the knowledge and understanding about strategic thinking in regional councils are extended. Presentations of the results to regional councils also contribute to expanding the insight of regional council employees about their own current strengths in strategy making.

Importance of alignment of mental models of strategic thinking within and among strategy groups

The literature on shared mental model agreement indicates that group performance is enhanced when group members have the same understanding of the domain (Klimoski & Mohammed 1994). The results of this study show high levels of agreement of task mental models and medium levels of group-functioning mental models of strategic thinking. This indicates that members of strategy groups have similar understanding of the elements of strategic thinking, but lower levels of shared perceptions about how the groups were functioning. The implications of these results is that strategy groups need to be aware of how their task and group-functioning mental models impact on the performance and

outcomes of their groups. The task mental models have to be aligned and also the group-functioning mental models where group members need to share perceptions about the skills and knowledge, and the roles and responsibilities of other group members. This contributes to creating awareness among strategy groups in regional councils about the importance of alignment of mental models of strategic thinking.

Assessment of mental models of strategic thinking

When regional councils appoint new staff to positions where strategic thinking is required, they need tools to assess individuals' strategic thinking abilities. This study provides a method for assessing strategic thinking through the scenario exercise. The method draws from Webber's (2000) methodology, but is focused more specifically on assessing strategic thinking skills in relation to the strategic thinking elements. Organisations can utilise this method in their selection and assessment processes in the appointment of new staff. Scenarios that are based on critical incidents related to the specific organisational position can be used to identify candidates' performance in applying each of the strategic thinking elements.

Timing of group-functioning mental models studies

It was indicated previously that group-functioning mental model agreement is related to the stages of group development. Further to this point, the results of the study show that the timing of the study had an influence on the investigation of the group-functioning mental models. Although the state-wide reform of Queensland's local government sector was announced in April 2007, the implementation of the reform was time consuming and, by the time that data were gathered for this study in February/March 2009, the integration of the former shire councils into the new regional councils was barely finalised. At that stage, only one of the three regional councils involved in the study had completed their corporate plan, while the other two councils were still developing theirs. Although the strategy groups have been created, they were only starting to meet on a regular basis. The investigation of group-functioning

mental models and the results related to this aspect were influenced by this aspect because the groups were still in the first stage of group development. The contribution towards future studies investigating group-functioning mental models is that it is recommended that group-functioning mental model investigations are conducted when strategy groups have matured beyond the initial stage of group development.

Managerial contributions

The execution of this study included communication with managers on three levels of Regional Councils, including staff in the positions of Councillors, Mayors, Chief Executive Officers, Directors of Departments and Managers of Sections. Although these study participants are in managerial positions, a significant number of them indicated that they had no formal management training, only extensive work and managerial experience in local councils. They indicated that the interview questions broadened their understanding of strategic management, strategic thinking and mental models and can contribute to enhance their managerial skills. By having a better understanding of how their own mental models can impact on the way that they think about strategy and how the interaction and communication in strategy groups influence their thinking, these managers' managerial skills can be improved.

For this study to make a contribution to the larger regional council community, the results of this study can be published in the New Public Management literature and specific Local Government publications such as the Australian Local Government Association.

6.5 Limitations of the research

While there are significant contributions of this research study, all research contains limitations that must be accounted for. This section will identify issues that influenced the findings.

The limitations related to the research methods were addressed in Section 3.9, Chapter 3, and linked to qualitative research, case study research and interviews

as primary source of data collection. The tactics and measures to overcome these possible limitations were addressed in that section. Further to the research methods' limitations, other possible limitations of the research have been identified.

First, the cross-sectional data analysis methods of this study provide a snap-shot of the mental models of strategic thinking at a specific time in the development of the regional councils which means that different results may have been obtained if another time-frame had been chosen. However, mental model theory indicates that mental models are not static and are continually developing and, therefore, the assessment of mental models of a group at a specific time is appropriate. It is suggested in the next section that this study be replicated in future to allow for analysis of response continuity and change over time.

Secondly, the results are based on self-report and, consequently, the limitations caused by self-report bias, where the participants may respond in a socially desirable way, may have occurred. However, to alleviate self-report bias, a variety of data gathering methods and analysis approaches have been incorporated into the research design and triangulation was applied to manage the self-report limitations and possible social response bias.

Finally, the results of the study rely on the individual and shared perceptions of strategy group members to provide insight into their mental models of strategic thinking. The subjectivity of measurements is a recognised limitation in perceptions research but, because this study is focused on what the individual and shared perceptions of strategy group members are in presenting their unique mental models, this approach is appropriate.

These potential limitations have been identified and appropriate strategic responses to address these problems have been included in the research design. They have been acknowledged, but these potential limitations do not detract from the significance of the findings and provide a basis for future research that will be discussed in the next section.

6.6 Directions for future research

With regard to the research area and research methods applied, a number of suggestions for future research were identified and include the following:

- Replication of this study after allowing time for the strategy groups to mature in their development stages. As indicated before, this study was conducted shortly after strategy groups were formed following amalgamation of the councils, and strategy groups were staged in the forming phase where shared mental models of group-functioning of the strategy groups were immature and in the process of developing.
- Replication of this study to include other regional councils in Queensland, Australia. This study included three regional councils in South East Queensland and by extending the study to include other regional councils in Queensland or even nation-wide, the findings may be generalised further.
- Replication of this study to include other sectors besides local government. Because small and medium size enterprises and their Chambers of Commerce play a significant role in the Australian economy and operate differently to local government, it will be interesting to investigate how strategy groups function and what the role of shared mental models of strategic thinking is in these organisations. Another sector that may benefit from such a study is state government, where state departments could be included in the research.
- Further investigation of the relationship between task mental models of strategic thinking and group-functioning mental models of strategic thinking. Although the literature clearly indicates that shared mental models include mental models of the task and those of the group involved, it does not provide details about the relationship between these mental models. More investigation into this issue will be beneficial to extend the theory on mental models.
- The results of this study indicated a possible link between the stages of group development and the development of shared group-functioning mental models. This can be investigated in follow-up research.

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- Further investigation into the effect of pro-activity, participative strategy development and discovery driven planning on mental models of strategic thinking. These issues were briefly addressed in the dissertation to show the links to the focus area of the study and can be further investigated in future research.
 - Investigation into streamlining methodology to assess mental models of strategic thinking. Although effective, the research methods applied in this study were time-consuming and complicated. The application of the interview technique with individual study participants and the subsequent analysis of each of the interviews placed extensive demands on time. It is suggested that the application of a survey-type questionnaire, similar to the ‘Foresight Style Assessment’ survey (van der Laan 2010), be developed to assess mental models for easier, more user-friendly approaches to data gathering and analysis.

6.7 Summary

The main reason for conducting this study was to determine the role that shared mental models of strategic thinking play in the development of organisational strategy. This theory-building/theory testing research demonstrated that shared mental models of strategic thinking determine how individuals and strategy groups perceive the future of their organisation and impacts significantly on the development of organisational strategy. It showed that mental models of the task of strategic thinking are based upon particular elements of strategic thinking and these elements were confirmed in the study. It also showed that mental models about group-functioning are influencing mental models of strategic thinking. Previous researchers called for the investigation of the human component in strategy and the findings of this study confirmed that strategy development cannot be disconnected from the mental models of strategy makers—it is people who think, and to think implies the activation and application of mental models.

The challenge for organisations is to acknowledge the importance of shared mental models by developing strategies focused on improving dialogue and interaction among members of strategy groups—as well as across strategy groups—to integrate and build shared organisational knowledge and

understanding about the organisation and its stakeholders. Only then can organisational strategy achieve its main purpose—to serve all stakeholders including employees, shareholders, communities and the wider environment.

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8. Appendices

APPENDIX A: CASE STUDY DATABASE

The case study database includes the documentation from the three cases (Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council) that were collected for this study. The documentation includes an overview of the regional councils with regard to their areas and amalgamation, their visions and missions, organisational structures and strategic directions from their corporate plans. The documentation provides an evidentiary base for this study. This documentation is provided in:

Appendix A1: Toowoomba Regional Council

Appendix A2: Dalby Regional Council

Appendix A3: Lockyer Valley Regional Council.

APPENDIX A1: TOOWOOMBA REGIONAL COUNCIL

http://www.toowoombarc.qld.gov.au/index.php?option=com_docman&task=doc_download&gid=2403:corporate-plan-2009-2014 - 0.25 kB

Introduction:

Toowoomba Regional Council commenced business on 15 March 2008 with the merger of the Cambooya, Clifton, Crows Nest, Jondaryan, Millmerran, Pittsworth and Rosalie shire councils with Toowoomba City Council.

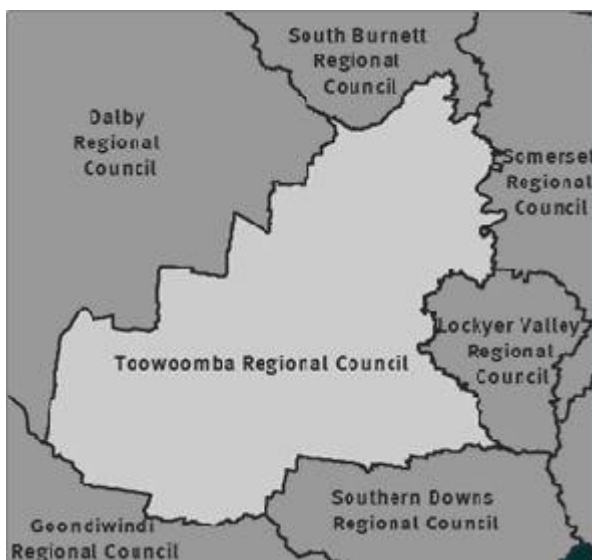


The council consists of 11 members: a mayor and 10 councillors who are elected by the region's voters for a four-year term.

The next election will be held in March 2012.

Area:

The estimated resident population for the Toowoomba Regional Council area at 30 June 2006 was 151,297 people. The preliminary estimated resident population for Toowoomba Regional Council at 30 June 2007 was 152,912, an increase of 1,615 people or 1.1 per cent over the year. The population is projected to grow to 228,461 people by 2031 (medium series projection).



(Information for this snapshot has been extracted from the ['Population and Housing Factsheet', August 2008](#), Planning Information and Forecasting Unit, Queensland Government.)

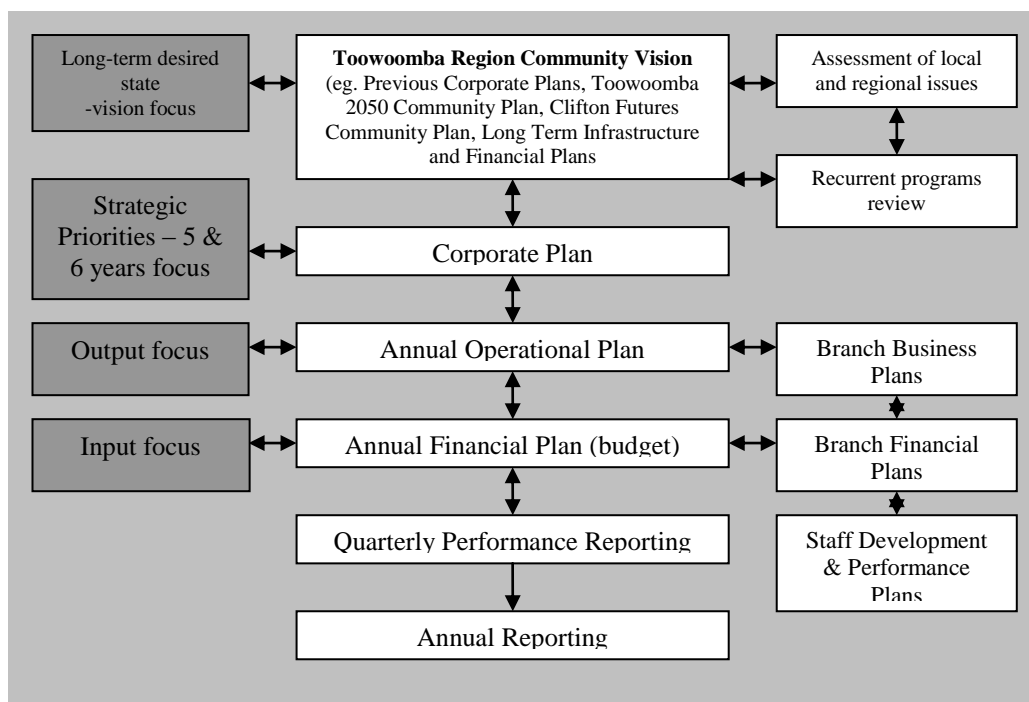
Community Participation:

Council encourages public participation in the development of its laws, policies, plans and general decision-making process. There is a number of ways members of the public may have their views on particular issues brought to the attention of a committee or council meeting.

These are by:

- Written requests - A member of the public can write to the council about any council policy, activity or service.
- Petitions - Written petitions can be addressed to the council about any issue within council's jurisdiction.
- Deputations - With the permission of the Committee Chairperson or the Mayor, a member of the public can address a committee or the council personally, or on behalf of a group of residents. Affected groups or members of the public are often invited to attend a meeting to discuss an issue under consideration.
- Objections and submissions - When council is considering certain matters, such as development applications and the making of local laws, the proposals are advertised in the region's local newspapers. Objections and submissions on these matters are invited from members of the community.

Corporate Planning Process and Framework:



Goals, Outcomes and Strategic Actions:

VISION

The Toowoomba Regional Council area is a vibrant, culturally-diverse, environmentally rich and economically dynamic Region that embraces the future while respecting the past.

MISSION

Working with the community, Toowoomba Regional Council will lead with good governance and sustainable practices to achieve the vision.

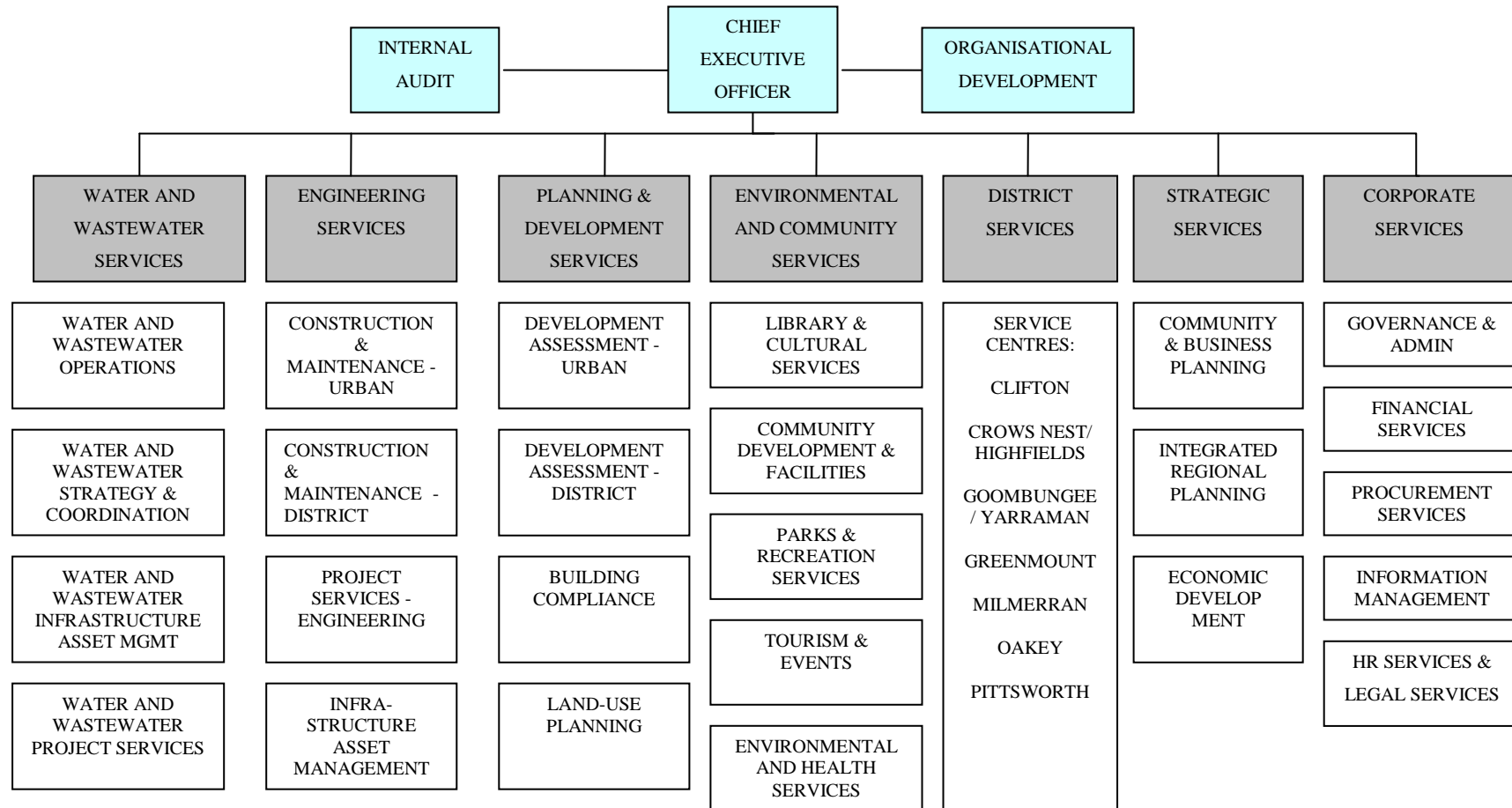
GOALS

COMMUNITY	GOVERNANCE	BUILT ENVIRONMENT	NATURAL ENVIRONMENT	ECONOMY
A safe, healthy and equitable community enjoying a quality lifestyle.	A well-governed Council respecting community values.	Well managed and integrated regional growth.	A highly-valued, diverse, liveable and sustainable environment	A dynamic economy providing employment and opportunity.

OUTCOMES

<p>1.1 Opportunities for creative expression, cultural exchange and life long learning are accessible community wide.</p> <p>1.2 A community involved in sport and recreational activities.</p> <p>1.3 The Toowoomba Region has high quality environmental health standards.</p> <p>1.4 A community that is safe, friendly, resilient and informed.</p> <p>1.5 Our communities value and share cultural diversity and intergenerational knowledge and skills.</p>	<p>2.1 An organisation centred on good governance and community participation.</p> <p>2.2 Efficient, effective and responsive Council service delivery.</p> <p>2.3 A well managed and efficient organisation centred around an appropriate corporate culture.</p>	<p>3.1 Planning and development for regional growth and change is based on sustainability principles, cultural heritage and community engagement.</p> <p>3.2 Toowoomba Region has a well-planned, safe and functional transportation system.</p> <p>3.3 Toowoomba Region's infrastructure networks and assets are developed and maintained in a coordinated and integrated manner.</p>	<p>4.1 The Region has an accessible network of green spaces and its land and water assets are conserved and managed.</p> <p>4.2 The Toowoomba Region has safe and sustainable water network.</p> <p>4.3 The Toowoomba Region is climate change responsive.</p> <p>4.4 The Toowoomba Region's environment is managed to minimise degradation.</p>	<p>5.1 Toowoomba Region has a strong economy fostering innovation and diverse business opportunities recognising Toowoomba as the key regional service centre</p>
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ORGANISATIONAL STRUCTURE: TOWOOMBA REGIONAL COUNCIL



APPENDIX A2: DALBY REGIONAL COUNCIL

<http://www.wdrc.qld.gov.au/visitors/index.shtml>

Introduction:

Western Downs Regional Council is among the top twenty largest councils in Queensland. It spans an area of 38,039 square kilometres, services a population of 30,018, operates a \$100 million budget, holds public assets of \$572 million and employs a 600 strong workforce. With a \$10 billion energy industry within its boundary, Western Downs Regional Council aims to act in the best interests of its regional community to ensure local infrastructure keeps pace with growing demand. As a super council, it has the resources and the political power to capitalise on the future growth of the Surat Basin.

The council consists of 9 members: a Mayor and 8 Councillors who are elected by the region's voters for a four-year term.

Western Downs Regional Profile

Western Downs Regional Council is among the highest local government performers in Queensland and Australia. Traversed by national highways astride the headwaters of the Murray-Darling, the Dalby region is a hive of activity and growth through continued agriculture, manufacturing and resource diversification.

Over the past five years the Western Downs Regional Council electorate has experienced an increase in population, reversing the trend of rural decline. The estimated residential population as at June 2007 was 30,230. The next four years, to 2011, will see estimated growth projections almost double to 1.1% average annual growth.



Businesses in the region have begun to diversify from traditional markets in the agricultural sector into components, parts and services for the energy sector. Agriculture, forestry and fishing dominate the economy, representing 22.6% of the region's \$1.3 billion gross domestic product (2006/07).

Strong growth and development is evident across the region in electricity, gas and water supply, up 30.3% to \$41.7 million while professional services, transport and manufacturing also experienced greater than 15% annual growth.

Almost 10% of Queensland's manufacturing gross domestic product is produced within the Dalby region.

The energy resources sector, which comprises coal, coal seam gas, coal seam gas water, ethanol and power station development, has the potential to more than triple the gross regional product.

Within this growing economy, increased pressures on the labour market are reflected in low unemployment figures. The Dalby region's unemployment rate for the June Quarter 2008 was 3.1%, well below Queensland (3.7%) and Australia (4.2%) averages. Employed persons make up over half (53.8%) of the population, increasing in line with projected population growth of 0.8% average annual change.

The region's residents enjoy the benefits of relaxed country living, friendly and active communities without the pressures of time or traffic congestion experienced in city centres. The median house price was \$225,000 in the year to June 2008, an increase of 7.7%. Despite increased median value of 176.3% over the past five years, the region's median house price is approximately 54.5% below those in the Brisbane metropolitan area and compare favourably with median house prices in Toowoomba, Lockyer Valley, Goondiwindi and South Burnett.

Residential building approvals decreased 52.4% in comparison to the previous year while total value decreased 40.8%. Significantly however, the average value of dwelling approvals for new houses increased 14.7% over the previous year and 53.6% since 2003-04. The total value of residential building approvals in the Western Downs Regional Council in the year to June Quarter 2008 was approximately \$22.6 million.

As the region's economy builds, residents are expected to benefit from the opportunities and development occurring within local communities and industry.

Corporate plan:

Vision

Our vision expresses what Council aspires to achieve for the Western Downs region.

a proud region united by
OPPORTUNITY and LIFESTYLE

Guiding Principles

As Councillors and staff of Dalby Regional Council we are committed to the following principles as a guide to our actions as representatives of our region:

- *Invest in our people*
- *Think regionally - deliver locally*
- *Facilitate growth – manage impact*
- *Excellence in affordable service delivery*
- *Consistent and informed decisions*

As a team we will work together to achieve:

- *Quality outcomes for our communities*
- *An inclusive team culture*
- *Pride in our organisation*
- *Continuous improvement*

Principles of Local Government

The purpose of the proposed new Local Government Act 2008 is to provide for a system of local government in Queensland that is accountable, effective, efficient and sustainable.

Parliament requires anyone who is performing a responsibility under this Act to do so in accordance with the following local government principles:

- (a) Transparent and effective processes, and decision-making in the public interest; and
- (b) Sustainable development and management of assets and infrastructure, and delivery of effective services; and
- (c) Democratic representation, social inclusion and meaningful community engagement; and
- (d) Good governance of, and by, local government; and
- (e) Ethical and legal behaviour of councillors and local government employees.

Dalby Regional Council 2009 - 2013 Corporate Plan *Adopted 18 February 2009*

Strategic Activities

To address priority issues identified during the 2009 - 2013 Corporate Planning Process, the Dalby Regional Council team is committed to delivering services and initiatives devised within each of the following strategic activities:

SA1 People and Communities

Create an enriched and vibrant social fabric through regular interaction with our people and communities

SA2 Growth and Opportunity

Realise opportunities and build capacity for the sustainable growth of our prosperous region

SA3 Planning for Liveability

Build an effective planning solution that enhances the liveability and lifestyle of our regional communities whilst promoting sustainable development

SA4 Our Environment

Provide a healthy environment for our people today and the generations of tomorrow

SA5 Utility Services

Manage our water, sewerage and gas networks to achieve reliability, safety and cost effectiveness for our customers

SA6 Infrastructure

Build and maintain civil infrastructure to create safe and liveable communities within our region

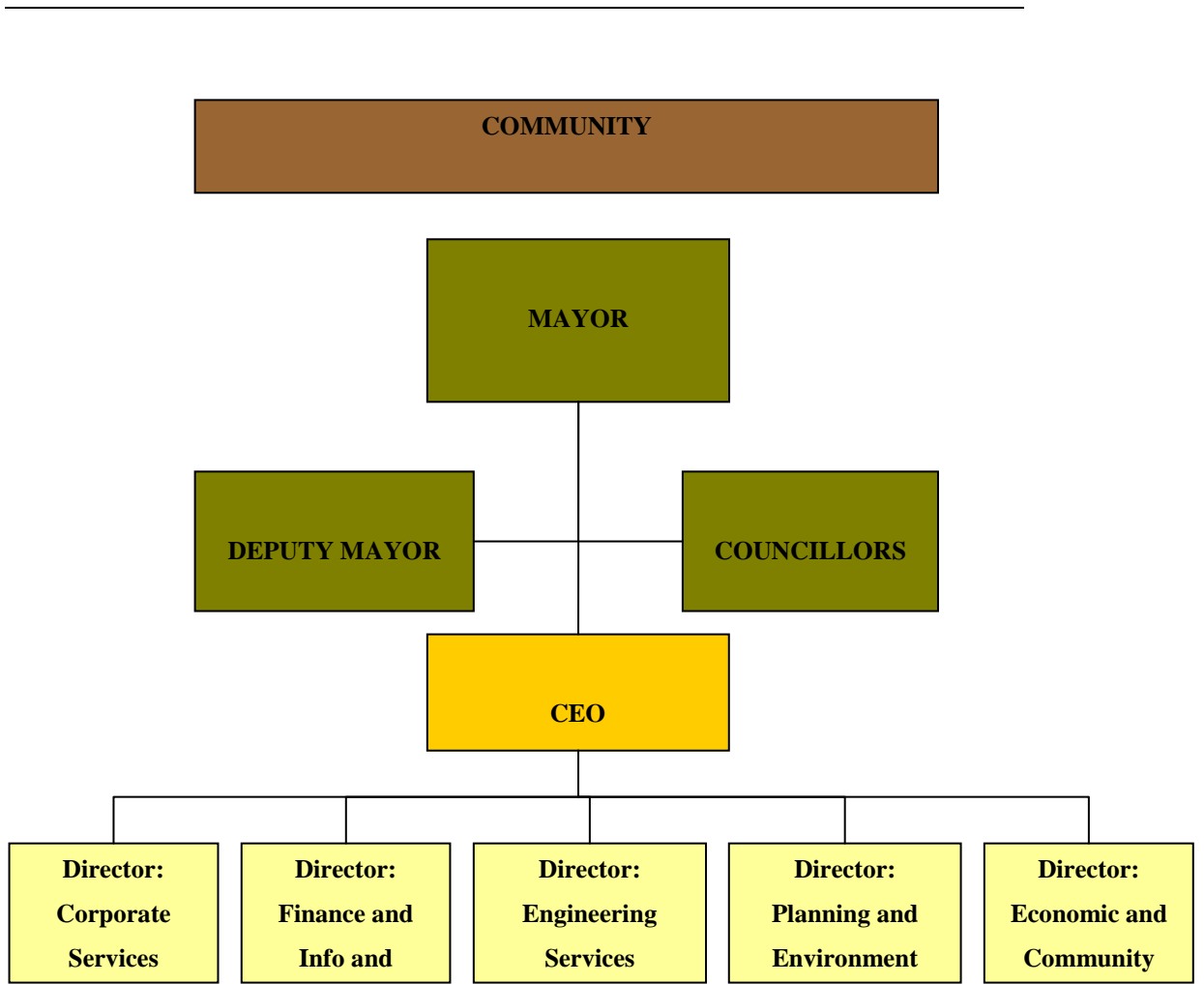
SA7 Empowering Our Team

Provide organisational support and leadership to build a strong and effective regional council

SA8 Business Systems and Technology

Implement and manage effective business systems and accountable financial practices to serve the needs of council and the community.

Dalby Regional Council is committed to retaining local services and a local presence within our region through the operation of Customer Service Centres in Chinchilla, Dalby, Miles, Jandowae, Tara and Wandoan.



APPENDIX A3: LOCKYER VALLEY REGIONAL COUNCIL

<http://www.lockyervalley.qld.gov.au/ABOUTCOUNCIL/tabid/53/Default.aspx>

Introduction:

The Lockyer Valley Regional Council comprises the former Gatton and Laidley Shire Council's. This council was officially amalgamated on the 15th March 2008 under the Queensland Governments Local Government Reform initiative.

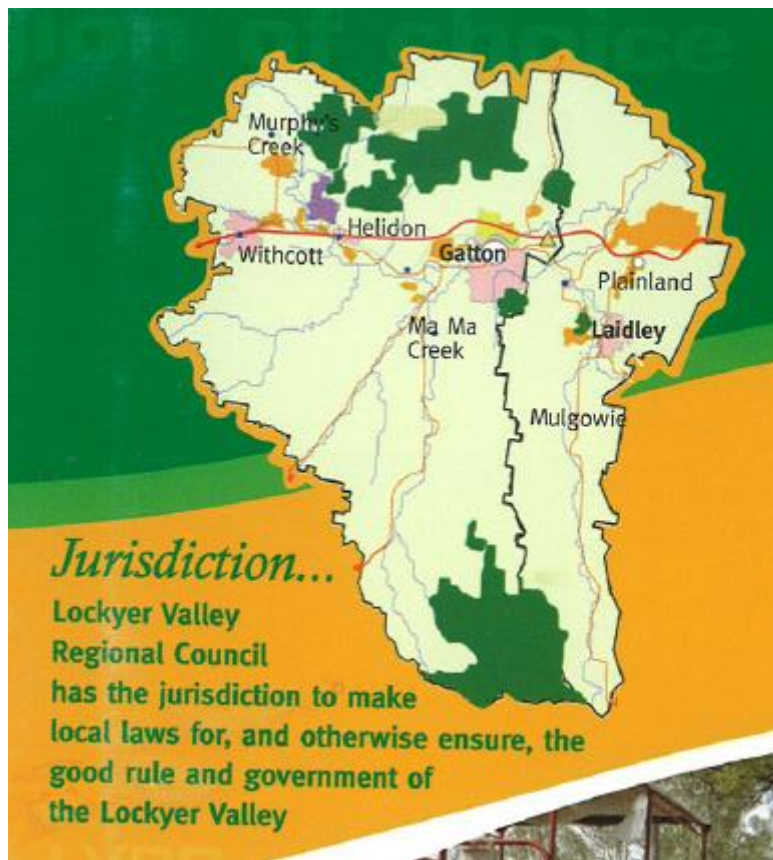


Both Gatton and Laidley Shire's shared strong and proud histories in the development of the region and will now continue to do that as one.

The Lockyer Valley Region is ideally situated less than 1 hours drive from inner city Brisbane, straddling the Warrego Highway covering an area of just over 2000sq km and is home to more than 20000 residents. Modern amenities and a natural rural environment make it the heart of the Lockyer.

Lockyer Valley Regional Council comprises of an elected Mayor and 6 Councillors, with an equivalent full time staff of approximately 300.

Area:



Our Mission...

" To be *the* Region of Choice for vibrant rural living"

Our Values...

- We will achieve our objectives through community consultation and professional, common sense management
- We will operate in a responsible, transparent and efficient manner
- We will serve our community with integrity whilst maintaining a strong customer focus
- We will maintain a dynamic working environment through positive leadership and teamwork.

Strategic Activities:

Community Lifestyle: To provide and assist in the development of services and facilities to enrich community life

Leadership: To provide dynamic, innovative leadership and active community engagement

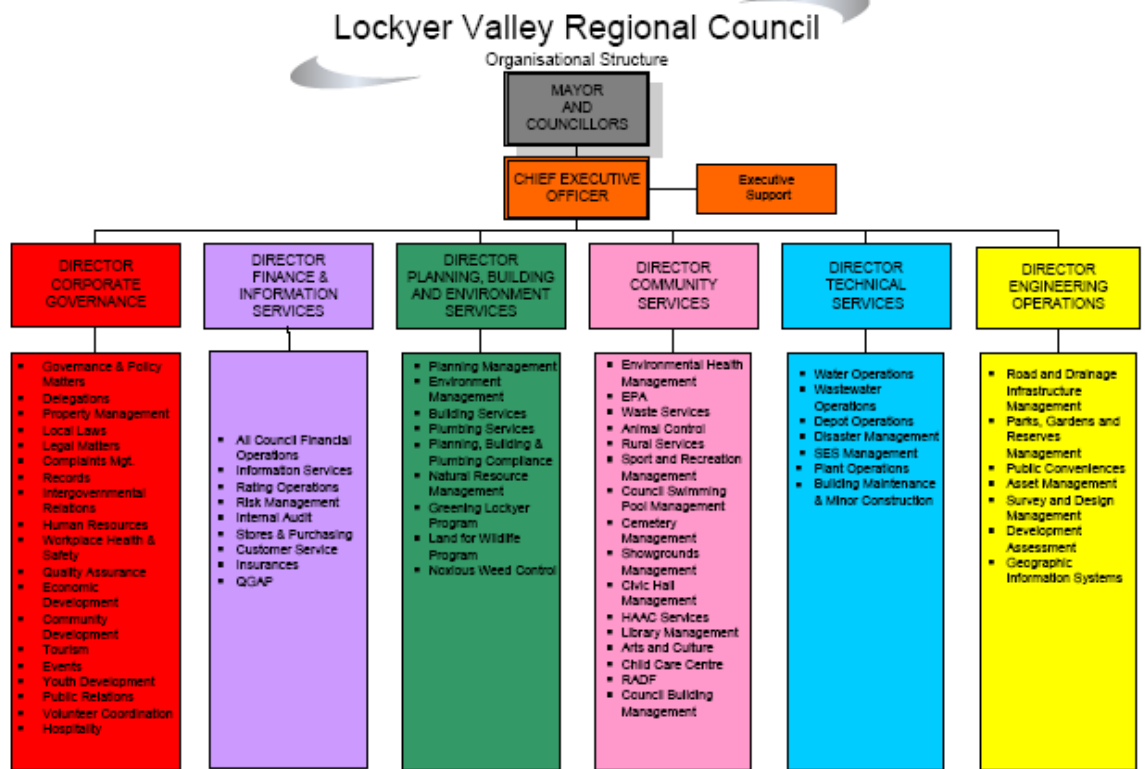
Corporate Governance: To ensure accountable and transparent processes that enable efficient and effective service delivery

Landscape: To enhance and maintain the natural and built environment for the community's enjoyment

Sustainable growth: To promote and manage sustainable growth and economic development throughout the region

Essential services: To maintain and develop infrastructure and core services to meet the needs of our growing community.

ORGANISATIONAL STRUCTURE: LOCKYER VALLEY REGIONAL COUNCIL



STAFFING LEVELS UNDER THIS STRUCTURE HAVE BEEN CAPPED BY COUNCIL AT A MAXIMUM OF 350

APPENDIX B: CASE STUDY PROTOCOL

To increase construct validity and also increase reliability in case study methodology, it is recommended that a 'chain of evidence' is maintained through the inclusion of case study protocol (Yin 2009). The case study protocol provides information about the procedures and general rules that were followed in the study.

Overview of the case study project:

The overall aim of the research project is to investigate the role of shared mental models of strategic thinking in the development of organisational strategy. The context of the study is local government and three Regional Councils in South East Queensland were investigated, they were Toowoomba Regional Council, Dalby Regional Council and Lockyer Valley Regional Council. More specifically, the strategy groups in these councils were studied. In each of the three regional councils, three strategy groups were investigated; the first level strategy groups including the Mayors, Councillors and Chief Executive Officers, the second level strategy groups including the Chief Executive Officers and Directors of Departments and the third level strategy groups including the Director of Departments/Directorates involved with strategy development and operational level employees appointed to the strategy group.

Two methods were used to gather the data; first the interview protocol was applied to provide interview data of the thirty eight members of the strategy groups and secondly, documentation of the councils including their organisational structures, corporate plans and missions and visions were obtained. Three methods of data analysis were applied and include a qualitative content analysis, documentary analysis and Leximancer analysis. The analysis results were triangulated to provide the final results and this was discussed in detail.

Field procedures:

To gain access to the councils, the websites of the councils were searched to identify key staff members such as the mayors and chief executive officers and to obtain contact details. An email explaining the purpose of the study providing a

broad overview of the study was sent to the mayors to invite them to participate in the study. There were mayors who replied and indicated that due to natural disasters such as the flooding in Queensland, they did not have the capacity to participate in the study at that stage. However, three regional councils responded and indicated their interest in participating in the study. The first step was to interview one of the mayors to ensure that the interview questions were appropriate for local government and to develop the scenario exercise. Next, the updated interview protocol was discussed with two councillors to ensure that the questions were appropriate. Finally, interviews were scheduled with each member of the strategy groups in the three councils. The interviews were conducted and recorded. Afterwards, the recordings were transcribed to provide a set of textual documents as data files. These data files were used in the analysis process.

Case Study Questions:

The interview instrument was discussed in detail in Chapter 3. Further to that discussion, it needs to be noted that the interview questions occurred at Level 2 according to Yin's categories (Yin 2009). Level 2 questions are focused on the specific case, in this instance, the strategy groups in the regional councils. The interview protocol is presented in Appendix C.

Case Study Report:

This thesis presents the final case study report.

APPENDIX C: CASE STUDY INTERVIEW PROTOCOL

Research study Interview

INTRODUCTION

- Outline of the study
- Ensure anonymity and confidentiality
- Explain feedback procedures – no individual feedback
- Ask respondent if he/she has any questions about the purpose or conduct of the interview before commencing.
- Ask permission to record the interview

START-UP QUESTIONS

Organisations often form one or more strategy groups to consider and develop the long-term direction of the organisation.

What is the situation in your RC? Are there any strategy groups to develop the long-term direction of the organisation and which are they?

Are you part of a strategy development work group?

Do you think that the way the strategy groups are structured is effective or can it be structured in a better way? How?

STRATEGIC THINKING QUESTIONS

What is your personal understanding of strategic thinking?

Within the context of local government and applicable legislation, how important and/or applicable is strategic thinking for your RC?

In your opinion, where does strategic thinking fit within the strategy development process?

Do you consider strategic thinking as a 'one-off' event or as a continuous process? Why?

In your current position in the RC, in what way does your role require:

-
- a) **strategic thinking to develop options for the long-term strategy of the RC, and**
 - b) **operational thinking to plan how to accomplish the organisational strategy?**

PART 1: TASK MENTAL MODELS

One method to explore mental models of strategic thinking is to sketch a scenario that reflects a critical incident situation where strategic thinking is required and then ask respondents about the actions that they deem appropriate in addressing the situation. I will now provide you with a scenario and ask you certain questions about how the scenario situation can be addressed.

National Disaster Scenario:

“Heavy cyclonic rains across Australia and specifically in your regional area continued throughout the last couple of months. It is expected that these rains will continue and the possibility of large scale flooding is increasing. This situation requires your Regional Council to review its long-term flood mitigation measures to protect the community and its existing infrastructure, promote community safety and reduce the loss of life and flood damage.”

What strategic actions can your Regional Council take in developing flood mitigation measures?

- **Prioritise**

You are required to prioritise each of the actions that are related to strategic thinking. Please mark the actions that are most important strategic thinking actions as High Priority (**HP**), those that are less important strategic thinking actions as Medium Priority (**MP**) and those that are least important strategic thinking actions as Low Priority (**LP**).

- **Rank-order**

Please rank-order the actions from most appropriate to least appropriate actions related to strategic thinking (1= most appropriate to 20 = least appropriate).

What strategic actions can your Regional Council take in developing long-term flood mitigation measures?

Actions required to address the situation:

		ACTION	HP	MP	LP	Rank-Order
1.	E5	Allocate additional resources to fund structural changes.				
2.	E4	Consider long-term structural reform in flood management that may include flood control dams, bypass floodways, flood warning systems, channel improvements and house raising measures.				
3.	E5	Identify staff members for an 'Emergency Team'.				
4.	E3	Predict the impact that flooding may have in the RC, review current measures to address these and develop new ways to manage this in future.				
5.	E5	Consider how these new ways will impact on staffing.				
6.	E4	Develop community awareness programs for flood management.				
7.	E5	Consider how these programs can be communicated to the residents.				
8.	E1	Develop proactive, cost-effective ideas to manage flooding.				
9.	E5	Consider how these ideas can be put to practice.				
10.	E5	Consider how these ideas will influence council's budget.				
11.	E1	Activate a disaster management team to				

		consider the impact of flooding in the RC and design preventive measures.				
12.	E5	Negotiate remuneration for contract workers during flood 'clean-up'.				
13.	E5	Identify the resources required for the 'disaster management team'.				
14.	E5	Identify the members of the 'disaster management team'.				
15.	E2	Consider the role of information and control systems in the mitigation measures.				
16.	E5	Map the information processes of the mitigation measures.				
17.	E5	Map the process of control systems of the mitigation measures.				
18.	E3	Follow a 'think tank' approach to consider multiple long-term tactics for flood management.				
19.	E5	Identify the members of the 'think tank'.				
20.	E2	Consider the roles of all departments in mitigation measures.				

GROUP-FUNCTIONING MENTAL MODELS

Group-functioning mental models represent the way that individual group members view the way in which their group function. The 'group' in this instance, refers to the strategy group that you are member of.

Please be assured that this is strictly confidential and anonymous.

The following questions apply to your perceptions about your other strategy group members' knowledge, skills and attitudes:

- **How do you personally view the other members in your strategy group's knowledge about developing organisational strategy?**
- **What do you think about the other group members' skills to develop organisational strategy?**

-
- **How do you view their attitudes towards developing organisational strategy?**

The following questions address your perceptions about how the group interacts:

- **To what degree do you view your group as united in trying to reach your goals?**
- **How do group members communicate about each other's responsibilities in the group?**
- **Considering all the work groups that you are participating in, how important is this particular work group to you?**

The following questions address your perceptions about the roles and responsibilities of other group members:

- **Who takes responsibility for error or poor performance in your group?**
- **Who do you see as the natural leader of this group?**
- **Is there a specific group member who is usually bringing new and creative ideas into the group?**
- **Is there a specific group member who is usually playing 'devil's advocate' when new ideas are being discussed?**

The following questions address the group's perceptions about team interaction and the knowledge and skills available in the group:

- **How would you personally rate the performance and success of your strategy group? Why?**
- **How confident is your group about achieving its goals?**

'Boundary spanning' is explained as a deliberate strategy that a team/group follows to communicate frequently with those outside the team/group to promote the team/group, to secure resources and to protect the team from interference.

-
- In what way does boundary spanning apply to your strategy group?

PROBING QUESTIONS

1. In your opinion, what is the balance between strategic thinking and operational requirements in the role requirements of
 - a) the group of Mayor and Councillors
 - b) the Executive Team (CEO and departmental heads)
 - c) staff members of the strategic planning department.
2. In what way is strategic ideas and options communicated and shared among the different strategy groups?
3. Do you think that there are high levels of agreement in the way that your strategy group members view the long-term direction of your RC?

CONCLUSION

- Ask respondent if he/she has any questions about the interview
- Assure the respondent that the information from this interview will remain anonymous and confidential
- Thank the respondent for taking part.

APPENDIX D: CASE STUDY PARTICIPATION E-MAIL

Dear Cr

I am a lecturer at the University of Southern Queensland in the Faculty of Business and have been lecturing and studying strategic management for several years. Currently, I am undertaking a PhD research study and the main objective of this study is to examine the role of shared mental models of strategic thinking in the development of organisational strategy. At this stage of my study, the research proposal has been accepted by USQ and ethical clearance to conduct the study has been granted.

Strategic management is a critical component in ensuring long-term sustainable service delivery to communities. The recent changes to the structures of Local Government present a unique opportunity to study strategy development within the context of Local Government. Because Regional Councils are new structures and assigned to deliver services extremely important to each member of a community, this study is focused specifically on Regional Councils within Queensland's Local Government. The recent amalgamation of previous shire councils may have a significant effect upon strategic thinking in the new Regional Councils. This creates a need to study strategic thinking within Regional Councils to contribute to and support effectiveness and sustainability within these councils.

I am sending you this email to request Dalby Regional Council's participation in this research.

The primary research approach for this study is qualitative and the interview protocol is employed to gather information from multiple case studies. Participation from your council will entail the following:

- Interview of approximately one hour with you
- Interview of approximately one hour with the Deputy Mayor, Cr
- Interview of approximately one hour with Mr (CEO)
- Interviews with each of the councillors (approximately one hour each)
- Interviews with each of the Directors of the council's departments (approximately one hour each).

The interview structure and questions will be provided to each interviewee before the interview.

I understand that your time and each individual's time are at premium and in return for the appropriate efforts, I would be very happy to provide you with a summary of the

case-based findings and the final research report and also assist you in developing measures to enhance shared strategic thinking if required.

Please be assured that all collected data will be treated with strict confidentiality. The interview protocols will be handled on an anonymous basis and the results will be reported for the entire study rather than on an individual basis. You may withdraw from the study at any time.

If you need further information about the study and your council's planned involvement in the study, please do not hesitate to contact me by email or telephone. I will contact you within a week's time to find out if your Council is interested in participating in this study. Thank you for your time!

Yours sincerely

Renee Malan

Faculty of Business

University of Southern Queensland

Mobile 041 978 5093

Email: malan@usq.edu.au

APPENDIX E: INFORMED CONSENT FORM

Dear Study Participant

Subject: Your participation in the strategic management study

I am undertaking a PhD research study and the main objective of this study is to examine the role of shared mental models of strategic thinking in the development of organisational strategy. At this stage of my study, the research proposal has been accepted by USQ and ethical clearance to conduct the study has been granted.

Strategic management is a critical component in ensuring long-term sustainable service delivery to communities. The recent changes to the structures of Local Government present a unique opportunity to study strategy development within the context of Local Government. Because Regional Councils are new structures and assigned to deliver services extremely important to each member of a community, this study is focused specifically on Regional Councils within Queensland's Local Government. The recent amalgamation of previous shire councils may have a significant effect upon strategic thinking in the new Regional Councils. This creates a need to study strategic thinking within Regional Councils to contribute to and support effectiveness and sustainability within these councils.

For this study, interviews of approximately one hour were scheduled with members of the strategy groups in your council. The interview is focused on retrieving individual and shared mental models of strategic thinking that will be investigated in this study.

Please be assured that your responses will remain completely confidential. For analysis and reporting purposes, your anonymous responses will be combined with those from other interviewees and the results will be reported for the entire study rather than on an individual basis.

If you have any queries or require further clarification regarding the conducted research, please feel free to contact me by email at malan@usq.edu.au. Thank you for agreeing to this interview and your valuable assistance in this study.

I consent to participate in this research project with the knowledge that I can cease participation at any time for any reason and withdraw any data previously supplied.

.....

Signature

Date

Renee Malan

Faculty of Business, University of Southern Queensland

APPENDIX F: LETTER OF COMPLETION TO STUDY PARTICIPANTS

University of Southern
Queensland,
Toowoomba, QLD 4350

The Mayor:Regional Council

Dear Cr

Subject: Your participation in the strategic management study

I am pleased to advise that my data collection in your Regional Council is completed. At this stage I wish to thank you for your participation in this study and for investing time in this research.

Please pass my thanks also to all the participants in this study, the CEO, Councillors and Directors for their valuable contributions and for making themselves available for the interviews. I thoroughly enjoyed conducting the interviews and personally benefitted from sharing strategic thinking ideas with participants.

I will be finalising the data collection for the entire study by the end of this week after which data analysis will commence. Although the results for this study will be reported for the entire study rather than on an individual basis, I will also provide you with a separate report of results for your Regional Council that will follow in due course.

If you have any queries or require further clarification regarding the research, please feel free to contact me by email at malan@usq.edu.au.

Best regards,

Renee Malan
Faculty of Business
Department of Management and Marketing
University of Southern Queensland