5th actKM Conference

Research Forum

Canberra, ACT, Australia
14 October, 2004

Strategic Management Meets Knowledge Management: a literature review and theoretical framework

Paul James
DBA Candidate
Southern Cross University
paul.james@countryenergy.com.au

Supervisor: Associate Professor Shankar Sankaran
Southern Cross University

Biographical Notes

Paul is approaching the end of the second year of his doctorate at Southern Cross University. His research topic is the nexus between Strategic Management and Knowledge Management, focusing on the lifecycle of knowledge assets. Coming from an engineering background, Paul has spent the last fifteen years developing and implementing information systems required to support engineering operations in the electricity industry. Out of this work came an interest in knowledge management, largely due to the suboptimal results achieved by most information systems, and the loss of knowledge in the electricity industry through downsizing.

(Word count approximately 5,300 excluding references.)

Strategic Management Meets Knowledge Management: a Literature Review and Theoretical Framework

Abstract

In many organisations, proponents of knowledge management struggle to gain its acceptance by senior management. The rhetorical question 'Is knowledge management tasked with: managing the knowledge that an organisation has; or managing the knowledge that an organisation needs?' is posed to knowledge management practitioners. The answer to the question lies in a theoretical model developed through a comprehensive review of literature covering the topics of strategic management, the resource based view of the firm and knowledge management. Through the identification of the nexus between strategic management and knowledge management, this research will provide knowledge management practitioners with justification for knowledge management initiatives. The aim of the research is to assist knowledge management proponents in their struggle to gain its acceptance by senior management.

Keywords: *Knowledge management*
Strategic management
Knowledge assets
Knowledge strategy

1. Introduction

This research seeks to establish the nexus between strategic management and knowledge management. To achieve this, through a thorough review of extant literature, it explores a number of areas such as: why organisations need knowledge assets; what are knowledge assets; how is the need for knowledge assets determined; and which knowledge assets should be managed.

To answer these questions this paper initially explores strategic management, moving on to the resource based and knowledge based views of the firm[1]. It then briefly discusses knowledge management, defines what knowledge assets are, touches on the concept of a knowledge strategy and concludes with a theoretical framework that brings these concepts together.

2. Strategic Management

This section discusses the development of strategic management, and what the strategic management process entails.

2.1 A Brief History of Strategic Management

Alfred D. Chandler was among the first scholars to study strategic management. His book *Strategy and Structure: Chapters in the History of Industrial Enterprise* (MIT Press, Cambridge, MA 1962) described the development of organisations. Noting that 'structure follows strategy' (Browne 1994; Chandler 1962, p. 14), Chandler alluded to the impact that strategies have on the internal organisational environment. In demonstrating that the practice of strategic management predated its study, he was influential in stimulating further study. Chandler was followed by Igor Ansoff releasing the book *Corporate Strategy* (McGraw-Hill, New York, NY, 1965) and Learned, Christensen, Andrews and Guth with *Business Policy: Text and* Cases (Irwin, Homewood, Illinois) also in 1965. Another book by Kenneth R. Andrews, *The concept of corporate strategy* (Irwin, Homewood, Illinois 1971) examined organisations from the perspectives of their internal strengths and weaknesses, and opportunities and threats in the external environment. Andrews' work formed the basis for the 'design school' of strategic management (Barney 1991; 1995; Browne 1994; Feurer & Chaharbaghi 1995).

In 1980, Michael E. Porter published his influential work *Competitive Strategy: Techniques for analysing industries and competitors*, (The Free Press, New York 1980). Porter, building on

[1] The terms 'organisation' and 'firm' will be used interchangeably and refer to all organisations whether they are profit or not for profit based.

Andrews' 'Design School' model, focused on an examination of the structure of the industry or market in which an organisation competes. His model of five competitive forces (rivalry among competitors, threat of new entrants, bargaining power of suppliers, bargaining power of customers, and the threat of substitute products) allowed managers to assess the attractiveness of the market and establish the most competitive position within that market (Browne 1994; Feurer & Chaharbaghi 1995; Robbins et al. 2000). Porter's (1985) concept of the 'value chain' was another development that allowed managers to determine potential sources of competitive advantage by examining the activities that their organisation undertook and the links between them (Nonaka 1991).

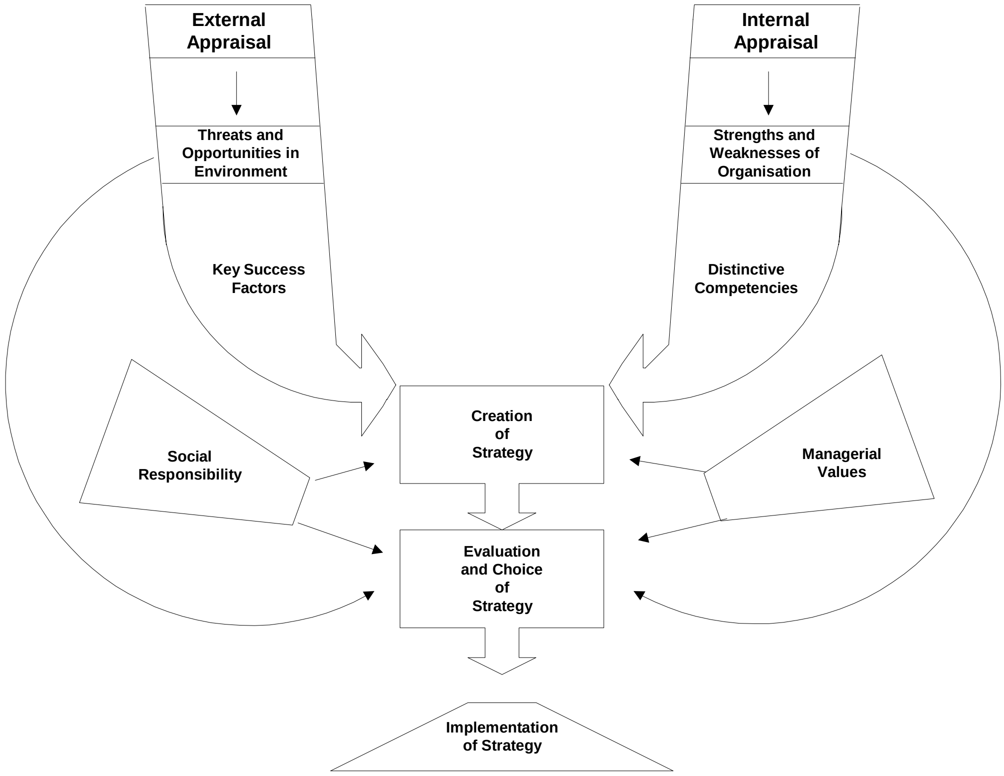
2.2 What Is Strategic Management?

A strategy to an organisation is, amongst other things, a plan of how the organisation can achieve its goals and objectives (Davies 2000; Mintzberg 1996), it is a 'commitment of present resources to future expectations' (Drucker 1999, p. n.p.). The aim of strategic management is to decide on organisational goals, the means of achieving those goals, and ensuring that the organisation is sustainably positioned in order to pursue these goals. Furthermore, the strategies developed provide a base for managerial decision making (Browne 1994; Porter 1980; Robbins et al. 2000).

2.2.1 Strategic Management Process – the Design School

The strategic analysis process, depicted in figure 1, focuses on the integration of opportunities with distinctive competences. The internal analysis is used to identify assets (resources) and competences (capabilities) currently possessed by the organisation. These will influence the strategic options developed in the next stage of the strategic planning process, as will the external market environment of customers and competitors. Strategies may be developed around existing assets or distinctive competences through matching them with environmental opportunities (Pearce II & Robinson 1994). Alternatively, they may identify new competences that will be acquired, developed and supported. Growth strategies such as product expansion, market expansion, and diversification often require that competences be extended and enhanced to meet environmental opportunities (Aaker 2001).

Figure 1 – Strategic Analysis – Design School Model

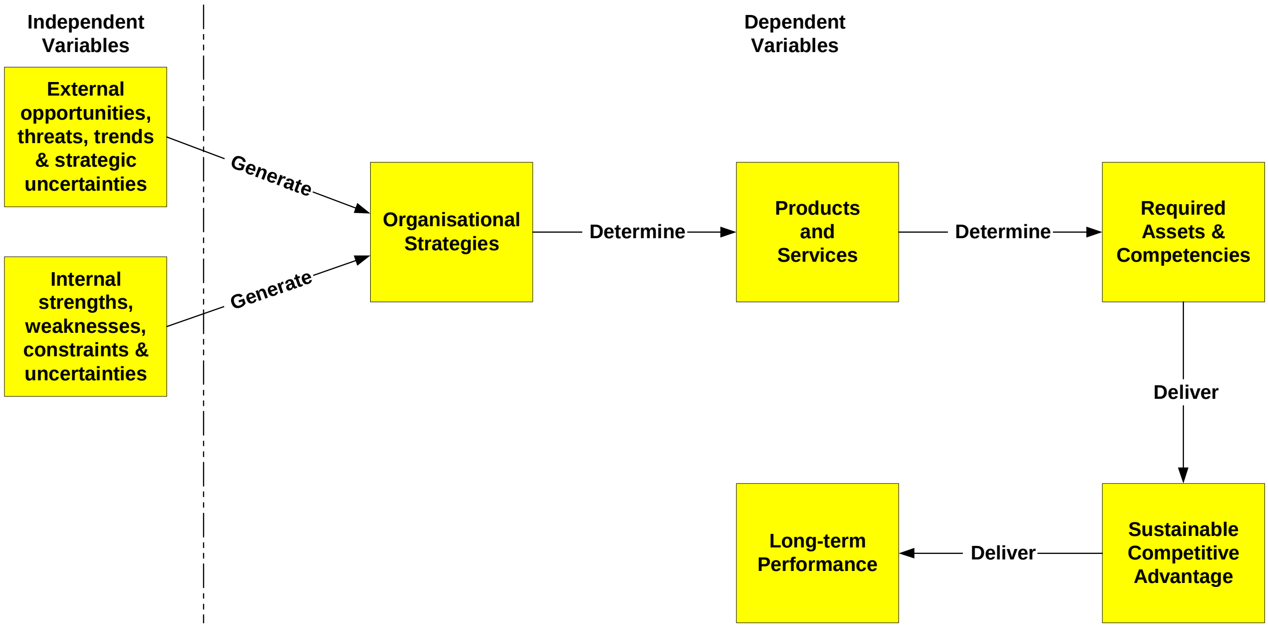


Source: (Browne 1994 Figure 3.1)

2.3 Summary

Figure 2 presents an alternate view of the Design School's strategic management process.

Figure 2 – Design School Theoretical Framework



Source: Adapted from (Aaker 2001; Browne 1994; Ferdinand 1999; Feurer & Chaharbaghi 1995; Stevenson 1976).

Within the bounds of this framework, the independent variables of external and internal environmental analysis will generate a number of candidate strategies. From these candidate strategies, the selected strategies will determine the products and services provided, in effect, the organisation's position and scope. The products and services to be produced, in turn determine the resources, which include knowledge assets, required to produce them (Teece, Pisano & Shuen 1997). Effective strategy implementation requires careful selection and management of the organisational assets and competences required to support the strategies.

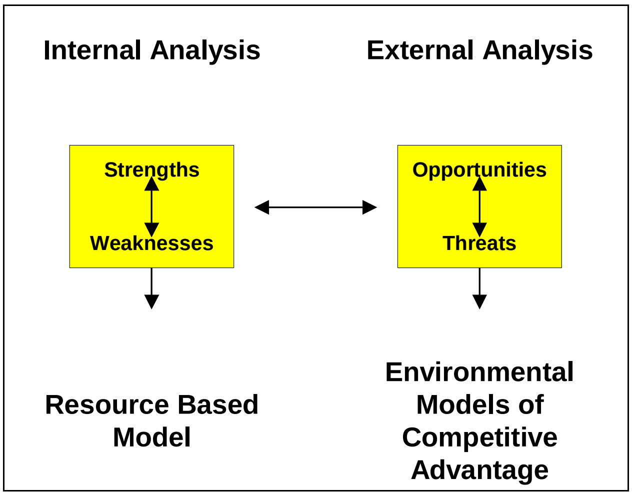
Strategic Management's aim is to ensure firms are competitive, and able to satisfy both customers' and shareholders' expectations. The process involves the analysis of the external market and the firm's internal capabilities. Although Strategic Management is an effective and popular management tool, some researchers and practitioners believe that the process is deficient. This view is discussed in the next section.

3. The Resource Based View and Knowledge Based View of the Firm

3.1 The Resource Based View of the Firm

The Resource Based View of the Firm (RBV) regards organisations as a 'broader set of resources' (Wernerfelt 1984, p. 171). It is a perspective on strategic management with an emphasis on internal analysis, and an attempt to address a perceived imbalance with Porter's (1980; 1985) 'positioning' school (Browne 1994). As such, it is a complementary aspect of the strategic management process (Henderson & Cockburn 1994).

Figure 3 - The Relationship between the Design School and the RBV



Source: (Barney 1991, p. 100)

Porter focused on the analysis of the industry and market that a firm operates in: a predominantly outward looking view, the main thrust of which was the examination of competitive forces, and opportunities and threats present in the external environment (Barney 1991; Black & Boal 1994; Grant 1991; Leavy 2003). The resource based view however, focuses on firm specific resources. The resources referred to in RBV include assets, capabilities, organisational processes, attributes, information and knowledge (Barney 1991, p. 101).

3.2 Firm Resources

There are many definitions and examples of what constitutes firm resources including:

<u>Resource Classes</u>

- physical capital resources – infrastructure, geographic location, access to raw materials;
- human capital resources – the training, judgement, intelligence, relationships, insight of managers and workers; and
- organisational capital resource – formal reporting structure, formal and informal planning processes, controlling and coordinating systems, internal and external networks (Barney 1991, p. 101).

<u>Resources</u>

- stocks of available assets that are owned or controlled by a firm; ie. know-how, financial and physical assets, and human capital (Ferdinand 1999, p. 22);
- capital equipment, skills of individual employees, patents, brand names, reputation, financial resources, physical resources, human resources, technological resources, organisational resources (Grant 1991);
- ‘anything which could be thought of as a strength or weakness’; eg brand names, in-house knowledge of technology, employment of skilled personnel, trade contacts, machinery, efficient procedures, capital (Wernerfelt 1984, p. 172).

<u>Capabilities</u>

- the capacity to deploy resources; information-based, tangible and intangible processes(Ferdinand 1999, p. 22);
- complex patterns of coordination, routines (Grant 1991).

Resources include physical, human, and organisational capital, a mixture of tangible and intangible assets, skills or competences (Hall 1993), however few resources are productive in isolation. Productivity comes from the application and coordination of resources. Hence, productivity comes from capability. Grant (1991, p. 119) posits “While resources are the source of a firm’s capabilities, capabilities are the main source of competitive advantage.

Simply stated: ‘What a firm knows, is a resource.’ and ‘What a firm knows how to do, is a capability.’ (Zack 1999).

Resources in the form of capabilities are developed, integrated, protected and exploited to give competitive advantage (Barney 1991). It is a firm’s core capabilities that make the most significant contribution to competitive advantage (Prahalad & Hamel 1990). Core capabilities are ‘...the collective learning in an organisation’ (Hamel & Prahalad 1990, p. 80-82); ‘...the knowledge set that distinguishes and provides a competitive advantage; capabilities that differentiate a company strategically; a set of differentiated skills, complementary assets, and routines that provide the basis for a firm's competitive capacities and sustainable advantage in a particular business (Teece, Pisano & Shuen cited in (Leonard-Barton 1992, p. 111-113).

Porter’s (1996) view is that competences on their own are not sufficient to deliver a sustainable competitive position. He states that ‘*...the essence of strategy is choosing a unique and valuable position rooted in systems of activities that are much more difficult to match.’* (p. 61). However, if one adopts the view that activities are capabilities, eg routines and processes, Porter’s view is closely aligned with the resource based view.

3.3 Firm Resources and Sustainable Competitive Advantage

RBV theory is based on the assumptions that strategic resources within an industry are heterogeneously distributed, and that they are not perfectly mobile between firms (Barney 1991; Teece, Pisano & Shuen 1997). The heterogeneous distribution, when combined with imperfect mobility, is where firms can gain a competitive advantage. Should resources be homogeneously distributed in industry, there would be no difference in: profitability between firms (De Toni & Tonchia 2003); sustained competitive advantage; first mover advantage; and barriers to entry could not exist. If resources were homogeneously distributed, all firms in the industry could conceive of and execute common strategies (Barney 1991; Grant 1991).

Superior performance comes from a firm’s capacity to create and exploit capabilities not available to competitors (Barney 1991). From the RBV perspective, to provide sustainable competitive advantage (SCA) firm resources: are **valuable** to the organisation by enabling the exploitation of opportunities and the neutralisation of threats; they should be **rare**, or if possible, unique, in the competitive environment the organisation operates in; they should be **difficult to copy or imitate**; and finally there should be **no substitutes** for them (Barney 1991; 1995;

Ferdinand 1999; Hamel & Prahalad 1994; Michalisin, Smith & Kline 1997; Porter 1996; Teece, Pisano & Shuen 1997).

> *Where absolute superiority is not attainable, you must produce a relative one at the decisive point by making skilful use of what you have.*
>
> Karl Von Clausewitz, *On War,* 1832

Intangible assets such as know-how and knowledge can provide 'premium value' (Walters, Halliday & Glaser 2002, p. 826), form the basis for competitive strategy, and influence management processes and organisational forms or structures (Drucker 1993; Michalisin, Smith & Kline 1997; Sanderson 1998; Senge 1990). Organisations that base their strategies on intangible assets outperform those with strategies based only on tangible assets (Barney 2001). This emphasises the need for knowledge management as an adjunct to the strategic management process.

3.4 The Two 'Schools' Within RBV

Within the RBV 'school', two perspectives exist. The first is the conservative approach which suggests that firms focus on what they are good at, and that they already possess the requisite competences (Browne 1994). The second is concerned with the dynamic capabilities required to support strategies (Eisenhardt & Martin 2000; Teece, Pisano & Shuen 1997). The conservative approach suggests that competences determine strategies, whereas the dynamic approach suggests that strategies determine competences (Grant 1991). A 'dynamic' perspective will see diversification as an opportunity to generate or acquire new competences. This may be done through recruitment, training, mergers and acquisitions, or horizontal or vertical integration.

Due to changes in technology, politics, economics and business models, most markets today are dynamic (Robbins et al. 2000). Ongoing change is part of the (changing) landscape. To survive, organisations need the capacity to match, anticipate or even create market change (Hamel & Prahalad 1994; Hamel 2002). The dynamic market demands a dynamic response (Teece, Pisano & Shuen 1997), requiring organisations to adapt through the development of new knowledge to generate new skills and capabilities (Andriessen 2004), ensuring that the firm's resources base will suit future requirements (Grant 1996). Firms, like other social entities, evolve through the adaptation of their organisational knowledge, which is comprised of the collective knowledge of its people, and the firm's capabilities (Spender 1996).

Although the conservative view is self-limiting, there are sound reasons for supporting it. Some firms do not have the capability to develop new competences; some competences are not tradeable; and the cost of acquisition of competences may nullify or outweigh the benefit of such acquisition (Teece, Pisano & Shuen 1997).

3.5 The Knowledge Based View of the Firm

In the past decade, the RBV movement has spawned something similar called the Knowledge Based View of the firm (KBV) (April 2002; Gehani 2002). The basis of the knowledge-based view is that competitive advantage comes from intangible assets such as firm-specific knowledge, the tacit knowledge of its people, and the ability to create knowledge (Gehani 2002; Grant 1996; Nonaka & Takeuchi 1995). KBV holds knowledge assets, resources and capabilities as the prime strategic resources (Grant 1996; Spender 1996).

The discussion on firm resources so far has included examples of: resources such as skills and know-how; and capabilities including methodologies, routines, activities, ability to innovate and ability to learn. These are all examples of knowledge and the cognitive processes required to deploy knowledge. In these cases, resources are personal knowledge possessed by the firm's people, while capabilities are organisational knowledge, possessed by the firm (Gehani 2002). Grant (1996) posits that firms exist so that individuals, as resources, can integrate their knowledge through the firm's routines, as capabilities.

3.6 Summary

Simply stated, internal analysis will determine what a firm can do, external analysis will determine what it must do. Strategies may need to be developed to bridge any gaps that exist; one will be the firm's competitive strategy, another may be a knowledge strategy (Zack 1999).

Organisational resources when combined through processes, activities or routines create the firm's capabilities (Grant 1991). Superior skills and resources on their own are not enough for sustained competitive advantage. The same can be said for superior processes, activities, routines, and capabilities. The combination of resources and capabilities represents 'the collective learning of the organisation' (Hamel & Prahalad 1990), and it is through learning, through this combination, that sustainable competitive advantage is achieved (Grant 1991). A firm's ability to learn is one of, if not the most, important capability the firm possesses (Barney, Wright & Ketchen 2001; Senge 1990). Its ability to improve skills, learn new skills and create innovative processes is difficult to imitate, and hence provides almost unassailable competitive advantage (Hamel & Prahalad 1989).

Proponents of the resource based view of the firm have proposed theories for the management of the cognitive processes that underpin competitive advantage (Barney 1995; Fiol 1991). For example, Fiol (1991) looks to anthropology and sociology to examine the linkages between culture and competitive advantage. Since that time, the emerging discipline of knowledge management has coalesced from a number of disciplines. Knowledge Management's role is to ensure that collective learning happens, and is facilitated through the most appropriate knowledge environment. The section that follows explores this emerging discipline.

4. Knowledge Management

This section of the report discusses the discipline of Knowledge Management and its benefits, touching on this topic only briefly it offers a working definition, and then moves on to knowledge asset management.

> *'An immense and ever-increasing wealth of knowledge is scattered about the world today; knowledge that would probably suffice to solve all the mighty difficulties of our age, but it is dispersed and unorganised. We need a sort of mental clearing house for the mind; a depot where knowledge and ideas are received, sorted, summarised, digested, clarified and compared.'*
>
> H.G. Wells - The Brain: Organisation of the modern world. (1940)

4.1 Knowledge

Many people working in organisations are decision makers, problem solvers, or innovators. Knowledge in the form of understanding, insight and experience is required to support both decision-making and innovation. In an economy that is changeable and uncertain, knowledge is not static, it needs to be identified, evaluated, acquired, transferred, stored, used, maintained and possibly disposed of (Drucker 1993; Hamel 2002; Nonaka 1991; Pemberton & Stonehouse 2000).

Many management researchers (Drucker 1993; 1995; Hamel 2002; Leonard-Barton 1998; Michalisin, Smith & Kline 1997; Nonaka 1991; Pemberton & Stonehouse 2000) are of the opinion that knowledge is the cornerstone for competitive advantage. This aligns with the RBV position, and is effectively the same as the KBV. Knowledge is the key resource (Gehani 2002) in a rapidly changing global market where the development of innovative services, products and solutions is required to attract and retain customers and overtake the competition.

4.2 Knowledge Management

As we have discussed, all organisations have a number of resources, some of which can be converted into capabilities such as know-how or tacit knowledge. Knowledge management's purpose, simply put, is the creation, collection and conversion of individual knowledge into organisational knowledge (Bollinger & Smith 2001; Pemberton & Stonehouse 2000; Spender 1996). Knowledge management's strength lies in its ability to harness knowledge resident in an organisation, for the benefit of itself, its customers and shareholders.

The working definition for **Knowledge Management** is:

> the identification, acquisition, utilisation, support, maintenance and disposal of knowledge assets for the purpose of adding value and benefiting all stakeholders (Jones 2001; Rowley 1999).

Knowledge assets are discussed further in section 5.

4.2.1 Benefits of knowledge management

If an effective knowledge management strategy is developed and implemented, it can greatly facilitate the collection and sharing of meaningful knowledge, reducing lost time searching for that expertise. Thus employee knowledge can be converted to corporate knowledge, building on organisational memory. Knowledge management can improve efficiency and effectiveness, and increase responsiveness to market changes (Leng & Shepherdson 2000). It can also be used to improve product development and quality, and develop a better understanding of customer and stakeholder relationships (Davenport, Eccles & Prusak 1992; Hauschild, Licht & Stein 2001; Martensson 2000; Skyrme 1998).

'The ability to perceive or think differently is more important than the knowledge gained.'

David Bohm

Innovation, a key aspect of competitive advantage, relies on the insight and intuition of an organisation's employees. Innovation is the feedstock of new products and services, and is essential to solving business problems through the use of expert panels, cross-discipline teams and communities of practice. With advanced communications, these teams can be separated by time and distance, yet still work as an effective *virtual* team (Nonaka 1991; Ruokonen 2001; Stough, Eom & Buckenmyer 2000).

4.3 Summary

Knowledge is the foundation for many of the resources discussed in the sections on Strategic Management, RBV and KBV. Skills and capabilities are manifestations of knowledge, and examples of what many refer to as knowledge assets. The next section discusses knowledge assets and their management.

5. Knowledge Asset Management

5.1 Knowledge Assets - Defined

Although dialogue about knowledge management and intellectual capital often uses the term ‘knowledge assets’, a review of the literature on these topics has failed to find consensus on a definition, despite examples given in extant literature.

The table below gives some examples of knowledge assets.

Table 1 - Example Knowledge Assets

Resources	**Knowledge in People**	Know-how, skills, accumulated learning and knowledge, experience, relationships, training, judgement, intelligence. Stocks of available assets that a firm owns or controls
Capabilities	**Knowledge in Processes**	Embedding knowledge into business activities, teamwork, insight of managers and workers, routines, processes and management decision making. A firm’s capacity to deploy its resources.
Products	**Knowledge in Products and Services**	Knowledge embedded in products, products with high intellectual capital content. Products surrounded with knowledge e.g. user guides, training manuals and enhanced knowledge-intensive services.

Source: Adapted from (April 2002; Barney 1991; Ferdinand 1999; Hamel 2002; Skyrme 1998)

As discussed so far, all firms have a number of assets which are a resource and/or a means of production. These include tangible, financial and intangible assets. Of the intangible assets Andriessen (2001, p. 207) categorises them into:

- skills and tacit knowledge;
- collective values and norms;
- technology and explicit knowledge; and
- primary and management processes.

These categories fit well with the definitions given above. Other perspectives on knowledge assets include that by Nonaka, Toyama and Konno (2001) who categorise them as: -

- experiential – tacit knowledge assets shared through common experiences;

- conceptual – explicit knowledge articulated through images, symbols, and language;
- systematic – systemised and packaged explicit knowledge; and
- routine – tacit knowledge routinised and embedded in actions and practices.

A complementary view is:

- know-how – practical, habitual and operational knowledge;
- know-why – scientific and theoretical knowledge;
- know-what – strategic, encoded knowledge (Pemberton & Stonehouse 2000); and,
- know-when – tactical knowledge.

Yet another view exists: Snowden (2000) proposes a categorisation with the acronym 'ASHEN'.

- artefacts – captured or codified knowledge;
- skills – an activity with a measurable competency;
- heuristics – a method of learning or knowing, often exists as rules of thumb, or anecdotes;
- experience – the individual or collective experience of people in an organisation;
- natural talent – where people are naturally proficient or skilled.

'I keep six honest serving men,
(they taught me all I knew),
their names are What, and Why, and When,
and How, and Where, and Who.'

Rudyard Kipling – Just So Stories

After consideration of these views, the definition for **knowledge assets** used for this report is:

> A knowledge-based resource or capability of value that enables products and services to be provided; and has an economic life viable within industry and market context.

Knowledge assets are stocks of knowledge which are used to produce products or services (Boisot 1999). They should add value, give a competitive edge, offer potential for the future, be sustainable in market context, and be controlled by the organisation (Andriessen 2001).

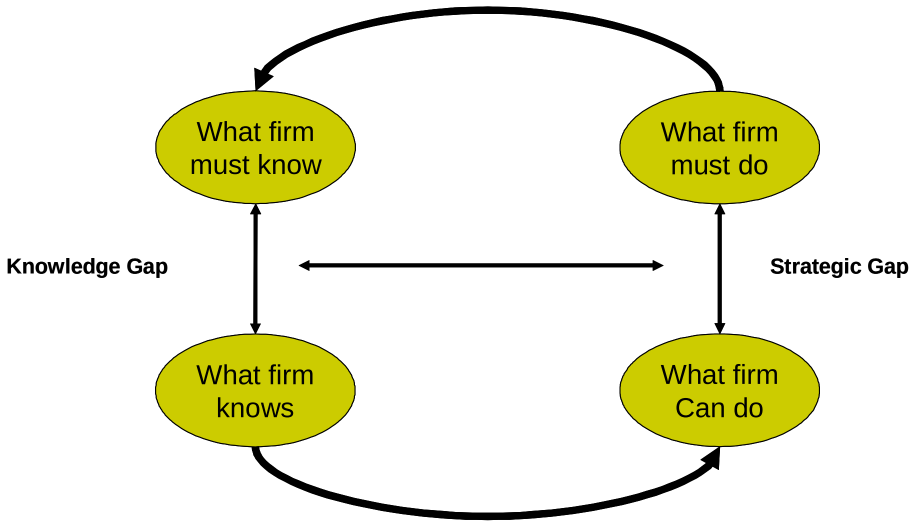
In similar fashion to other organisational assets, knowledge assets are managed according to a strategy, in this case a knowledge strategy. The next section discusses the concept of a knowledge strategy.

5.2 The Knowledge Strategy

The organisation's strategic plan, performance and results provide input into the firm's knowledge strategy (Callahan 2002; Thorbjørnsson et al. 2004; Zack 1999). The knowledge strategy, also known as an 'intellectual capital statement' (Thorbjørnsson et al. 2004), defines the actions necessary to ensure the organisation's knowledge asset portfolio meets the required outputs. Like competitive strategies, knowledge strategies may be intentional or emergent (Mintzberg 1996).

Strategic plans are developed and deployed to close the gap between what a firm can do and must do to be competitive. Knowledge strategies are devised to close the gap between what a firm knows and what a firm must know to be competitive (Zack 1999), as shown in the figure below.

Figure 4- Strategic and Knowledge Gaps



Source: (Zack 1999, p. 136)

Technical skills and capabilities are insufficient to make a firm competitive; rather this knowledge should lead to coordinated, productive and efficient action. This means that a knowledge strategy is not solely about identifying the technical capabilities required by the firm's strategic plans, but should also ensure that capabilities are able to deliver productive output (Liebeskind 1996). Wang and Lo (2003, p. 499-502) categorise capabilities into three types: technological, marketing and integrative. Technological capabilities are those directly related to the production of product; marketing capabilities include customer research and communications; and integrative capabilities are required to ensure that all capabilities fit together. Integrative capabilities enable innovation, guide problem solving, and the generation of new knowledge and capabilities through the combination of different technical and functional capabilities, the exploitation of synergies, and the dynamic building of capabilities. Wang and Lo regard integrative capabilities as the major contributor to core capabilities.

A knowledge strategy defines the actions necessary to ensure the organisation's knowledge assets meet organisational objectives and support its strategies. In line with competitive strategies, knowledge strategies provide goals, a unified vision, a base for decision-making, a communication tool, and a foundation for consistent operations. A knowledge strategy includes actions or options to:

- determine which knowledge assets are required;
- acquire or develop new knowledge assets;
- make major changes to existing knowledge assets;
- maintain the existing knowledge assets;
- make the knowledge available; and,
- dispose of redundant knowledge assets (Callahan 2002; Zack 1999).

5.3 Summary

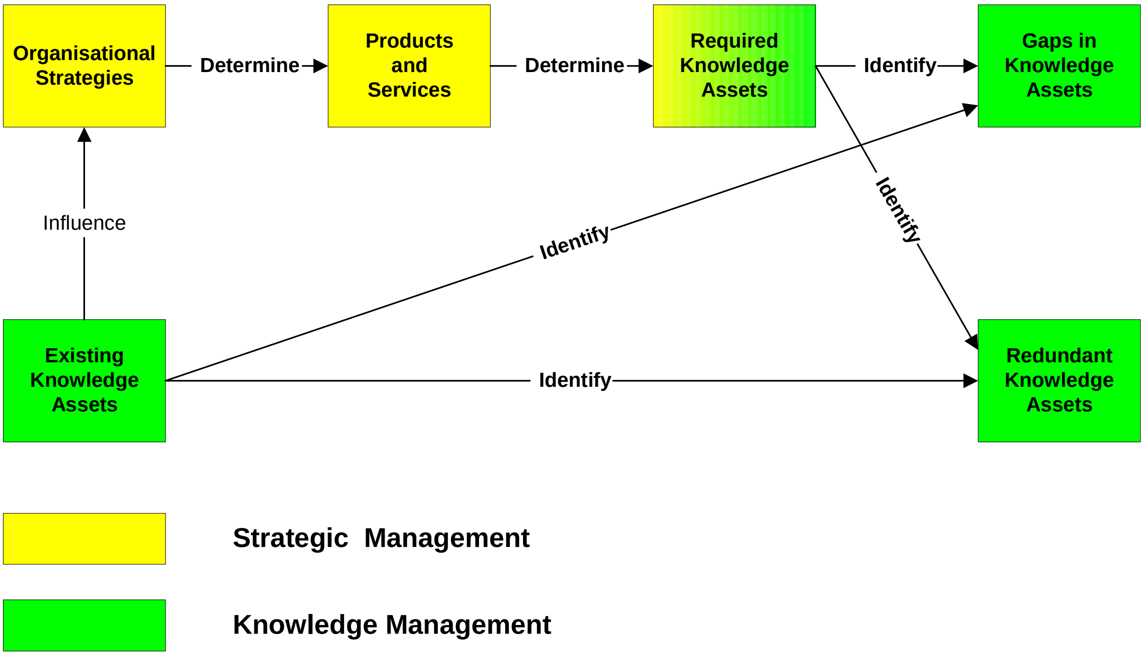
Knowledge assets, although lacking an accepted definition, are the focus of knowledge management. Their purpose is to support competitive strategies, and allow competitive advantage. The purpose of a competitive strategy is to close the gap between what a firm can do and what it must do; the purpose of a knowledge strategy is to close the gap between what a firm knows and what it must know. Knowledge management is the operationalisation of the knowledge strategy, and it is tasked with the management of knowledge assets though their entire lifecycle.

The review of literature on strategic and knowledge management has led to the development of a theoretical model that will serve as a basis for data collection in the next stage of this research. The next section will describe the theoretical model.

6. Theoretical Framework

The theoretical framework developed for this research, comprises a strategic management framework and a knowledge management framework.

Figure 5 – Theoretical Framework



Source: Developed for this report.

The above model brings together aspects of the strategic management process, and the knowledge management process, as briefly described below.

Strategic Management: The strategic management process generates organisational strategies, which determine the products and services to be provided. One output from the strategic management process is a determination of the resources and capabilities (knowledge assets) required to produce the products and services, and meet organisational objectives.

Knowledge Management: Taking this output from strategic management, knowledge management's role is to manage the generation, representation, access and transfer of knowledge assets (Dilnutt 2000). Knowledge management includes the management of the cognitive processes that utilise and transform tangible assets into outputs (Fiol 1991). Through comparison of the required and existing knowledge assets, the knowledge planning process identifies gaps that may exist. Additionally, it can identify redundant or surplus knowledge assets that may be considered for disposal. The use here of the term redundant, is not to be confused with Nonaka and Takeuchi's use of the term (1995, p. 80-82), where they are referring to an overlap of knowledge between people that aids understanding, possibly leading to the development of future valuable knowledge. The use of redundant in this report refers to knowledge assets that a firm no longer requires.

'Theories are nets cast to catch what we call "the world": to rationalise, to explain, and to master it. We endeavour to make the mesh ever finer and finer.'

Karl R. Popper

7. Conclusion

This report has explored the areas of strategic management, the resource and knowledge based views of the firm, and knowledge management. We have also discussed the concept of knowledge assets, including the knowledge strategy, and presented a theoretical model.

Based on what we have covered, the conclusion reached is that resources are essential for organisations to deliver the products and services that justify their existence. These products and services are determined by the organisation's strategies. In order for resources, such as skills and know-how, to be effective, they are transformed into organisational capabilities through routines and activities (Grant 1991). For a firm to endure, capabilities need to be more durable than the resources upon which they are based. Organisational capabilities are required to continue, even though individual resources are replaced periodically (Grant 1991). Knowledge management's role is to preserve organisational capabilities, ensuring they are durable, despite the inevitable fact that the firm's human resources move on.

This research has led to the development of the theoretical model presented above. From this model, four propositions have been developed.

Propositions

P1 – Existing organisational knowledge assets will have an influence on organisational strategies.

Some firms may 'stick to their knitting', that is, they may limit their strategies to those for which they have the requisite knowledge assets, whilst dynamic firms will be more concerned with the gap between existing knowledge assets and those required by new strategies (Browne 1994; Eisenhardt & Martin 2000; Teece, Pisano & Shuen 1997).

P2 – Organisational strategies determine an organisation's products and services; its scope of activities.

A firm's Mission will define the market the firm operates in, and express products and services in terms of the customer's need (Aaker 2001; Robbins et al. 2000). The development of a mission statement is the start of the strategic management process, providing context for strategies, a reference point for strategy selection (Bart, Bontis & Taggar 2001; Schraeder 2002).

P3 – Products and services determine the knowledge assets required to produce them.

The growth strategies selected by a firm require either new skills for product innovation, design and production required, or an increase in the quantity of existing skills for new products, markets or locations (Wernerfelt 1984).

P4 – A comparison of required knowledge assets and existing knowledge assets will identify gaps in knowledge assets and redundant knowledge assets.

Strategic plans are developed and deployed to close the gap between what a firm can do and must do, to be competitive. Knowledge strategies can be developed and deployed to address misalignment between what a firm knows and what a firm must know to be competitive (Zack 1999).

Research

The theoretical model and propositions will be used to guide data collections for the next stage of this research. The research problem used as the basis for the research is:

'***How and why are knowledge assets managed in Australian Government Departments?'***

The research issues presented here are based on the gaps discovered in the literature.

RI1 – How do existing knowledge assets influence the development of an organisation's strategies?

RI2 – How do organisational strategies influence the scope of an organisation's products and services?

RI3 – What influences the knowledge assets that an organisation requires?

- **RI3.1 –** *How and why is the need for specific knowledge assets identified?*
- **RI3.2 –** *How and why are redundant knowledge assets identified?*

Case research has been chosen as the methodology for this research as there has been very little research conducted into the relationship between strategic management and knowledge management. The interaction between these two management disciplines is not well understood, ‘and existing theory seems inadequate’ (Eisenhardt 1989, p. 589). To improve the understanding of these ‘contemporary phenomena’, investigation is best performed in its ‘real-life context’ (Audet & d'Amboise 2001; Yin 2003, p. 13).

8. References

Aaker, D. A. 2001, *Strategic Market Management*, Wiley, New York.

Andriessen, D. 2001, 'Weightless Wealth: four modifications to standard IC theory', *Journal of Intellectual Capital*, vol. 2, no. 3, pp. 204-214.

Andriessen, D. 2004, *Making Sense of Intellectual Capital*, Elsevier Butterworth-Heinemann, Burlington, MA.

April, K.A. 2002, 'Guidelines for developing a k-strategy', *Journal of Knowledge Management*, vol. 6, no. 5.

Audet, J. and d'Amboise, G. 2001, 'The Multi-Site Study: An Innovative Research Methodology', *The Qualitative Report*, vol. 6, no. 2, p. 50 paragraphs.

Barney, J. 1991, 'Firm Resources and Sustained Competitive Advantage', *Journal of Management*, vol. 17, no. 1, pp. 99-120.

Barney, J. 1995, 'Looking inside for competitive advantage', *The Academy of Management Executive*, vol. 9, no. 4, pp. 49-62.

Barney, J. 2001, 'Resource-based theories of competitive advantage: A ten year retrospective on the resource-based view', *Journal of Management*, vol. 27, no. 6, pp. 643-650.

Barney, J., Wright, M. and Ketchen, D. J. Jr. 2001, 'The resource-based view of the firm: Ten years after 1991', *Journal of Management*, vol. 27, no. 6, pp. 625-641.

Bart, C.K., Bontis, N. and Taggar, S. 2001, 'A model of the impact of mission statements on firm performance', *Management Decision*, vol. 39, no. 1, pp. 19-35.

Black, J. A. and Boal, K. B. 1994, 'Strategic resources: Traits, configurations and paths to sustainable competitive advantage', *Strategic Management Journal*, vol. 15, no. Summer, pp. 131-148.

Boisot, M.H. 1999, *Knowledge Assets: Securing competitive advantage in the information economy*, Oxford University Press, Oxford.

Bollinger, A.S. and Smith, R.D. 2001, 'Managing organisational knowledge as a strategic asset', *Journal of Knowledge Management*, vol. 5, no. 1, pp. 8-18.

Browne, M. 1994, The Evolution of Strategic Management Thought: Background Paper - Strategic Management Educators' Conference, Australian Centre in Strategic Management QUT.

Callahan, S. 2002, Crafting a Knowledge Strategy: actKM Conference, Canberra.

Chandler, Alfred. D. Jr. 1962, *Strategy and Structure: Chapters in the History of Industrial Enterprise*, MIT Press, Cambridge, MA.

Davenport, T.H., Eccles, R.G. and Prusak, L. 1992, 'Information politics', *Sloan Management Review*, vol. 34, no. 1, pp. 53-64.

Davies, W. 2000, 'Understanding Strategy', *Strategy & Leadership*, vol. 28, no. 5, pp. 25-30.

De Toni, A. and Tonchia, S. 2003, 'Strategic planning and firms' competencies: Traditional approaches and new perspectives', *International Journal of Operations & Production Management*, vol. 23, no. 9, pp. 947-976.

Dilnutt, R.P. 2000, *Knowledge management as practiced in Australian organisations: A case study approach*, DBA thesis, Southern Cross University.

Drucker, P. F. 1999, 'Change Leaders' [Online], Available at: http://www.inc.com/magazine/19990601/804.html, [Accessed] 5 May 2004, [Last Updated] June 1999

Drucker, P.F. 1993, *Post Capitalist Society*, Harper Business, New York.

Drucker, P.F. 1995, 'Rethinking Work', *Executive Excellence*, vol. Feb 1995, no., p. 5.

Eisenhardt, K.M. 1989, 'Building Theories from Case Study Research', *Academy of Management Review*, vol. 14, no. 4, pp. 532-550.

Eisenhardt, K.M. and Martin, J.A. 2000, 'Dynamic Capabilities: What Are They?' *Strategic Management Journal*, vol. 21, no. 10/11, pp. 1105-1121.

Ferdinand, A.T. 1999, *Strategic Pathways toward Sustainable Competitive Advantage*, DBA thesis, Southern Cross University.

Feurer, R. and Chaharbaghi, K. 1995, 'Strategy development: past, present and future', *Management Decision*, vol. 33, no. 6, pp. 11-21.

Fiol, C.M. 1991, 'Managing Culture as a Competitive Resource: An Identity-Based view of Sustainable Competitive Advantage', *Journal of Management*, vol. 17, no. 1, pp. 191-211.

Gehani, R.R. 2002, 'Chester Barnard's "executive" and the knowledge-based firm', *Management Decision*, vol. 40, no. 10, pp. 980-991.

Grant, R.M. 1991, 'The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formation', *California Management Review*, vol. 33, no. 3, pp. 114-135.

Grant, R.M. 1996, 'Toward a knowledge-based Theory of the firm', *Strategic Management Journal*, vol. 17, no. Special Winter Issue, pp. 109-122.

Hall, R. 1993, 'A Framework Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage', *Strategic Management Journal*, vol. 14, no. 8, pp. 607-618.

Hamel, G. and Prahalad, C.K. 1989, 'Strategic Intent', *Harvard Business Review*, vol. 67, no. 3, p. 63.

Hamel, G. and Prahalad, C. K. 1990, 'The Core Competence of the Corporation', *Harvard Business Review*, vol. 68, no. 3, pp. 79-91.

Hamel, G. and Prahalad, C.K. 1994, *Competing for the Future*, Harvard Business School Press, Boston.

Hamel, G. 2002, *Leading The Revolution*, Plume, New York.

Hauschild, S., Licht, T. and Stein, W. 2001, 'Creating a knowledge culture', *The McKinsey Quarterly*, vol. 2001, no. 1, pp. 74-81.

Henderson, R. and Cockburn, I. 1994, 'Measuring Competence? Exploring Firm Effects In Pharmaceutical Research', *Strategic Management Journal*, vol. 15, no. Winter, pp. 63-84.

Jones, B.K. 2001, *Knowledge Management: A quantitative study into people's perceptions and expectations in the developing knowledge economy*, DBA thesis, Southern Cross University.

Leavy, B. 2003, 'Assessing your strategic alternatives from both a market position and core competence perspective', *Strategy & Leadership*, vol. 31, no. 6, pp. 29-33.

Leng, T.K. and Shepherdson, C. 2000, 'Knowledge management - The key to staying competitive' [Online], Available at: http://computertimes.asia1.com.sg/archive/2000-03-22/busi_com/busi_com1.htm, [Accessed] 05/06/2002, [Last Updated] 22/03/2000

Leonard-Barton, D. 1992, 'Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development', *Strategic Management Journal*, vol. 13, no. Special Issue, pp. 111-126.

Leonard-Barton, D. 1998, *Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation*, Harvard Business School Press, Boston, MA.

Liebeskind, J.P. 1996, 'Knowledge, Strategy and the Theory of the Firm', *Strategic Management Journal*, vol. 17, no. Winter Special Issue, pp. 93-107.

Martensson, M. 2000, 'A critical review of knowledge management as a management tool', *Journal of Knowledge Management*, vol. 4, no. 3, pp. 204-216.

Michalisin, M.D., Smith, R.D. and Kline, D.M. 1997, 'In search of strategic assets', *International Journal of Organizational Analysis*, vol. 5, no. 4, pp. 360-387.

Mintzberg, H. 1996, Five Ps for Strategy, *in The Strategy Process: Concepts, Contexts, Cases*, H. Mintzberg, and J. B. Quinn, eds.: Upper Saddle River, NJ, Prentice Hall, pp. 12-19.

Nonaka, I. 1991, 'The Knowledge-Creating Company', *Harvard Business Review*, vol. 69, no. 6, p. 96.

Nonaka, I. and Takeuchi, H. 1995, *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, Oxford.

Nonaka, I., Toyama, R. and Konno, N. 2001, SECI, *ba* and leadership: A unified model of dynamics knowledge creation, *in Managing Industrial Knowledge: Creation, Transfer and Utilization*, I. Nonaka, and D. J. Teece, eds.: London, Sage, pp. 13-43.

Pearce II, J.A. and Robinson, Jr, R.B. 1994, *Strategic Management: Formulation, Implementation and Control*, Irwin, Burr Ridge, Il.

Pemberton, J.D. and Stonehouse, G.H. 2000, 'Organisational learning and knowledge assets - an essential partnership', *The Learning Organization: An International Journal*, vol. 7, no. 4, pp. 184 - 194.

Porter, M.E. 1980, *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, Free Press, New York.

Porter, M.E. 1985, *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, New York.

Porter, M.E. and Millar, V.E. 1985, 'How Information Gives You Competitive Advantage', *Harvard Business Review*, vol. 1985, no. July - August, p. 149.

Porter, M.E. 1996, 'What is strategy?' *Harvard Business Review*, vol. 74, no. 6, p. 61.

Prahalad, C. K. and Hamel, G. 1990, 'The Core Competence of the Corporation', *Harvard Business Review*, vol. 68, no. 3, pp. 79-91.

Robbins, S., Bergman, R., Stagg, I. and Coulter, M. 2000, *Management*, Prentice Hall, New Jersey.

Rowley, J. 1999, 'What is knowledge management?' *Library Management*, vol. 20, no. 8, pp. 416-419.

Ruokonen, T. 2001, 'Operation & Maintenance; Support From The Centre', *Modern Power System*, vol. 21, no. 2, pp. 41-43.

Sanderson, S.M. 1998, 'New approaches to strategy: new ways of thinking for the millennium', *Management Decision*, vol. 36, no. 1, pp. 9-13.

Schraeder, M. 2002, 'A simplified approach to strategic planning', *Business Process Management Journal*, vol. 8, no. 1, pp. 8-18.

Senge, P. M. 1990, *The Fifth Discipline: The Art and Practice of Learning Organisations*, Doubleday, New York.

Skyrme, D.J. 1998, 'Developing a Knowledge Strategy' [Online], Available at: http://www.skyrme.com/pubs/knwstrat.htm, [Accessed] 12 May 2004, [Last Updated] January 1998

Snowden, D. 2000, 'Organic Knowledge Management: Part 1 the ASHEN Model: an enabler of action', *Knowledge Management*, vol. 3, no. 7.

Spender, J.C. 1996, 'Making knowledge the basis of a dynamic theory of the firm', *Strategic Management Journal*, vol. 17, no. Winter Special Issue, pp. 45-62.

Stevenson, H.H. 1976, ' Defining corporate strengths and weaknesses', *Sloan Management Review*, vol. 17, no. 3, pp. 51-68.

Stough, S., Eom, S. and Buckenmyer, J. 2000, 'Virtual teaming: a strategy for moving your organisation to the new millennium', *Industrial Management & Data Systems*, vol. 100, no. 8, pp. 370-378.

Teece, D. J., Pisano, G. and Shuen, A. 1997, 'Dynamic Capabilities and Strategic Management', *Strategic Management Journal*, vol. 18, no. 7, pp. 509-533.

Thorbjørnsson, S., Mouritsen, J., Bukh, P.N. and Johansen, M.R. 2004, Intellectual capital and new public management: McMaster World Congress, 14-16 January 2004, Hamilton, Ontario, Canada.

Walters, D., Halliday, M. and Glaser, S. 2002, 'Added value, enterprise value and competitive advantage', *Management Decision*, vol. 40, no. 9, pp. 823-833.

Wang, Y. and Lo, H.P. 2003, 'Customer-focused performance and the dynamic model for competence building and leveraging: A resource-based view', *Journal of Management Development*, vol. 22, no. 6, pp. 483-526.

Wernerfelt, B. 1984, 'A Resource-based View of the Firm', *Strategic Management Journal*, vol. 5, no. 2, pp. 171-180.

Yin, R.K. 2003, *Case study research - Design and Methods*, Sage, Thousand Oaks.

Zack, M. 1999, 'Developing a Knowledge Strategy', *California Management Review*, vol. 41, no. 3, pp. 125-145.