



UNIVERSITY OF OREGON
APPLIED INFORMATION MANAGEMENT

Presented to the Interdisciplinary
Studies Program:
Applied Information Management
and the Graduate School of the
University of Oregon
in partial fulfillment of the
requirement for the degree of
Master of Science

Knowledge as a strategic asset: Aligning knowledge management practices in support of strategic management processes and goals

CAPSTONE REPORT

**Ben Pacewic
Manager, Data Analysis and
Reporting
Health Services Actuarial
PacifiCare Health Systems**

University of Oregon
Applied Information
Management
Program

March 2004

722 SW Second Avenue
Suite 230
Portland, OR 97204
(800) 824-2714

Approved by

Dr. Linda F. Ettinger
Academic Director, AIM Program

Abstract

for

Knowledge as a strategic asset: Aligning knowledge management practices in support of strategic management processes and goals

Knowledge is a valuable driver of business strategy (Zack, 1999b). Establishing the link between knowledge and strategy is essential for competitive advantage (Von Krogh, Ichijo, & Nonaka, 2000). A content analysis (Palmquist, 2001) of selected literature in the areas of knowledge management (published 1996 – 2004) and strategy (published 1986 – 2004) provides the foundation for development of the connection. The outcome of this study is a table for evaluating several methods of linking knowledge and strategy.

Table of Contents

Chapter I. Purpose of the Study	5
Brief Purpose	5
Full Purpose	7
Significance of the Study	10
Limitations to the Research	11
Definitions	14
Problem Area	17
Chapter II. Review of References	21
Chapter III. Method	32
Method	32
Data Collection	33
Data Analysis	37
Data Presentation	39
Chapter IV. Analysis of Data	43
Integrating Knowledge and Strategy	45
Chapter V. Conclusions	53
Bibliography	56
List of Tables and Figures	
Table 1. Source Analysis – Terms and Themes	39
Table 2. Key Integration Method Template	41
Table 3. Stage 1 and 2 Coding Results	44
Figure 1. Gap Analysis	47
Figure 2. A Resource-Based Approach to Strategy Analysis: A Practical Framework	49
Figure 3. Relationship between knowledge management and competitive advantage	50
Table 4. Key Integration Method	51

Chapter I. Purpose of the Study

Brief Purpose

Business strategy has traditionally been guided by external forces acting upon the organization (Mohammed, Jaworski, Fisher, & Cahill 2002; Porter, 1996). However, as noted by Barney (2001), competitive advantages are not always created by assessing, and adjusting to, the external environment. Companies in industries that create value based on their intellectual capital require a different approach to strategy (Fjeldstad & Haanaes, 2001). The purpose of this paper is to explore ways knowledge management practices (Davenport & Prusak, 2000) can be integrated into an organization's strategic management processes and goals to the benefit of long-term objectives and competitive advantage (Saloner, Shepard, & Podolny, 2001; Zack, 1999b).

A review of selected knowledge management literature written between 1996 and 2004 and business strategy literature written between 1986 and 2004 provides a foundation for gaining insight into what companies can do to improve their strategic management processes through the use of knowledge as a strategic asset. Particular focus during literature collection (Creswell, 2003) is placed on literature that addresses both knowledge and strategy. Content analysis techniques are used (Palmquist, 2001) to identify connections in the literature between knowledge and business strategy. This method provides a systematic way of collecting and analyzing literature to find connections between knowledge management practices and strategic management processes.

The outcome of this research is a table that demonstrates the components of business strategy and knowledge management that have been shown in the literature to align together to improve an organization's success to achieve long-term objectives. The information presented in this table is intended for an individual or team working in a competitive industry with responsibility for setting and managing the strategic direction of their business. It may also be useful to individuals who are implementing a knowledge management initiative.

Full Purpose

According to Zack (1999b) an organization's strategy, or the way it balances itself between the external environment and internal capabilities, is the most important context within which to successfully guide and integrate knowledge management. The role of knowledge management is to help achieve the organization's strategy and goals, and to do that it must be firmly rooted in the context of the organization's strategy (Rumizen, 2002).

The link between knowledge management and business strategy is mentioned frequently, but has been virtually ignored in practice (Von Krogh, Ichijo, & Nonaka, 2000; Zack, 1999a, 1999b). Assessing the connections between business strategy and knowledge management can lead to practical methods to improve the effectiveness of both (Davenport & Prusak, 2000). The outcome of this study, a table that aligns knowledge management processes and results with the requirements of a knowledge-driven business strategy, is intended to be of particular interest to those involved in knowledge management initiatives and business strategy development.

Knowledge management (KM) is the practice of finding, collecting, packaging, and disseminating knowledge so it can be used by people to be more effective and productive in their work (Hahn & Subramani, 2000). Knowledge generation and transfer are essential sources of a sustainable competitive advantage (Osterloh & Frey 2000). Knowledge creates a sustainable advantage because it generates increasing returns and continuing advantages, unlike material assets (Davenport & Prusak 2000, p17).

Strategic management is about developing or using a set of tools and concepts for uncovering the relationships between the decisions the company makes and the performance the company realizes (Saloner, Shepard, & Podolny, 2001). Strategy is not always explicit; it can be embodied in the routines of the organization (2001, Saloner, Shepard, & Podolny, p 34). Routines and practices may continue to occur regardless of the explicit strategic direction.

According to Horwitch and Armacost (2002), knowledge management processes should not be viewed as separate administrative functions, but as enabling the most important elements of business strategy. Knowledge is considered intellectual capital; however it is valuable only when an organization is able to turn it into action (Chase, 2002). In a survey performed by KPMG (2003), while 80% of organizations recognize knowledge as a strategic asset, in order to take advantage of business opportunities companies must assess their strategic capabilities during the decision-making process.

Porter (1996) has created several well known models for assessing a firm's competitive position in the market to create strategies to gain a competitive advantage. The models, such as the five-forces model and the value chain, advance what has been called a market-based view of strategy because of their external orientation (Maier & Remus, 2002). Alternatively, an approach based on an organization's internal capabilities and resources has been called the resource-based view (Bowman & Ambrosini, 2003; Barney, 2001, 1991; Grant, 1991). In the resource-based view an organization's success is determined by unique resources relative to the organization. Knowledge management, when

seen from this point of view is the discovery of an organization's most valuable and unique resources; what it knows.

This paper takes the position that the resource-based view of the firm (Barney, 1991) can improve strategy development in certain industries. In complicated industries there are hundreds of decisions to be made and the larger the company the more managers there are making those decisions. And while knowledge management is not a single answer to understanding the complex problem of business strategy, according to Rumizen (2002) knowledge management may help uncover the need to change strategy itself.

Using literature review (Creswell, 2003), sources from both strategy and knowledge management disciplines are collected and used to design the framework for the paper. Content analysis techniques (Palmquist, 2001) are used to examine the seventy five collected references and select those that are most pertinent to the purpose of this study. Each source is examined for containing theories on:

- The importance of knowledge to business strategy.
- Using knowledge to create business strategy, a resource-based view.
- Integrating knowledge management into business strategy to improve competitive advantage.

A final set of forty seven references is selected. The goal of the next level of content analysis is to identify methods that emerge for ways to use knowledge management more strategically and incorporate an organization's unique intellectual capabilities into business strategy. Terms including knowledge,

knowledge management, strategy, and resource-based are used to guide this analysis.

The results of the content analysis are used to create a table that demonstrates the components of business strategy and knowledge management that have been shown in the literature to work together (see Table 4). The table is intended to be a management tool for assessing ways to link knowledge and strategy. The table displays the results of the data analysis and contains the following components:

- Key integration method for incorporating knowledge into strategy
- How knowledge is applied for the method
- Strategic implications

The user of Table 4 can apply it to assess which method(s) may be most appropriate to their situation and gain an understanding for the implications to strategy development.

Significance of the Study

Knowledge has been widely recognized in literature to be a source of a lasting competitive advantage (Davenport & Prusak, 2000; Von Krogh, Ichijo, & Nonaka, 2000; Nonaka, 1998). Knowledge has also been specifically identified to be a valuable source for driving business strategy (Zack, 1999b). In resource-based theories organizational knowledge is a key component to the foundation for strategy (Bowman & Ambrosini, 2003; Barney, 1991; Grant, 1991). Work by Barney (2001, 1991) and Grant (1991) on the theory of the resource-based view

of the firm provides a considerable foundation for linking knowledge to business strategy.

For business managers, the importance of knowledge is understood through practical application in the business environment (Von Krogh, Ichijo, & Nonaka, 2000). Talking about what knowledge management will do or the potential advantages it could create does nothing if knowledge is not part of a larger strategic framework. A practical framework to assess the role of knowledge in relation to strategy is essential (Von Krogh, Ichijo, & Nonaka, 2000, p 71).

The intent of this study is to explore ways knowledge management practices can be integrated into an organization's strategic management processes. Establishing the link between knowledge and strategy provides a basis for the development of a framework as described by Von Krogh, Ichijo and Nonaka (2000). The outcome of this study is a table for evaluating how knowledge and strategy can be linked. It demonstrates the components of business strategy and knowledge management that have been shown in the literature to work together.

Limitations to the Research

The subjects of knowledge management and business strategy have been written about extensively. This paper covers only a small component of each one where the subjects overlap for the specific purpose of demonstrating how they can work together.

According to Saloner, Shepard, and Podolny (2001, p 33) there are seven major steps in the strategy development process. They are:

- Strategy Identification
- Strategy Evaluation
- Strategic Option Development
- Strategic Option Evaluation
- Strategy Selection
- Strategy Communication
- Implementation

This paper does not address all of these steps. Using the resource-based view of the firm (Barney, 1991) knowledge can play a key role in strategy identification and strategy evaluation as it relates to the internal business context. This is the perspective that underlies this paper. Strategic option development and option evaluation, strategy selection, as well as strategy communication and implementation are outside the scope of this paper. It is important to remember that strategy is made up of action and context and the context includes both the internal and external environments (2001, Saloner, Shepard, & Podolny, p 3). The important role the external business environment plays in identifying and evaluating business strategy is also outside the scope of this paper.

There are several different definitions of knowledge management. Davenport and Prusak (2000) define it simply as an attempt to accomplish organizational objectives by doing something useful with knowledge. It has also been defined more specifically as the systematic processes, by which knowledge

needed for organizational success is created, captured, shared and leveraged (Rumizen, 2002, p 9). These definitions are both applicable for the purposes of this paper. By linking knowledge to strategy, the intent is certainly to do something useful with knowledge. Using Rumizen's (2002) expanded definition, sharing and leveraging knowledge are also applicable in the context of doing something useful with knowledge. The other components Rumizen (2002) mentions, creating and capturing knowledge, are excluded from the context of this paper. What knowledge is used to do, the sharing and leveraging components as they relate to strategy, are used in this paper. Other components that contribute to successful knowledge management such as culture, information technology, and incentives (Davenport & Prusak, 2000) are not addressed within this paper.

Knowledge management is a relatively new subject area and theories and writings about it have been evolving over the past ten years. Literature for this paper has been limited to that which has been written since 1996 to the present in regards to knowledge management. This time frame provides both early and present day theories about knowledge management. Business strategy literature must be collected over a longer time frame because many of the strategic theories in use today were developed over twenty years ago and refined as the economy has changed. Porter (1996) specifically had developed strategy models in the 1980's that are still widely applied (Zack, 1999a). Literature for business strategy has been limited to that which was written between 1986 and the present. The year 1986 was chosen based upon when Barney (1986) began to

write about using a company's internal strengths to guide strategic choices. Particular emphasis is placed on collecting literature that contains both knowledge and strategic perspectives, and that addressing the resource-based view of companies.

Definitions

Business strategy – is the way an organization balances itself between the external environment and internal capabilities (Zack, 1999b).

Competitive advantage – is created when a value creating strategy is implemented and cannot be simultaneously implemented by competitors (Barney, 1991).

External environment - can be thought of as the competitors and market, on which a traditional opportunities/threats analysis would be applied to inform strategy (Barney, 1991).

Knowledge management –is the systematic processes, by which knowledge needed for organizational success is created, captured, shared and leveraged (Rumizen, 2002, p 9). More simply it is an attempt to accomplish organizational objectives by doing something useful with knowledge (Davenport & Prusak, 2000).

Knowledge strategy – is balancing knowledge-based resources and capabilities to the knowledge required for providing products or services in superior ways (Zack, 1999b, p xi).

Intellectual capital – is everything an organization knows. It includes ideas, innovations, and knowledge; all of which can be turned into profit (Rumizen, 2002).

Internal context – are the assets the organization owns and the way it is organized. Assets include know-how, business processes, plant and equipment, brand equity, formal and informal organizational structure, and financial resources (2001, Saloner, Shepard, & Podolny, p 2).

Market-based view – is a perspective of looking at strategy that involves using external factors to analyze a firm's environment. This view uses competitive positioning and addresses organizational resources mostly in the implementation phase. (Maier & Remus, 2002).

Organizational resources – include all assets, capabilities, processes, attributes, information, and knowledge controlled by an organization that enable strategies to be created and implemented (Barney, 1991).

Resource-based view – examines the link between the internal characteristics and capabilities of an organization and organizational performance (Barney, 1991).

Strategy – is an overall approach to the achievement of business objectives. It contains four components: long term goals, scope, the competitive advantage to achieve, and the logic (the internal context) that will allow achievement of a competitive advantage (2001, Saloner, Shepard, & Podolny, p 20).

Strategic management – is the development of a set of conceptual tools for uncovering the systematic relationships between the choices management

makes and the performance the organization realizes (2001, Saloner, Shepard, & Podolny, p 1).

Problem Area

Knowledge management has become an issue of information technology first, organizational behavior a distant second, followed by the business strategy that has been essentially ignored (Zack, 1999b). In other words, while there are numerous authors who present KM tools, activities, or efforts as 'strategies' (Maier & Remus, 2002), according to Maier and Remus (2002) most organizations do not pay much attention to the strategic value of KM initiatives or the connection between knowledge and business strategy. As Maier and Remus (2002) have noted, knowledge management literature is rich in talking about the importance of knowledge strategy, but poor at showing how knowledge and strategy are connected. The importance of linking knowledge and strategy and the difficulties in doing so have also been identified by Zack (1999a, 1999b) and by Davenport and Prusak (2000), among others.

For firms that are in the business of selling their knowledge (such as consulting and software companies) the link to strategy is more of a natural progression because knowledge is the product (Davenport & Prusak, 2000). However, for organizations in other businesses, leveraging knowledge in ways that matter to long term success is rare (Davenport & Prusak, 2000, p ix,x). A primary reason appears to be that it is difficult to demonstrate that KM investments provide strategic value to the organization, thus providing a major obstacle to their implementation (Odom & Starns, July/August 2003).

There is a great deal of agreement in the management literature that knowledge management must be firmly linked to business strategy and the

creation of value and competitive advantage in order to be a sustained effort (Maier & Remus, 2002). Business strategy provides a necessary link between thinking about something and actually getting it done (Von Krogh, Ichijo, & Nonaka, 2000). In terms of knowledge management this implies that if the effort is not closely tied to the business strategy, a KM initiative is destined to be less than a success.

Knowledge management represents one method of supporting the identification, development, and acquisition of knowledge based resources (Maier & Remus, 2002). With a strategy that recognizes the importance of knowledge to long-term success, there is a much greater chance of attaining quantifiable results (Von Krogh, Ichijo, & Nonaka, 2000). This is easier said than done however. Linking knowledge to strategy does not happen by accident.

Strategic management models have traditionally defined strategy in terms of market positioning or products (Zack, 1999b). The shortcoming of this approach is that it does not explicitly take into account the unique capabilities of an organization in relation to its competitive advantage. Acknowledging the limitations in the knowledge management literature in relation to strategic applications, the resource-based view provides a basis for advancing the findings of researchers in this area to that of knowledge management and business strategy.

The resource-based approach to strategy takes the view that strategy should be based on resources and capabilities rather than on products and services to create competitive advantage (Zack, 1999b). This view, as presented

in research by Barney (2001, 1991, 1986), Grant (1991) and Bowman and Ambrosini (2003), presents perspectives on using resources, including knowledge, to inform strategy. Grant (1991) describes a framework in which strategy is formulated first by analyzing a firm's resource base, then assessing the firm's capabilities before analyzing profit potential and selecting a strategy. Inherent in this approach is the extension and upgrading of a firm's resources and capabilities (Grant, 1991), which is a goal of knowledge management. Barney (1986) also presents a perspective on using resources to improve strategy. The future value of a resource can be assessed more accurately by analyzing the skills and capabilities already in the control of the organization (Barney, 1986).

The practical applications of this paper are to (1) provide the reader with a basis for pursuing knowledge management from a strategic perspective and (2) to advance methods of integrating knowledge into business strategy for the benefit of long-term objectives. The work of Grant (1991), Zack (1999a), and Von Krogh, Ichijo and Nonaka (2000) provides practical and applicable perspectives on aligning knowledge and strategy in a manner that is useful to managers in a business environment. The framework described by Grant (1991) supports the practical link of knowledge and strategy by providing specific steps that must be taken before a strategy is selected. The work of several resource-based researchers was applied in work by Zack (1999a) to promote an applicable methodology of aligning knowledge with strategy. The literature has clearly pointed out that the importance of knowledge to managers is what can be done

with it practically in the business environment (Von Krogh, Ichijo, and Nonaka, 2000). The outcome of this paper, a table describing key areas where knowledge and business strategy can be integrated, describes the connection in a practical manner that can be put to use by a manager as one tool for evaluation. This research is for the benefit of managers seeking ways to evaluate connecting their knowledge management initiatives to business strategy.

Chapter II. Review of References

This section reviews the key references used in supporting the Purpose and Problem presented in this paper. Each reference (listed alphabetically) is annotated with a complete bibliographic reference and discusses several issues including (1) the key aspects of the reference relative to the Purpose and/or Problem presented in this paper, (2) the sections and parts of this paper that the reference is used to support, and (3) the criteria used to select the reference.

Barney, J. B. (1991, March). Firm resources and sustained competitive advantage. *Journal of Management* 17(1) pp 99-120. Retrieved January 26, 2004 from EBSCO (Business Source Premier).

Barney provides a compelling argument for using the resource-based view as the basis to guide strategy along with a detailed description of what the resource-based view is. The resource-based view is aligned in this paper with knowledge management as a way of discovering what an organization's most valuable strategic resources are. The primary application of this article is to support the Purpose of this paper, which takes the position that the resource-based view of the firm can improve strategy development. Barney's article is also selected as a reference used in the Analysis of Data section of this paper. Although Barney addresses the problems and shortcomings of the market-based view, the purpose of this paper focuses on the resource-based view and problems that can occur when a connection between knowledge and strategy is not made.

This article details the attributes a resource must have in order for it to function as a potential sustainable competitive advantage. These attributes could be important for identifying which knowledge-related assets to incorporate into a business strategy. The attributes for a resource to have a competitive advantage, as described by Barney, are:

- 1) it must be valuable, in that it exploits opportunities or neutralizes threats
- 2) it must be rare among the organization's current and potential competition
- 3) it must not be something that can be imitated perfectly by others (Barney calls this imperfectly imitable)
- 4) there can't be strategically equivalent substitutes for this resource that are valuable, but neither rare or imperfectly imitable

Barney also provides many of the foundational definitions of terms used in this paper; such as competitive advantage, external environment, organizational resources, and resource-based view.

Barney's work in the area of the resource-based view of the firm has been widely cited by other researchers. According to information provided in the electronic journal database EBSCO Business Source Premier, this article has been cited no less than 641 times in other articles contained in the EBSCO database.

Davenport, T., & Prusak, L. (2000). *Working knowledge, how organizations manage what they know.* Boston, MA: Harvard Business School Press.

Davenport and Prusak address knowledge management from a broad context. They provide foundational material about the subject and go into detail about knowledge generation, codification, transfer, knowledge roles, technologies, and implementation.

Davenport and Prusak give a few examples of how linking knowledge to strategy (i.e., the Purpose of this paper) may be attained. In essence they describe that one way to do it is not through the use of a knowledge management strategy, but rather through a business strategy that is supported by knowledge. With an already well-defined strategy, a company can determine how the more effective use of knowledge can support or enhance strategy.

Some of the challenges of knowledge management are addressed, including that of linking knowledge to business strategy. Although Davenport and Prusak do not go into great detail on establishing the link, they do describe the importance of it, which provides background information for the Problem Area of this paper.

Additionally this book supports the Significance of this study. Davenport and Prusak recognize that knowledge is a source of a lasting competitive advantage. The reason for linking knowledge and strategy is to exploit knowledge for long-term benefits.

The publisher of this book is the Harvard Business School Press, which is known for producing quality material that has been critically reviewed. Davenport

and Prusak are both very experienced in knowledge management and their works are widely cited by other researchers and widely used by business professionals.

Grant, R.M. (1991, Spring). The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review* 33(3). Retrieved January 22, 2004 from EBSCO (Business Source Premier).

Grant provides a framework for incorporating a resource-based approach into strategy analysis. His focus, which informs the Purpose of this paper, is primarily on what can be done, rather than on what hasn't worked in the past.

This article advances a practical, rather than theoretical, foundation for integrating the resource-based theory and strategic management. Grant organizes a framework around a five-stage procedure for strategy formulation. The procedure includes analyzing the firm's resource-base; appraising the firm's capabilities; analyzing the profit-earning potential of the resources and capabilities; selecting a strategy; and extending and upgrading the pool of resources and capabilities. He describes each step in detail and provides a chart.

Grant concludes that resources and capabilities are the primary constants upon which a firm can establish its identity and strategy. Effective strategy design must maximize the unique characteristics of the firm.

Grant has been widely published in management and strategy journals. This specific article was published in the California Management Journal, which is a peer-reviewed publication produced by the University of California Berkeley Haas school of business. The article has been cited in two other scholarly journals and contains forty seven references.

Maier, R. & Remus, U. (2002, April/June). Defining process-oriented knowledge management strategies. *Knowledge and Process Management* 9(2) pp 103-118. Retrieved January 19, 2004 from University of Oregon libraries catalog at <http://janus.uoregon.edu>

The authors Maier and Remus present a perspective on integrating knowledge management with strategy through a process orientation. Through this view, they argue, the resulting strategies address integrating the resource-based view of an organization with the market-oriented view. The resource-based view is the main focus of knowledge management in their perspective.

This article describes some of the problems in regards to linking knowledge and strategy. Maier and Remus put forth that knowledge management approaches are often looked at from many angles except for their strategic value. They say that there are many authors who suggest that some KM tools or activities are 'strategies', but these authors then do not go on to describe the link to business strategies.

Maier and Remus discuss that the resource-based view is used to examine the internal capabilities of an organization. They also say that

knowledge is commonly believed to be the most important strategic resource of an organization. Their discussion supports the Purpose of this paper in establishing the importance of creating the link between knowledge and strategy. What knowledge management does, in their perspective, is to support the identification, development, and acquisition of knowledge-related resources. They detail the relationships between knowledge management and a strategic management process. Additionally, they discuss culture and organizational structure.

Knowledge and Process Management is an academic journal that publishes papers and case studies on knowledge management and organizational learning. This particular article cites other leading researchers, also cited in this paper such as Davenport and Prusak, Grant, Barney, and Zack.

Rumizen, M.C. (2002). *The Complete Idiot's Guide to Knowledge Management*.

Madison, WI: John A. Woods, CWL Publishing Enterprises.

This book provides a practical overview of knowledge management. Rumizen provides a background on KM, how to get a KM initiative started, potential problems, how to measure progress, and keeping the initiative going. The role of knowledge as it relates to strategy is one of the areas discussed.

In chapter 5, Rumizen describes considerations for developing a knowledge management strategy. One of the main points raised is that knowledge management must be ingrained in the context of the organization's

strategy. The ideal of a knowledge management initiative tightly linked to strategy supports the Purpose of this paper.

Rumizen defines knowledge management as a process for creating, capturing, sharing, and leveraging knowledge needed for organizational success. The book was selected as a key reference for this paper because this definition focuses on the reason for doing knowledge management in the first place, i.e., to better the organization for the future.

This book has been endorsed by several KM professionals and contains a foreword by Laurence Prusak, co-author of *Working Knowledge*. Rumizen has served as a knowledge strategist for Buckman Labs. Buckman Labs is often talked about as an example of one of the best implementations of knowledge management in the United States.

Saloner, G., Shepard, A., & Podolny, J. (2001). *Strategic Management*. New York: John Wiley & Sons.

This book covers the topic of strategic management and helps to frame this paper within a strategic context. The definitions of strategy and of strategic management used in this paper are from this book.

The seven major steps in the strategy development process described by Saloner, Shepard, and Podolny are used to define the scope and limitations of this paper. The first two steps, strategy identification and strategy evaluation are most applicable to this paper, while the other five steps define the rest of the strategy development process but are outside the scope of this paper.

The authors of this book are Stanford University business school professors and have each taught the strategic management MBA course. Stanford is regularly recognized as one of the top business schools in the country. This book contains information based on ten years of class lessons as taught by the authors.

Von Krogh, G., Ichijo, K., & Nonaka, I. (2000). *Enabling Knowledge Creation, How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation.* New York, NY: Oxford University Press.

In this book the authors focus on activities that promote knowledge creation. They distinguish between managing knowledge and enabling its creation. The purpose of creating knowledge is so that it can be used for establishing a competitive advantage.

The book contains an entire chapter on strategy and knowledge creation. In chapter 4, "Strategy and Knowledge Creation", the authors say that the importance of knowledge is what can be done with it practically in the business setting. They say that strategic discussions often focus on results and objectives before knowledge creation even starts. Approaching strategy in this manner will not advance companies into new markets or products. Effectively using knowledge has become a core element of a successful business strategy.

Von Krogh, Ichijo, and Nonaka include in their discussion on strategy a framework for incorporating knowledge. They distinguish between survival and advancement strategies and describe aspects of competitive advantage, the role

of knowledge, knowledge processes and the result. Their framework is one source that informs the structure for the Data Presentation section of this paper.

Individually and together, these authors are continually cited in journal articles and books. They have been published in many of the country's top business school publications, including Harvard Business Review, Sloan Management Review, and California Management Review.

Zack, M.H. (Ed.). (1999). *Knowledge and Strategy*. Woburn, MA: Butterworth-Heinemann.

In this book Zack has assembled some of the most applicable research works to form support for establishing a knowledge-based strategy. His introduction is similar to his 1999 article printed in California Management Review, however he does not go into detail to describe the framework of a knowledge strategy. He does discuss the need for a knowledge strategy and introduces the articles collected in the book as they relate to the subject.

The book includes articles on the resource-based view of the firm, the resource-based view of knowledge, characteristics of knowledge as a strategic asset, and a final section on knowledge and strategy.

The introduction in this book, written by Zack, supports the Purpose section of this paper. The collected works Zack has put together within this book have been selected for coding and included in the Analysis of Data section of this paper.

Also included as a key reference in this paper is Zack's 1999 article written in the California Management Review. This book was selected to add to the information Zack presented in this article and to get the additional resources that Zack had selected as being of importance to creating a knowledge-based strategy.

Zack, M. H. (1999, Spring). Developing a knowledge strategy. *California Management Review* 41(3). Retrieved January 13, 2004 from EBSCO (Business Source Premier).

Zack discusses the view of knowledge as a strategic resource and how linking knowledge and strategy can improve the success of knowledge management. Knowledge is considered the most important strategic resource in this article because it allows a company to understand how to take advantage of its capabilities in a way that can provide a strategic advantage.

He has done research with over 25 companies and has found that strategy is the most important context for guiding knowledge management. One of the problems he has found is that the importance of the link between knowledge and strategy is often talked about, but is mostly ignored in practice. This finding supports the problem area of this paper.

Zack makes the distinction between using the external environment and internal capabilities in analyzing strategy. His article represents an important resource to this researcher in that he emphasizes the significance of the

resource-based view as it relates to knowledge and strategy. His article supports the Purpose of this paper in this regard.

This article additionally provides a beginning model of how linking knowledge and strategy could potentially be achieved. Zack puts forth what he describes as a knowledge strategy framework. He concludes that by grounding knowledge management in business strategy companies will be able to come out ahead of competitors who are not linking their knowledge and business strategies.

This article has been cited sixteen times in other scholarly journals and contains forty nine references. California Management Review is a publication of the University of California Berkeley Haas school of business and publishes peer-reviewed professional articles.

Chapter III. Method

Method

Literature review (Creswell, 2003) is used as the primary research method for this study. The goal of this study is to find ways to integrate knowledge and strategy. Sources addressing both are important for this reason. The literature review focuses on sources that address knowledge management from a strategic perspective and using knowledge to inform strategy. There exists a considerable volume of literature on knowledge management and on strategy, which makes using literature review an appropriate method for this study. Additionally, the intent of this paper is to use the works of other researchers as the foundation to understanding the problem area. Literature review also shows how the purpose presented in this paper is related to the broader dialogue about the topic (Creswell, 2003).

The literature is limited by both time frame and by content categories. The two primary categories are knowledge and strategy. Knowledge management is a relatively new concept and literature on it in this study is limited to that which has been written since 1996. This time frame allows for both early and present day theories about knowledge management.

Business strategy literature is collected using a longer time frame. Many of the strategic theories in use today were developed over twenty years ago. Literature for strategy is limited to that which was written between 1986 and the present. This time frame is chosen based upon when the importance of organizational knowledge in relation to strategy began to be identified in the

literature, which includes the present back to 1986. An article by Barney (1986) concludes that strategic choices should be guided by analyzing a company's unique skills and capabilities. This article is still relevant today.

Particular emphasis is placed on collecting literature that contains both knowledge and strategic perspectives, and that addresses the resource-based view of companies as Barney (1986) presents in his article. Because this view provides a way to link knowledge and strategy, it is selected as the third key content component in this paper. The resource-based view has been deeply researched and provides a basis for informing strategy based on the knowledge an organization possesses. Barney (2001, 1991, 1986) has written about the resource-based view of the firm for nearly eighteen years and his work has been cited extensively in the works of other researchers, such as Bowman and Ambrosini (2003) and Grant (1991).

Data Collection

Literature sources include books, journal and magazine articles, and websites. Scholarly, cited, referenced, and peer-reviewed sources are given preference. These sources are preferred because they could be easily evaluated for quality, and their publications could also be examined (Creswell, 2003). Journal articles are chosen first because they are easy to find and they also report the research that has been done about the subject (Creswell, 2003). Websites are limited to those publishing information about knowledge management or business strategy to reduce the frequency of retrieving unreliable

sources. Sources returned in searches that are not easily verified through citations or by the author's previous work are excluded. Several sources are chosen specifically by how frequently they are cited in other related works.

Full text databases, such as EBSCO, MAS Ultra, and the University of Oregon library catalog are used for locating full-text electronic journal articles. EBSCO allows for searches of peer reviewed articles and lists the number of references within the article and the number of times it is cited in other articles. These measures are particularly effective at narrowing searches and finding relevant information. The electronic academic databases used are as follows:

- EBSCO (Business Source Premier)
- LexisNexis Academic
- MAS Ultra – School Edition
- University of Oregon online library catalog

Knowledge management related websites are used to find writings that were based in the field of knowledge management. The sites www.knowledgeboard.com and www.KMWorld.com contain a great deal of information on knowledge management.

Specific search terms are used to narrow the sources and locate appropriate articles. The initial list of search terms is derived from several knowledge management sources identified in previous knowledge management research conducted by this researcher. The foundational book *Working Knowledge* by Davenport and Prusak (2000) contains the majority of preliminary information required to develop a beginning list of search terms. The subject for

this paper is also partially informed by this book. Initially the following terms are used to guide the search for resources:

- Knowledge
- Knowledge management
- Knowledge management and strategy
- Knowledge management and methods
- Business strategy
- Business strategy and development

These terms are used in specific academic databases as mentioned above. The use of academic database searches helps to further refine the search and narrow what is returned. Large numbers of knowledge management articles results in searches using “knowledge” or “knowledge management” as a requirement for the title. These sources are then further refined by adding the term “strategy” as a requirement in the abstract or article text. Some sources on knowledge management are kept, however, that do not contain the word strategy if they provide background information on using knowledge to make business decisions.

An article by Zack (1999a) presents the notion of the resource-based view of the firm as a foundational link between knowledge and strategy. The term resource-based is included in the list of search terms to find additional articles using the resource-based theory as it relates to strategy. Although this is a departure from using knowledge as a search term, the articles returned are very relevant to the underlying purpose of this paper, the link between knowledge and strategy.

Several books on strategy and knowledge management are used in addition to the journal articles. These books are chosen because they have been used by other researchers as sources in scholarly journal articles and papers.

The six books used are as follows:

Davenport, T., & Prusak, L. (2000). *Working knowledge, how organizations manage what they know*. Boston, MA: Harvard Business School Press.

Harvard Business Review. (Ed.). (1998). *Harvard Business Review on Knowledge Management*. Boston, MA: Harvard Business School Press.

Rumizen, M.C. (2002). *The Complete Idiot's Guide to Knowledge Management*. Madison, WI: John A. Woods, CWL Publishing Enterprises.

Saloner, G., Shepard, A., & Podolny, J. (2001). *Strategic Management*. New York: John Wiley & Sons.

Von Krogh, G., Ichijo, K., & Nonaka, I. (2000). *Enabling Knowledge Creation, How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation*. New York, NY: Oxford University Press.

Zack, M.H. (Ed.). (1999). *Knowledge and Strategy*. Woburn, MA: Butterworth-Heinemann.

Initially thirty eight sources, primarily consisting of journal articles and books, are collected using key words. These articles are then examined based on their abstract or content to gain a sense of their appropriateness to the topic. Additional resources are found using the references sections of the most relevant articles and by locating additional works by the authors of relevant articles. In all, a total of seventy five resources are collected for potential use in this paper. The

number is reduced to fifty one resources through a process of eliminating articles that do not address a component of the central theme of this paper; the link between knowledge and strategy. Articles are kept if the author discusses an internally-informed strategy, the need for a connection between knowledge and strategy, or if specific knowledge management strategies are discussed.

Data Analysis

Content analysis is used to find the presence of concepts relevant to this paper (Palmquist, 2001). The intended outcome of the data analysis is to identify instances of the relationship between knowledge management and business strategy. The goal is to be able to document the value of the relationship between knowledge and strategy, particularly for using knowledge to guide strategy to gain competitive advantage.

The first stage of coding involves using several pre-defined terms and themes located in the foundational literature. The following terms and phrases are used to code the selected resources: strategy, knowledge strategy, and business strategy. The themes include:

Theme 1: Linking knowledge management and business strategy.

Theme 2: Knowledge as a strategic resource.

The second coding stage is to incorporate the term resource-based and to add two additional themes. The concept list needed to be more interactive because of the need to expand on what resource-based implies. The additional themes are as follows:

Theme 3: Analyzing a firm's skills and capabilities to guide strategy.

Theme 4: Gaining competitive advantage by exploiting internal strengths.

These themes become an interactive set of concepts because theme three and four were not pre-defined; they were defined during the first coding process (Palmquist, 2001). The use of an interactive set of concepts allows for more flexibility in the coding procedure and is appropriate in the context of this paper because of the additional concept of the resource-based view and its link to strategy (Palmquist, 2001).

Using selective reduction (Palmquist, 2001) the most significant articles from the preliminary search are chosen based on applying the required terms and themes. This strategy is useful in narrowing the resources to those that address the central problem of this paper most directly. Then the most pertinent resources are coded. This process of analysis is flexible enough to allow for resources that contain other themes in addition to those coded. If a resource addresses the coding concepts in any manner, it is selected for analysis.

The selective reduction process allows concepts to be coded only if they are representative of the terms and themes being coded. This level of analysis is strict enough to exclude the presence of themes in the literature that describe knowledge and strategy, but are not representative of a knowledge and strategy link. For example, while many researchers have put forth the importance of a "knowledge management strategy" as a method of implementing knowledge management, the strategy does not relate to the actual strategic implications of using knowledge to inform strategy (Maier & Remus, 2002). Concepts are

translated into themes for this paper if such a link between knowledge and strategy is explicitly described. For example, a theme may describe the role of strategy or the potential benefit to strategy, but it does not represent the process for doing it. The themes, presented in this paper as potential methods of linking knowledge and strategy, provide a way to structure Data Presentation.

Resources are coded for containing the key themes and terms. Once the coding process is complete the results are organized in tabular fashion demonstrating the distribution of sources in relation to the terms and themes being coded. Below is a template of the table (see Table 1) outlining these results:

Table 1: Source Analysis – Terms & Themes

Terms and Themes	Sources
Strategy	#
Knowledge strategy	#
Business strategy	#
Resource-based	#
Theme 1: Linking knowledge management and business strategy	#
Theme 2: Knowledge as a strategic resource	#
Theme 3: Analyzing a firm's skills and capabilities to guide strategy	#
Theme 4: Gaining competitive advantage by exploiting internal strengths	#

Data Presentation

The presentation of data is based on the results of the data analysis, which identified key methods of linking knowledge and strategy. The approach, described in the literature for linking knowledge and strategy, is reported in Table 2: "Key Integration Method".

The coding process reveals several common themes in the literature related to linking knowledge and strategy. The themes are significant because they expose potential methods of linking knowledge and strategy described in the literature. The themes can potentially describe the role of knowledge to strategy or the strategic benefit.

While the broad application of themes makes them particularly effective for data analysis purposes, further detail is required for data presentation. Themes provide supportive reasons for linking knowledge and strategy, but they are not in and of themselves methods of how to do it. The distinction between methods and themes is important: the theme provides the rationale for linking knowledge and strategy and the method provides the process.

The purpose of the data presentation is to describe methods of establishing the link, the role of knowledge and the strategic implications. For example, Von Krogh, Ichijo, and Nonaka (2000) present a strategic framework for knowledge (Table 4.1, p 72). Their table shows how the strategic goals of survival or advancement relate to competitive advantage and the role of knowledge. Grant, (1991) advances a practical framework that includes analyzing the resource base and assessing capabilities as key steps in strategy analysis. Both of these writings address the themes in data analysis and additionally describe methods for integrating knowledge and strategy.

Preliminary analysis reveals several possible areas based in the literature for informing the key methods. The preliminary findings are as follows:

- Corporate view of knowledge relative to organizational goals (Von Krogh, Ichijo, and Nonaka, 2000).
- Assessing the resource base and capabilities to inform strategy (Grant, 1991).
- Knowledge and resources as a source of direction (Grant, 2001).

While these findings are very closely related to the themes, they additionally begin to describe methods of linking knowledge and strategy.

A full list of the most significant methods for linking knowledge and strategy are reported in Table 2, displaying what the key integration method is, the role knowledge plays, and the strategic benefits. The table is designed with the intent that this research can be quickly accessed and used by managers looking for ways to improve strategy development through the use of knowledge. Below is an outline of the table, before being populated:

Table 2: Key Integration Method Template

Key Integration Method	Role of Knowledge	Strategic Benefits
Key method 1		
Key method 2		
Key method 3		

Table 2 Key

- Key Integration Method – describes a way in which knowledge and strategy can be integrated.

- Role of Knowledge – describes where or how knowledge fits into the method. It answers the question, why is knowledge important to this method?
- Strategic Benefits – are the expected results relative to strategy of the particular method.

Chapter IV. Analysis of Data

The initial search criteria retrieved documents from both knowledge management and strategy disciplines. Each source is assessed for the underlying area in which it was written: Business Strategy or Knowledge Management. This assessment is added to the data analysis to examine the perspective of the collected sources. The designation is based first on the primary content and point of view of the authors and secondly on the focus of the publication in which it is written. The primary content of the source is used for those sources published in journals covering a variety of professional areas.

Initially seventy five sources are selected for potential use in this paper. This list is reduced to fifty one sources through a process of eliminating articles that do not address the central theme of this paper; knowledge and strategy. Out of fifty one selected sources, nineteen are from the strategy field and thirty two are from the knowledge management field.

The data analysis process consists of two stages. In the first stage the pre-defined coding terms and themes include: strategy, knowledge strategy, business strategy, linking knowledge management and business strategy, and knowledge as a strategic resource. A threshold of two or more concepts is set for the first stage of coding. Two concepts are chosen as the threshold because the initial elimination removed all sources that did not address at least two of the terms and themes, required to more likely deal with the interactive nature of the key concepts. Of the fifty one selected sources, forty three of them contain information about two or more of the stage one selected terms and themes. In

the second stage of analysis two additional themes are applied to the selected sources. The themes are: analyzing a firm's skills and capabilities to guide strategy; and gaining a competitive advantage by exploiting internal strengths. Of the forty three sources that were coded in stage one; twenty two of them also contain information on at least one of the themes in the second stage.

The set of twenty two sources are then coded further as a way to determine the significance of the occurrence of the terms and themes. Fifteen sources are found to contain five or more of the terms and themes. These sources become the primary basis for informing the results of this paper. The results of the stage 1 and stage 2 coding process are presented in Table 3 below.

Table 3: Stage 1 and 2 Coding Results

	Terms and Themes	Sources		
		Strategy	KM	Total
Stage 1 n=51	Strategy	19	24	43
	Knowledge strategy	0	29	29
	Business strategy	15	14	29
	Resource-based	8	3	11
	Theme 1: Linking knowledge management and business strategy	0	12	12
	Theme 2: Knowledge as a strategic resource	5	11	16
Stage 2 n=43	Theme 3: Analyzing a firm's skills and capabilities to guide strategy	8	5	13
	Theme 4: Gaining competitive advantage by exploiting internal strengths	10	9	19

Integrating Knowledge and Strategy

According to Zack (1999a), the strategic context of the organization helps to identify knowledge management initiatives that will support the purpose of the organization and strengthen its competitive advantage (Zack, 1999a). The resource-based approach suggests that organizations should develop their strategy based on the things they are able to do that cannot be imitated by other organizations. The resources and capabilities that are unique to an organization should be the driver of strategy, rather than the products and services derived from those capabilities (Zack, 1999a).

A knowledge-based SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis has been one method presented in the literature as a way of developing a link between knowledge and strategy (Zack, 1999a, Maier & Remus, 2002). While traditionally the SWOT analysis has an external focus, in this method the focus is mostly internal because it is about what the organization knows rather than on what the organization produces. As presented by Zack (1999a) the first step is to map resources and capabilities against strategic opportunities and threats to better understand their advantages and weaknesses. The next step is to use this map to leverage knowledge advantages and reduce potential areas where there is a knowledge weakness.

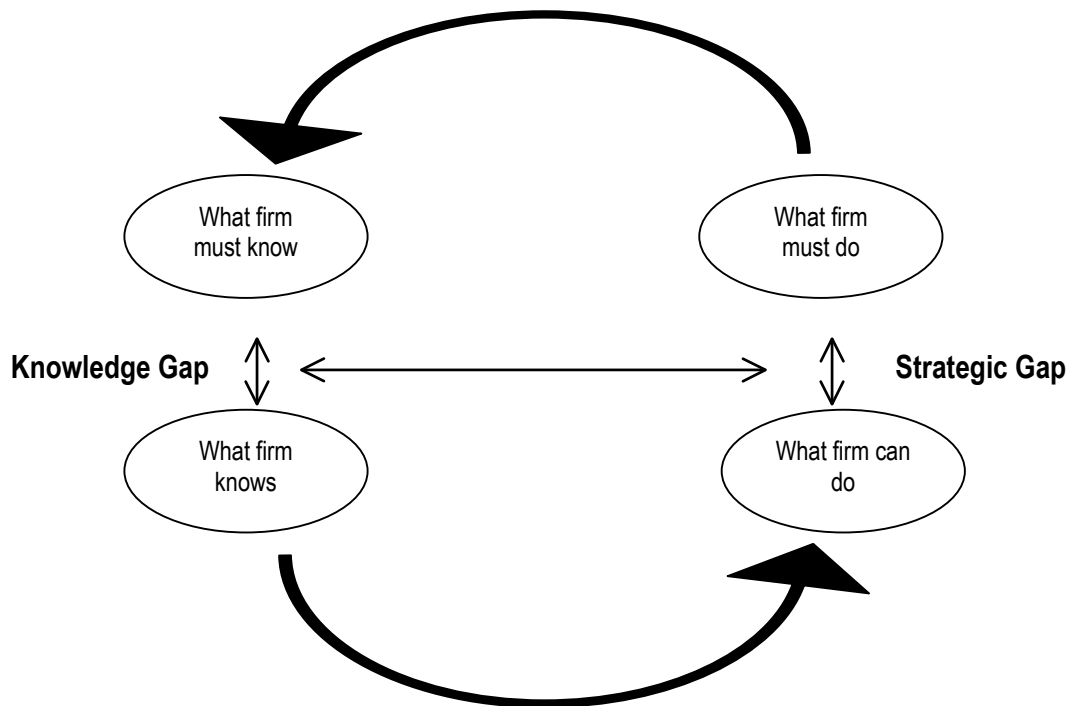
A second method, proposed by Zack (1999a) and by Maier and Remus (2002), is to perform a gap analysis. There are two gaps that are the focus of this analysis. The first, the strategic gap, is the separation between what an organization must do to compete and what it is actually doing. Underlying the

strategic gap is the knowledge gap. The knowledge gap is the separation between what an organization must know to execute its strategy and what it does know (Zack, 1999a). The key to success in this method is to link it with the output of the SWOT analysis and begin to close any gaps that are identified. The result of performing this process is that an organization can determine which knowledge should be developed or acquired and to establish a tight link between knowledge management and strategy execution (Zack, 1999a).

The gap analysis is presented in Figure 1 below.

The benefit to strategy of performing the SWOT and Gap analysis is that after the key resources and capabilities are identified they can be used to create an informed and unique strategy. This therefore creates a stronger, longer-lasting, strategic position because it is informed by the organization's unique resources which are not easily replicated by competitors.

Figure 1. Gap Analysis (Zack, 1999a).



An alternate approach to linking strategy and knowledge has been found in the resource-based theory literature. Grant (1991) has organized a framework consisting of a five-stage procedure for formulating a resource-based strategy. As shown below in Figure 2, knowledge has a significant impact on steps one and two of the Grant framework. These steps consist of 1) identifying and classifying resources and 2) identifying capabilities. A similar process is proposed by Maier and Remus (2002) and is shown in Figure 3. Maier and Remus (2002) take a combined resource and process view in linking knowledge and strategy. Their diagram (Figure 3) displays the relationship between knowledge management and competitive advantage. This diagram can be used to find areas where knowledge and strategy can be integrated.

Knowledge management initiatives focus on creating and leveraging knowledge to make the organization more successful (Rumizen, 2002). A KM initiative could clearly be linked to business strategy in the Grant diagram (see Figure 2) by providing the insight to these important strategy steps. Additionally step five, identifying resource gaps, could then inform the knowledge initiative of where improvements should be made. Step five represents a significant link in the chain because the organization learns and improves itself, which is the beginning of creating a learning organization (Senge, Ross, Smith, Roberts, & Kleiner, 1994).

Resources and capabilities are the foundation for strategy in Grant's diagram. They provide the general direction for strategy and are the primary source of profit (Grant, 1991). The heart of strategy formulation in this model is to create a strategy that makes the most effective use of the core resources and capabilities that are identified (Grant, 1991).

Figure 2. A Resource-Based Approach to Strategy Analysis: A Practical Framework (Grant, 1991, p 115).

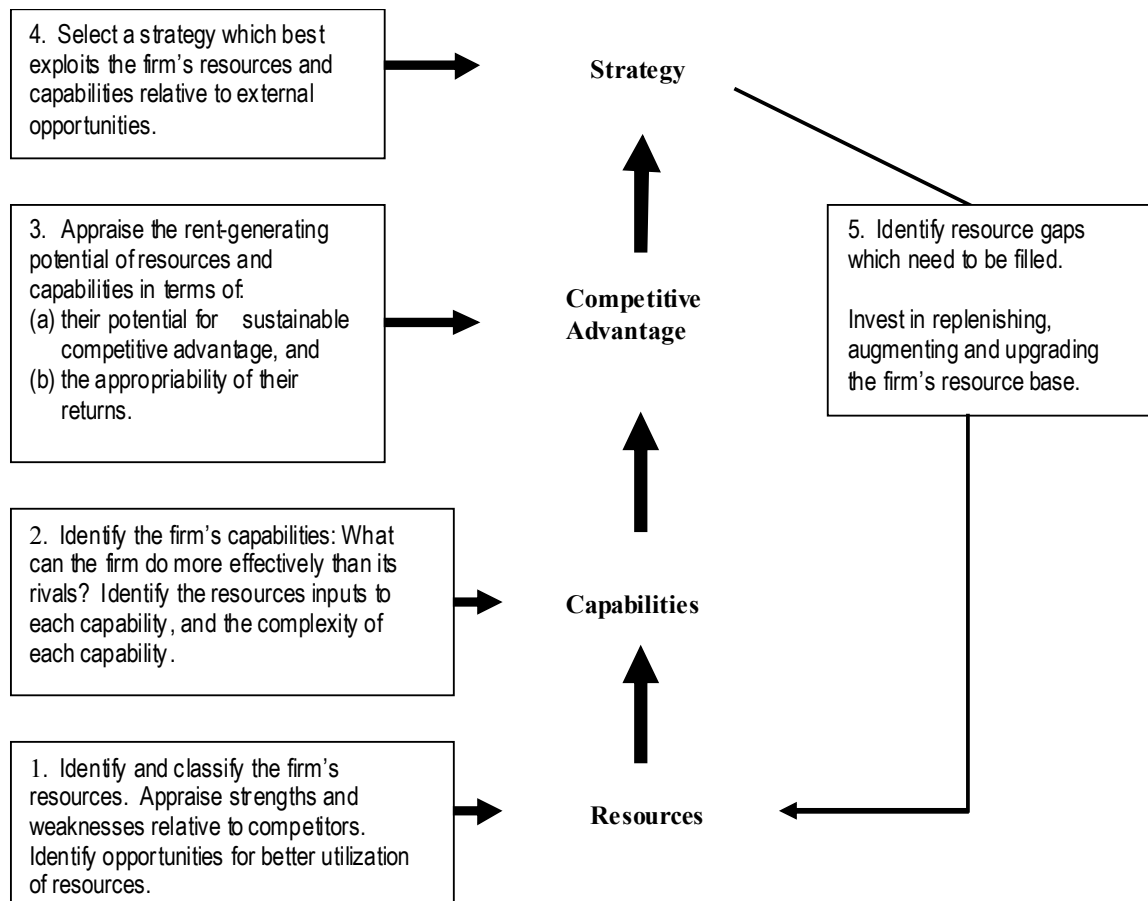
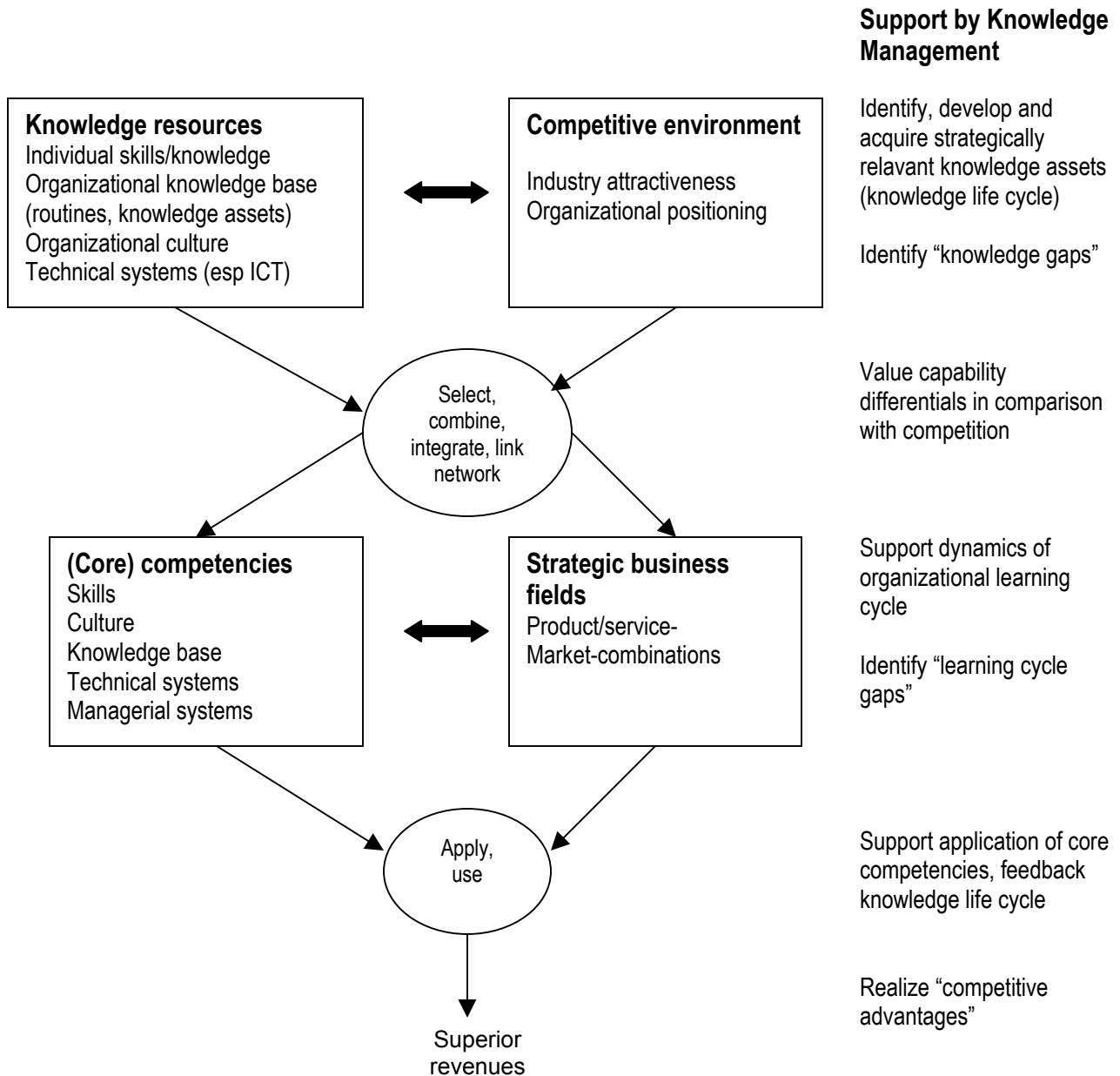


Figure 3. Relationship between knowledge management and competitive advantage (Maier & Remus, 2002, p 108).



The key methods of integrating knowledge and strategy found in the literature require taking an internal perspective on strategy development. The frameworks proposed by Zack (1999a), Grant (1991), and by Maier and Remus, (2002) as shown in Figures 2 and 3, and discussed above, contain four primary methods of integrating knowledge and strategy. Key methods are extrapolated, and presented in Table 4. Each key method represents an activity an organization can perform to integrate knowledge and strategy. Additionally, each activity involves creating a strategic role for knowledge in developing strategy and produces strategic benefits. Both aspects of the integration method (role of knowledge and strategic benefits) are summarized below in Table 4.

Table 4: Key Integration Method

Key Integration Method	Role of Knowledge	Strategic Benefits
Conduct Knowledge-Strategy Gap analysis	<ul style="list-style-type: none"> • Gives knowledge a strategic focus. • Helps identify where knowledge is lacking. 	Develops alignment between knowledge and strategy.
Perform knowledge SWOT	Identifies knowledge gaps in strengths and weaknesses.	Creates an informed and unique strategy, improving strategic positioning in the market.
Identify key capabilities	Explicitly describes capabilities and finds those that are most unique and valuable.	Generates a competitive advantage that is sustainable because the capabilities can't be copied.
Identify key resources	Supports finding and developing knowledge-related resources.	Finds those resources that provide the most value in creating advantages in the market.

Table 4 Key

- Key Integration Method – describes a way in which knowledge and strategy can be integrated.
- Role of Knowledge – describes where or how knowledge fits into the method. It answers the question, why is knowledge important to this method?
- Strategic Benefits – are the expected results relative to strategy of the particular method.

Chapter V. Conclusions

Business strategy provides a necessary link between thinking about something and actually getting it done (Von Krogh, Ichijo, & Nonaka, 2000). To keep a knowledge management initiative going strong long term it must be firmly linked to business strategy and the creation of value and competitive advantage (Maier & Remus, 2002). KM initiatives are destined to be less than a success if the effort is not closely tied to the business strategy (Von Krogh, Ichijo, & Nonaka, 2000).

The work of resource-based researchers (Barney, 2001, 1991, 1986, Grant, 1991) has been used to create a foundation for linking knowledge and strategy in ways practical to business managers (Zack, 1999a, 1999b, Maier & Remus, 2002). Knowledge management literature has clearly pointed out that the importance of knowledge to management is what can be done with it practically in the business environment (Von Krogh, Ichijo, and Nonaka, 2000).

There are many methods to link knowledge and strategy. Based on the research presented in this paper, the simplest way to start however may be to take a different approach to strategy than the norm – one that focuses on what the organization can do that is unique and valuable. The shift to a more internally-informed view of strategy, as presented in Table 4, inherently relies on knowledge to supply the insight to guide strategy. In this way, strategy itself becomes a guide and a strong place to anchor a knowledge management initiative.

Knowledge management processes should be viewed as enabling the most important elements of business strategy (Horwitch & Armacost, 2002). The Gap and SWOT methods proposed by Zack (1999a) and the resource-based method developed by Grant (1991) support the notion that knowledge can be viewed as being an important component to strategy, and a direct input to strategy development.

The significance of creating a strategy based on resources and capabilities is that it can create a lasting advantage in the market. Knowledge has been widely recognized as a source of a lasting competitive advantage (Davenport & Prusak, 2000; Von Krogh, Ichijo, & Nonaka, 2000; Nonaka, 1998). The work of Maier and Remus (2002) and their diagram presented in this paper (Figure 3) show the relationship between knowledge management and competitive advantage. Their diagram can be used as a tool to find ways knowledge management can create a competitive advantage, which is the purpose of strategy.

A practical framework to assess the role of knowledge as a strategic asset is essential (Von Krogh, Ichijo, & Nonaka, 2000, p 71). The results presented in the Analysis of Data section of this paper, and in particular Table 4, are a starting place. These results are intended to be used by an individual or a team working to set and manage the strategic direction of their business. Table 4 can also be used by those involved in knowledge management initiatives to tie the initiative to the organization's strategy.

While there is a significant amount of research yet to be done on how to improve the strategic role of knowledge in organizations of every type, through assessing the connections between knowledge management and business strategy, practical methods to improve the effectiveness of both can be found (Davenport & Prusak, 2000). Knowledge management initiatives would be well served to form a foundation in the strategic goals of the organization. Strategic development can in turn be improved by using what is known about the organization's most valuable resources and capabilities.

Bibliography

- Barney, J.B. (2001). Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view. *Journal of Management* 27(6). Retrieved January 22, 2004 from EBSCO (Business Source Premier).
- Barney, J.B. (1991, March). Firm resources and sustained competitive advantage. *Journal of Management* 17(1) pp 99-120. Retrieved January 26, 2004 from EBSCO (Business Source Premier).
- Barney, J.B. (1986, October). Strategic factor markets: expectations, luck, and business strategy. *Management Science* 32(10). Retrieved January 27, 2004 from EBSCO (Business Source Premier).
- Bowman, C., & Ambrosini, V. (2003, December). How the resource-based and the dynamic capability views of the firm inform corporate-level strategy. *British Journal of Management* 14(4), pp 289-303. Retrieved January 27, 2004 from EBSCO (Business Source Premier).
- Chase, C. (2002, May/June). Turning knowledge into action at Heineken USA. *KM Review*. Retrieved January 12, 2004 from EBSCO (Business Source Premier).
- Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Davenport, T., & Prusak, L. (2000). *Working knowledge, how organizations manage what they know*. Boston, MA: Harvard Business School Press.

- Day, J.D., & Wendler, J.C. (1998). Best practice and beyond: knowledge strategies. *The McKinsey Quarterly*. Retrieved January 13, 2004 from EBSCO (Business Source Premier).
- Fjeldstad, O.D., & Haanaes, K. (2001, Spring). Strategy tradeoffs in the knowledge and network economy. *Business Strategy Review* 12 (1) pp1-10. Retrieved January 19, 2003 from EBSCO (Business Source Premier).
- Grant, R.M. (1991, Spring). The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review* 33(3). Retrieved January 22, 2004 from EBSCO (Business Source Premier).
- Hahn, J., & Subramani, M.R. (2000). A framework of knowledge management systems: issues and challenges for theory and practice. University of Minnesota Carlson School of Management. Retrieved February 27, 2002, from MAS Ultra – School Edition.
- Horwitch, M. & Armacost, R. (2002, May/June). Helping knowledge management be all it can be. *Journal of Business Strategy*. Retrieved January 4, 2004 from EBSCO (Business Source Premier).
- KPMG Knowledge Advisory Services. (2003, January). *Insights from KPMG's European knowledge management survey 2002/2003*. Retrieved January 12, 2004 from www.knowledgeboard.com
- Leedy, P.D., & Ormrod, J.E. (2001). *Practical Research Planning and Design. Seventh edition*. Upper Saddle River, New Jersey: Merrill Prentice-Hall.

- Maier, R. & Remus, U. (2002, April/June). Defining process-oriented knowledge management strategies. *Knowledge and Process Management* 9(2) pp 103-118. Retrieved January 19, 2004 from University of Oregon libraries catalog at <http://janus.uoregon.edu>
- Mohammed, R., Jaworski, B. J., Fisher, R. J., & Cahill, A. M. (2002). Corporate and business-unit strategy. McGraw-Hill Primis Online, printed for University of Oregon marketing department.
- Nonaka, I. (1998). The knowledge-creating company. In Harvard Business Review, (Ed.), *Harvard Business Review on Knowledge Management*. Boston, MA: Harvard Business School Publishing.
- Odom, C. J. & Starns, J. (2003, July/August). How do you measure success? KM World Magazine 12(7). Retrieved January 10, 2004 from www.KMWorld.com magazine archives.
- Osterloh, M., & Frey, B.S. (2000, September-October). Motivation, knowledge transfer, and organizational forms. *Organizational Science*, 11, 5, 538-550. Retrieved February 20, 2002, from MAS Ultra – School Edition.
- Palmquist, M. (ed.). (2001). Content analysis. Retrieved January 29, 2004 from <http://writing.colostate.edu/references/research/content>
- Porter, M. E. (1996, November-December). What is strategy? *Harvard Business Review* 74 (6). Retrieved January 20, 2004 from EBSCO (Business Source Premier).
- Rumizen, M.C. (2002). *The Complete Idiot's Guide to Knowledge Management*. Madison, WI: John A. Woods, CWL Publishing Enterprises.

- Senge, P., Ross, R., Smith, B., Roberts, C., & Kleiner, A. (1994). *The Fifth Discipline Fieldbook*. New York, New York: Doubleday.
- Saloner, G., Shepard, A., & Podolny, J. (2001). *Strategic Management*. New York: John Wiley & Sons.
- Von Krogh, G., Ichijo, K., & Nonaka, I. (2000). *Enabling Knowledge Creation, How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation*. New York, NY: Oxford University Press.
- Zack, M. H. (1999a, Spring). Developing a knowledge strategy. *California Management Review* 41(3). Retrieved January 13, 2004 from EBSCO (Business Source Premier).
- Zack, M.H. (Ed.). (1999b). *Knowledge and Strategy*. Woburn, MA: Butterworth-Heinemann.