NOTE TO USERS

Organizational Strategy and IT Outsourcing:

A Perspective of

Miles and Snow's Strategic Typologies

Yi Sun

A Thesis
In
The John Molson School of Business

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Administration at
Concordia University
Montreal, Quebec, Canada

August 2005

Your file Votre référence
ISBN: 0-494-10336-1
Our file Notre référence
ISBN: 0-494-10336-1

Abstract

Organizational Strategy and IT Outsourcing:

A Perspective of Miles and Snow's Strategic Typologies

Yi Sun

The current study represents an exploratory research in the area of strategic alignment of information technology. It attempts to explore whether there is a link between an organization's strategic type and its level of information technology (IT) outsourcing. More specifically, it investigates how strategic types in Miles and Snow's typology can be related to the level of IT outsourcing activities deployed by an organization. It also takes a qualitative approach in the measurement of strategy. Secondary data such as annual reports, rather than mailed questionnaires, are used to analyze the strategy. The results indicate that in terms of Miles and Snow's strategic typology, prospectors are the highest user of IT outsourcing. Defenders are more cautious to outsource their IT. Analyzers, having both characteristics of prospectors and defenders, are between the two groups in IT outsourcing activities.

Acknowledgements

My special thanks to my supervisor, Dr. Anne-Marie Croteau, for her support and help during the writing of this thesis. Many ideas in this paper have been inspired in our weekly discussions. I also thank my committee members, Dr. Benoit Aubert for his understanding and his support in the data analysis, and Dr. Bouchaib Bahli for his valuable input. I also appreciate my family to give me their full support during the years of my studies. Finally, this research has been sponsored by the Social Sciences and Humanities Research Council of Canada (SSHRC).

TABLE OF CONTENTS

LIST OF TABLES

LIST OF EXHIBITS

LIST OF APPENDIXES

1. Introduction

The information technology (IT) outsourcing phenomenon has been receiving more and more attention during the recent years. As IT plays an increasingly important role in the business environment, it gains a more prominent strategic role within operations. Studies performed by International Data Corporation (1999) estimated that the global revenues for IT outsourcing have been growing at a rapid rate. One key organizational element that distinguishes one organization from another is its strategy. Aligning IT with an organization's strategy has been proved to be both required and beneficial (McFarlan, 1984; Porter and Millar, 1985; Chan et al., 1997). A significant theoretical contribution to the understanding of strategy is Miles and Snow's (1978) typology. While this approach has been used in the past to study IT-strategy alignment (Tan, 1997; Sabherwal and Chan, 2001; Croteau and Bergeron, 2001), little research has been done to investigate the relationship between organizational strategy and IT outsourcing. Methodologically, multiple-item surveys were mainly used in the collection of data to measure strategy. Qualitative method was seldom found. This study attempts to explore whether there is a link between an organization's strategic type and its level of information technology (IT) outsourcing. More specifically, it investigates how strategic types in Miles and Snow's typology can be related to the level of IT outsourcing activities deployed by an organization. It also attempts to take a qualitative approach in the measurement of strategy. Secondary data such as annual reports, rather than mailed questionnaires, are used to analyze the strategy. Selected companies are extracted from a previous research where some outsourcing activities were studied.

2. Literature Review

The objective of this review is to examine the previous studies on strategic alignment of IT, organizational strategy, IT outsourcing, and strategic alignment of IT outsourcing using Miles and Snow's (1978) strategic typology. First theoretical and empirical studies in strategic alignment of IT are discussed. We then review previous research on organizational strategy, with a special focus on the development of Miles and Snow's typology. In the next section, theoretical foundations and empirical research in IT outsourcing are examined. We then identify studies that using Miles and Snow's typology to illustrate alignment of strategy and IT outsourcing. Finally, a summary and conclusion of the literature are presented.

2.1 Strategic Alignment of IT

This chapter presents theoretical foundations in the field of strategic alignment of IT. The focus will be on strategy in the IS literature. Previously used approaches and constructs will be identified. The review suggests that despite the attempts of researchers to validate the theoretical concepts, there is still a significant gap between theoretical foundations and empirical research in this strand of study.

2.1.1 Henderson and Venkatraman (1993)

One of the most important contributions to our understanding of strategic alignment of strategy and IT is presented by Henderson and Venkatraman (1993). The authors suggested that alignment between business strategy and IT strategy influences the ability to realize value from IT investments. They proposed the Strategic Alignment Model based on two building blocks: strategic fit[1] and functional integration. Strategic fit addresses the need to align external and internal domains (strategy and infrastructure). Functional integration refers to the need to align business and IT domains. The logic of strategic alignment lies in consistency in the choices in both business and technology areas.

The study recommends four types of cross-domain relationships. Business strategy serves in the role of driver in two of them. The strategic execution perspective suggests that articulated business strategy is used to design organization and IT infrastructure. The technology transformation perspective implies that business strategy affects IT infrastructure through IT strategy.

The other two perspectives explore how IT strategy plays the role of enabler. The competitive potential perspective suggests that emerging IT capabilities could impact business strategy and in turn, organizational infrastructure. The service level perspective demonstrates that IT strategy determines IT infrastructure, which intern will have an

[1] For further explanation of the concept of fit, please see Appendix 1.

impact on organizational infrastructure.

The authors pointed out that the Strategic Alignment Model differs from traditional linkage view in four different ways. The proposed model calls for recognition of the external IT marketplace, puts selecting appropriate alignment perspective as management objective, highlights the diversity of roles carries out by both line and IT executives, and finally, extend the criteria for performance assessment to a larger set involving multiple goals.

2.1.2 Other Theoretical Studies

McFarlan (1984) is one of the earliest theoretical studies for analyzing strategic impact of IT. The author suggested that IT may have strategic importance when it is used to: 1. change the basis of competition by allowing cost, product differentiation, or market specialization advantages, 2. generate new products, allowing existing products to be tailored to specific customer needs: and 3. improve product quality and distribution. Managers must take into account the intangible strategic benefits of information technology when justifying their costs.

Porter and Millar (1985) provided a useful framework for analyzing the strategic significance of the IT. The authors showed how and why information technology has changed the way companies operate internally, as well as the way they interact with suppliers, customers, and rivals. The authors found that IT changes the industry structure

and therefore alters the rules of competition, gives companies new ways to outperform their rivals, and spawns whole new businesses.

2.1.3 Empirical Studies

We find in the literature that strategic alignment of IT was tested previously by several studies. Chan et al. (1997) suggested that IS strategic alignment affects IS effectiveness more than does strategic orientation. Moreover, business strategic orientation, IS strategic alignment, and IS effectiveness were found to have significantly positive impacts on business performance. Bergeron and Raymond (1995) concluded that strategic orientation has a positive impact on business performance. More strategically oriented organizations tend to manage their IT more strategically. However, it was not confirmed that strategic IT management has a positive impact on business performance. Raymond et al. (1995) found that IT sophistication is positively related with structural sophistication. IT usage has a positive impact on business performance. The alignment between IT and organizational structure is positively linked with organizational performance, in which the relationship is stronger in better-performing organizations. And finally, Reich and Benbasat (2000) suggested that four factors contribute positively to short-term alignment, including IT implementation success, communication between business and IT executives, and connections between business and IT planning processes. The authors also found that in order to align IT and business, it is crucial that business and IT executives have a good understanding of issues related to each other's areas. In summary, the findings of these studies validate the proposition that alignment of IT and strategy

positively contribute to organizational performance.

2.2 Organizational Strategy

An important stream of IS and managerial research has been devoted to organizational strategy. Miles and Snow (1978) defined strategy as "a pattern or stream of major and minor decisions about an organization's possible future domains". Teng et al. (1995) defined it as a set of "underlying values and propensities that consistently guide an organization's actions and responses". In Croteau and Bergeron's (2001) work, business strategy refers to the "outcome of decisions made to guide an organization with respect to the environment, structure, and processes that influence its organizational performance".

Typically, three different levels of strategy are recognized within organizations. Corporate strategy is concerned with the overall purpose and scope of the firm. Business unit strategy is concerned primarily with how to compete within individual markets. Operational strategy deals with how to implement the business unit strategy with regards to resources, processes, and people.

In information systems (IS) and managerial literature, strategy can be presented in different ways. Hambrick (1980) discussed various approaches of operationalize the concept of business-level strategy. Textual description, measurement of parts of strategy, multivariate measurement, and typologies are the four main approaches presented in the study.

The textual description approach was originated in the form of case studies. Strategy is not measured but rather described in a contextual manner. This approach is particularly useful in theory building.

The measurement of parts of strategy has a uni-variate approach. It focuses on a single key variable or variable in a functional area. Although this approach offers a relatively reliable measurement of the key variables, it does not capture the breadth of the decision-making processes in business-level strategy. This approach is most helpful in understanding limited areas of strategy.

The multivariate approach, on the other hand, takes a more comprehensive view of the strategy construct by measuring several variables. It has the advantages of adding dimensions to the construct and making use of multivariate statistics tools. However, this approach runs the risk of missing the internal logic among the variables. Moreover, although it uses a larger database, the multivariate approach could not guarantee a better generalizability. This approach is believed to be most useful when strategy is treated as a predictor in research designs.

The typology approach distinguishes itself by its degree of comprehensiveness and integrative pattern. It depicts business-level strategy as a set of relationships that exist in a temporary state of balance. It described situations seem to form a number of gestalts, a German word referring to structures, configurations, or patterns so integrated with

properties not derivable by summation of its parts. The typology approach carries the merits of simplicity while it contributes to understanding strategy systematically at the same time. Several strategic typologies were developed and frequently used in the management and IS literature. Two among the most popular include Porter's (1980) generic strategies, and strategic typology developed by Miles and Snow (1978), which is the major concern in this study.

2.2.1 Miles and Snow's Strategy Typology

Miles and Snow (1978) has identified four main patterns of adaptation behaviors, a strategy typology consisting of four business strategic types defined as defender, prospector, analyzer, and reactor. The first three types are believed to lie on one continuum. The last one, reactor, is considered out of the continuum.

Defenders are organizations that have a narrow market and focus their primary attention to improving the efficiency of existing operations.

Prospectors, on the other end of the continuum, are characterized by continually searching for new market opportunities and thus stress innovation and changes.

Analyzers are operating in two types of adaptive behaviors, one relatively stable sharing the characteristics of the defenders, and the other showing properties of frequent changes of the prospectors.

Finally, **Reactors** are organizations in which top management frequently perceives uncertainties and changes but is unable to adjust to them effectively. They lack a consistent strategy-structure relationship and thus neither could maintain existing markets nor could take risks to explore new ones.

In this work, the authors also illustrated the process by which organizations continually adjust to their environments. Assuming the relationships and interdependence among an organization's strategy, structure, and process, the authors developed the concept "adaptive cycle" to explain how organizations enact their environments. The cycle demonstrates how the choice of a given strategy (**the entrepreneurial problem**) demands a particular portfolio of technologies and capabilities (**the engineering problem**). And those choices, in turn, affect of the design of organizational structures and processes (**the administrative problem**). Finally, the choice of structure and process would influence and constrain future strategic decisions. The adaptive cycle, its main phases, and their contents are shown in Exhibit 1. A comparison of the four business strategic types is shown in Table 1.

Exhibit 1. Miles and Snow's Adaptive Cycle

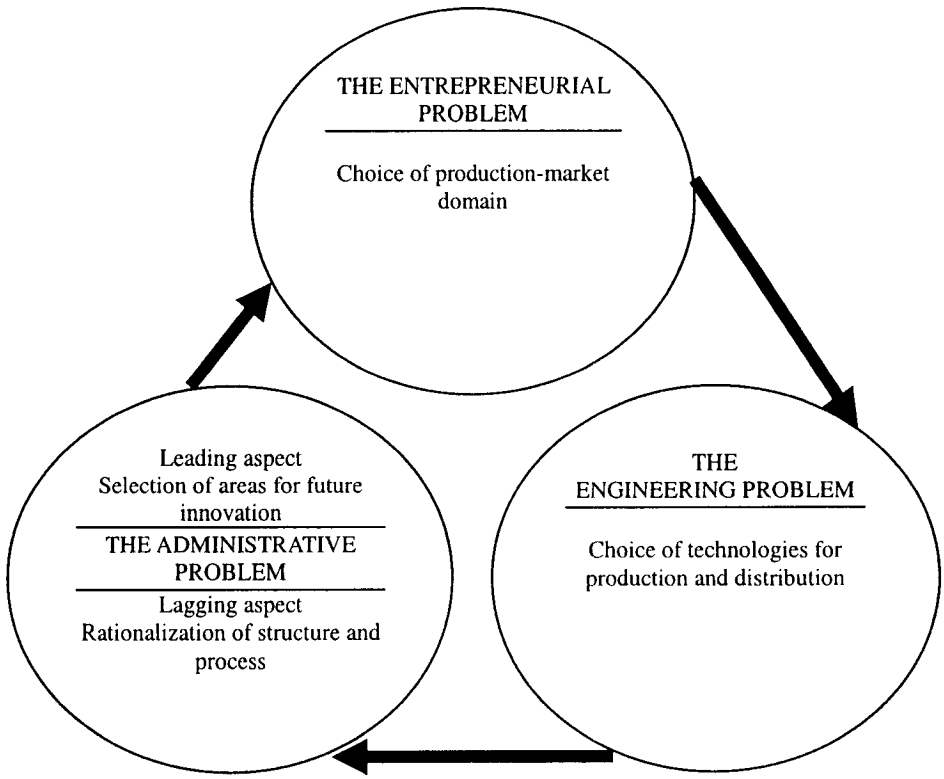


Table 1. A Comparison of Miles and Snow's Strategic Types, Adapted from Miles and Snow (1978)

		Defender	**Prospector**	**Analyzer**	**Reactor**
Entrepreneurial Problem	Product -market Domain	Narrowness and stability	Broadness and development	Mixed	No strategy. Strategy misaligned with structure. Strategy and structure ousted by change.
	Way of Competition	Aggressively maintain domain	Monitor a wide range of environmental conditions	Mixed	
	Environment Scan	Ignore developments outside domain	Create changes	Frequently, limited to marketing, some R&D	
	Way of Growth	Penetrate deeper	Location of new market	Both	
	Rate of Growth	Cautiously and incrementally	In spurts	Steady, mixed	
Engineering Problem	Technology	A single core	Multiple	Dual cores	
	Technology Buffer	Vertical Integration	People	Mixed	
	New Technology	Update to maintain efficiency	Prototype	Mixed	
Administrative Problem	Dominant Coalition	Finance, Production	Marketing, R&D	Marketing, R&D, Production	
	Tenure	Lengthy, promoted from within (production, finance, engineering)	Short, from outside	Mixed	
	Planning	Intensive, problem solving	Extensive, problem finding	Both	

		Defender	**Prospector**	**Analyzer**	**Reactor**
	Planning Sequence	Plan-Act-Evaluate	Evaluate-Act-Plan	Both	
	Structure	Functional	Product	Matrix	
	Division of Labor	Extensive	Less Extensive	Moderate	
	Formalization	High	Low	Moderate	
	Control System	Centralized, long-looped	Decentralized, short-looped	Moderate	
	Coordination	Standardization	Complex and Expensive	Extremely Complex	
	Conflict Resolution	Hierarchical	Coordinators	Both	
	Performance Appraisal	Against efficiency	Against competitors	Both	

After their classic work in 1979, Miles and Snow did not stop their journey investigating the strategic typologies. Their subsequent works introduced the concept of "fit" and linked the strategy typologies with organizational forms (Miles and Snow 1984). They predicted a new organizational form, the networks, in the ever-changing environment as a result of mass application of outsourcing (Snow et al., 1992). Furthermore, they re-linked the network forms with their original strategic typologies (Miles and Snow 1992). Because of this interesting evolution that is related to our work investigating the link between strategy and IT outsourcing, further explanation of Miles and Snow's work are provided in the upcoming sections.

2.2.2 Evolution of Miles and Snow's Strategy Typology

2.2.2.1 Miles and Snow (1984)

In this article, Miles and Snow (1984) further investigated the consistency of the adaptive cycles and its effectiveness related to business success. A new concept, "fit", is developed to explain the dynamics of organizational adaptation. Fit is believed to represent both a process and a state. Fit involves not only an organization's effort to align its strategy, structure, and processes, but also its understanding and expression of the alignment. Greater fit leads to clarity of the business objective and simplicity of the alignment, therefore reducing costs to facilitate to adaptation process.

The typology of business strategic types is linked to various degree of fit. Misfit, in which organizations show inconsistency in external and internal alignment among strategy, structure, and process, is represented by Reactors. These organizations are destined to failure. The other three strategic types, namely Defender, Prospector, and Analyzer, make organizations prosper. Whichever of the three an organization chooses, minimal fit is required for business survival, and tight fit leads the organization to excellence.

Miles and Snow (1984) also believed that environmental changes would result in new organizational forms, like functional form in Defenders, divisional form in Prospectors, and matrix form in Analyzers. They suggested that the discovery and articulation of the new form, called "early fit", could lead to "sustained excellence over considerable periods of time" and thus make the organization a place in "Hall of Fame". Some of the recent environmental changes include globalization, shorter product life cycles, and rapid technological innovations. In adapting to these changes, organizations subcontract their work to outside organizations, becoming vertically disaggregated. Internal plan and control are replaced by market mechanisms. This mechanism is called "dynamic network", which is supposed to become a new organizational form, realized by broad-access computerized information systems.

2.2.2.2 Miles and Snow (1986)

In this article, Miles and Snow (1986) further clarified the network concept. The new organizational form, dynamic network, is characterized by vertical desegregation, brokers, market mechanisms, and full-disclosure information systems. It is interesting to note that at this early time the authors accurately predicted the role information systems would play in organizations. Systems with vast amount of information and the broad access to these systems by all network partners are believed to be a fundamental success factor in future competition. Miles and Snow (1986) suggested that the network form allows the utilization of the best features associated with each of the strategic types in their organizational strategy. In a network, downstream firms could concentrate on exploring and adapting market trends and opportunities (the Prospector skill), while upstream firms could focus on efficient production of new product designs (the Defender skill).

Miles and Snow also found that not only all the business strategic types could exist in one industry, but also the combination of the strategic types indicates the health of the industry. Within an industry, Prospectors perform the designer role. Analyzers perform the marketing/distribution and information broker role. And Defenders perform the producer role. In order to its long-term viability, the whole industry must balance the needs of innovation and efficiency, therefore requiring a certain mix of organizations in each of the business strategic types.

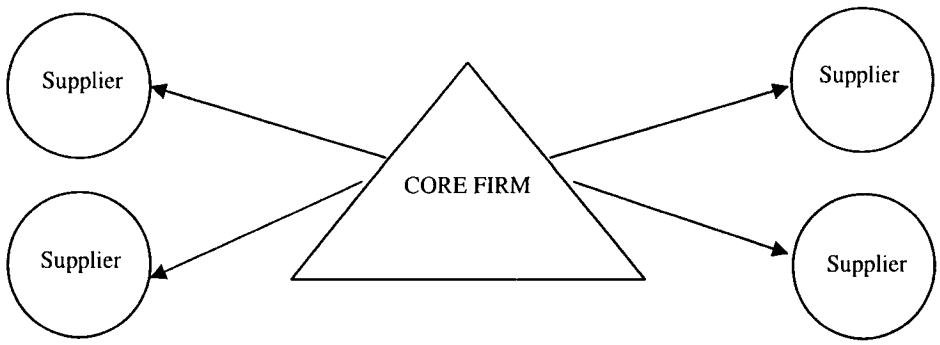
2.2.2.3 Snow et al. (1992)

In this article, the authors first revisited and further explained the context of the emerging

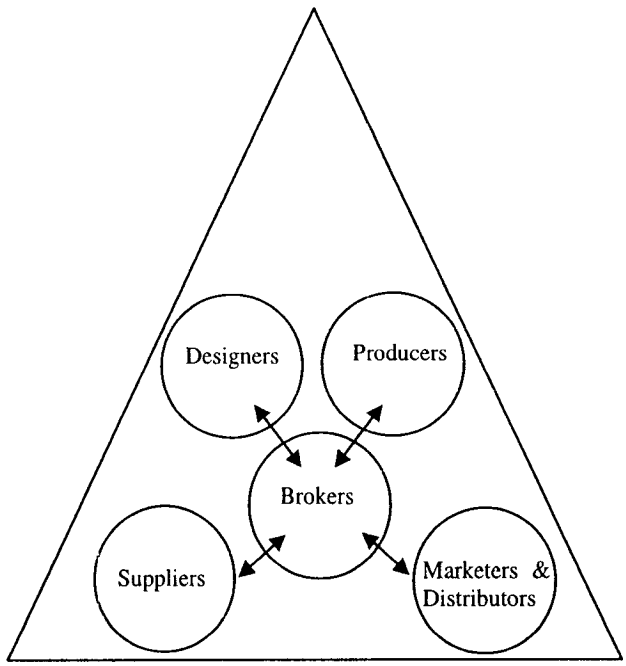
network organizational form. Globalization, technological change, deregulation, changing work force demographics, and advances in communications and computer technologies all contribute to the business environment of the 21st century. Snow et al. (1992) alleged that organizations who want to be strong competitors in this competition environment are urged to search globally for opportunities and resources, perform only those functions for which the company has expertise, and outsource those capabilities that can be performed quicker, more effectively, and at a lower cost to others.

Snow et al. (1992) then proposed their new typology of network organizations in the current environment. **Internal networks** are big multinational conglomerates in which internal units operate with market price rather than artificial transfer price. Headquarters in internal networks perform the role of holding companies or brokers. **Stable networks** are individual firms bonded to a single value chain around a core company in a long-term stable relationship. Assets are owned by several firms but dedicated to a single business. Each firm takes care of part of the value chain for which it has the most expertise. **Dynamic networks** are individual firms pursuing multiple value chains in which a lead firm identifies and assembles assets of other firms for a single product or project, and then decouples to link new firms to pursue a new value chain for the next business venture. The three network types are illustrated in Exhibit 2.

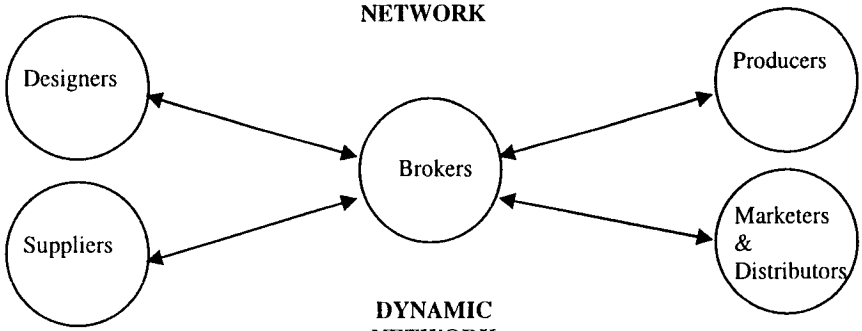
Exhibit 2. Miles and Snow's Network Types (Snow et al., 1992, pg. 12),



STABLE NETWORK



INTERNAL NETWORK



DYNAMIC NETWORK

In this article, Snow et al. (1992) first formally discussed the relationships between organizational types and outsourcing. The recent changes in the environment made outsourcing a prerequisite for business to compete effectively. Organizations have to focus on their core skills and outsource non-core activities to others. The authors found that stable networks rely to "partial outsourcing" and dynamic networks "outsource extensively". Internal networks were believed to outsource in a lesser extent than stable networks. However, outsourcing levels of internal networks is built on the viewpoint of the parent company as a holding company. Although internal units compete with outsiders on market price, they are still considered as "insiders". If seen from the view of the parent company as a broker, outsourcing levels in internal networks should be higher than those in stable networks, since internal networks operates in multiple business while stable networks normally concentrate on one single value chain.

2.2.2.4 Miles and Snow (1992)

This study attempted to look for causes of failure in network organizations. It is in this research that Miles and Snow (1992) explored the inherent operating logic of the network organizations and re-linked them with the original strategy typology of business strategic types. The network organizational forms are nothing but "variations sought to incorporate the specialized efficiency of the divisional form (the Defender), the autonomous operating effectiveness of the divisional form (the Prospector), and the asset-transferring capabilities of the matrix organization (the Analyzer).

The authors then suggested that the most intriguing failures in the network organizations arise either from overly extensions of the organizational form beyond its limits, or from modifications of the form that violate its operating logic. A detailed comparison of the operating logic and the main failures of the network form and their relationship with the original strategy typology is shown in Table 2.

2.2.2.5 Summary of Miles and Snow's Typology and Its Development

Miles and Snow's typology represents a major contribution in the typology approach of operationalizing strategy. Defender, prospector, analyzer, and reactor are used to capture organizational adaptation behaviors in the environments. Defender and prospector sit on two ends of a continuum, one focusing on efficiency and the other on innovation. Analyzer represents a mixed position between defender and prospector. Reactor, on the other hand, does not belong to the continuum due to lack of strategy. In Miles and Snow's typology, special interests are put on the relationship between strategic type and organizational form: defender with functional, prospector with divisional, and analyzer with matrix. Although the network was developed recently, it is in fact just a modification of the previous forms and still builds on similar operational logic. Another important implication of Miles and Snow's typology lies in their analysis of the combination of strategic types in one industry. Not only could all strategic types exist in one industry, but also a certain mix of strategic types represents the health of a certain industry.

Table 2. A Comparison of Network Forms and Their Original Strategic types

	Operating Logic	Extension Failure	Modification Failure
Stable Network	A large core firm creates market-based linkages to a limited set of upstream and/or downstream partners	Over utilization of a given supplier or distributor leading to unhealthy dependence on core firm	Product or service diversification that overloads central planning mechanisms
Defender	Efficient production of standardized goods and services	Vertical integration beyond capacity to keep specialized assets fully loaded and/or to evaluate contributions	High expectations for cooperation can limit the creativity of partners
Dynamic Network	Independent business elements along the value chain form temporary alliances from among a large pool of potential partners	Expertise may become too narrow and role I value chain if assumed by another firm	Excessive mechanisms to prevent partners' opportunism or exclusive relationships with a limited number of upstream or downstream partners
Prospector	Related diversification by product or region	Diversification outside area of technical and evaluative expertise	Corporate interventions to force coordination or obtain efficiencies across divisions

Internal Network	Commonly owned business elements allocate resources along the value chain using market mechanisms	Extending asset ownership beyond the capacity of the internal market and performance appraisal mechanisms	Corporate executives use "commands" instead of influence or incentives to intervene in local operations
Analyzer	Shared assets between standardized products and prototype contracts Shared assets between worldwide product divisions and country-based marketing division.	Expanding number of temporary contracts beyond ability of allocation mechanisms Search for global synergy limits local adaptability	Modifications that distort the dual focus

2.2.3 Measurement of Miles and Snow's Typology and the Adaptive Cycle

2.2.3.1 Unit of Analysis

Miles and Snow's strategy typology starts from single industries, ending up becoming such a powerful tool to compare strategy across industries. In this sense, their typology could be used at the business unit level, as they showed in four single industry analyses. This unit of analysis was widely used in the previous literature due to the relative simplicity of single industry analysis.

However, as Miles and Snow develop their typology over time, they began to use their typology across industries. Organizations were observed to operate in several domains at the same time (Snow et al. 1992), while at the same time the strategy typology still holds to explain the strategic choices among organizations. In this regard, Miles and Snow's typology could also be used at the corporate level. The concept of domain selection well captures the allocation of resources between different business units, mergers and acquisitions, partnerships and alliances. It is easy to argue that prospectors and analyzers are explained at the corporate level since they are diversifying their resources into different domains or markets. Defenders, on the other hand, stay in a narrow and stable domain. It seems that defenders fall into the business unit level. However, it could be explained that they, at the corporate level, choose to put all their resources into one basket. Therefore, corporate and

business unit levels merges in the case of defenders.

In a review of the strategy literature, Bowman and Helfat (2001) identified several factors in the corporate level strategy. All could be found for their counterparts in Miles and Snow's typology. **Scope of the firm** includes selection of industries in which to operate, which echoes the concept of product-market domain in Miles and Snow's typology. **Core competence** is an important element to corporate success spanning businesses with the corporate, while the domain maintenance construct deals with how organizations compete on the corporate level, through technological improvement, or production innovation, or both. **Organizational structure** was always mentioned in Miles and Snow's work, with regard to the fact that prospectors prefer market-oriented structure while defenders a product-oriented one. **Organizational climate** deals with the corporate culture, which is consistent related to organizational structure. **Planning and control** include the use of strategic versus financial control, which perfectly fits the prospector's pattern stressing effectiveness versus the defender's efficiency-oriented and calculating mechanism. Finally, **corporate management** refers to the corporate executives' managerial ability and its manifestation in decision-making and goal setting for the company as a whole. In Miles and Snow's typology, the concept of dominant coalition illustrates how backgrounds and tenure of executives would affect their perception of the environment, overall objective of the organization, and the subsequent decision-making. In summary, Miles and Snow's typology fits well at the corporate level, and is indeed dealing with the most important factors at that level. Therefore, it could be used for analysis in both corporate and business unit level.

Different instruments have been used in measuring Miles and Snow's strategy typology. Multiple-scale item measurement is frequently used. Two of the most popular instruments are Segev (1987) and Conant et al. (1990)

2.2.3.2 Segev (1987)

This instrument was designed in order to test the connection between two important typologies: Miles & Snow's (1978) typology and Mintzberg's (1973) concept of strategy-making modes. A business game was used to examine the relationship among a sample of students. A set of items is dedicated to each strategic type (7-point Likert scales):

- 9-item scale for the Defender archetype
- 7-item scale for the Prospector archetype
- 6-item scale for the Analyzer archetype
- 3-item scale for the reactor archetype

For each item, an average of the individual resulted was computed in order to obtain the firm's score. It was found that the analyzer strategic type is a hybrid defender-prospector.

2.2.3.3 Conant et al. (1990)

This instrument is based on a combined multiple-item scale/paragraph approach whose aim is to take profit of the advantages of both methods. This instrument is the output of an article

published in Strategic Management Journal. This article was fully dedicated to the design of this instrument applied in the marketing competencies context. It includes a complete review of prior conceptualization and operationalization of Miles & Snow's typology. The instrument was well designed and validity and reliability were tested rigorously.

Conant et al. (1990) posit that the theoretical foundations of the Miles & Snow Typology can be traced to Child's (1972) classic conceptualization of strategic choice. Based upon the assumption made by Miles & Snow that organizations develop relatively enduring patterns of strategic behavior that actively co-align the organization with its environment, the authors consider the "adaptive cycle" characterizing this process as involving three problems and solution sets:

- An entrepreneurial problem set centering on the definition of an organization's product market domain.
- An engineering problem set focusing on the choice of technologies and processes to be used for production and distribution
- An administrative problem set involving the selection, rationalization, and development of organizational structure and policy processes.

The analysis of the four Miles & Snow strategic types revealed the existence of 11 distinctive strategic dimensions along the three latter dimensions. As a result, the instrument is made of 11 scale items. Each item focuses on a particular issue related to the strategic orientation, four paragraph-like answers are then proposed (one four each strategic type):

- Entrepreneurial-product market domain
- Entrepreneurial-success posture
- Entrepreneurial-surveillance
- Entrepreneurial-growth
- Engineering-technological goal
- Engineering-technological breadth
- Engineering-technological buffers
- Administrative-dominant coalition
- Administrative-planning
- Administrative-structure
- Administrative-control

The nominal scale designed by Conant et al. requires the use of a "majority-rule" decision structure. In the case of ties, two separate decision rules were employed. Specifically, ties between defender, prospector, and/or analyzer response options resulted in the organization being classified as an analyzer, while any ties involving reactor response options resulted in the organization being categorized as a reactor. Both decision rules are aligned with Miles & Snow's original conceptualization of the four archetypes.

2.2.3.4 Empirical Studies of the Adaptive Cycle Dimensions

Another stream of research concentrated on testing Miles and Snow's typology concerning

the entrepreneurial, engineering, and administrative dimensions of the adaptive cycle. We here provide an examination of these studies.

Hambrick (1983) tested hypotheses aimed at exploring the differences in the functional attributes of prospectors and defenders. Two entrepreneurial elements were found differing significantly between prospectors and defenders: product R&D and marketing expenses. The author explained this difference by arguing that prospectors devote more of their resources on developing new products and creating new markets. Moreover, defenders tend to offer better services than prospectors do. But it was not supported that they also offer better quality products. This is because quality coming from defender is offset by quality from new product variations. For the engineering domains, defenders were found more vertically integrated since they are more likely to handle their own selling, warehousing, and distribution due to their stable domains.

Conant et al. (1987) was conducted to identify the alternative styles of strategic management that health maintenance organizations (HMO) employ and to examine the relationship between the strategic management style of HMOs and marketing strategies. A survey instrument was sent to 418 US HMOs and 150 usable replies were received. Strategic management style was operationalized based on Miles and Snow's (1978) typology of organizational strategy. Defender, analyzer, and reactor HMO managers ranked pricing effort as the first priority in their marketing strategy, and prospector managers placed distribution and delivery effort as the number one criterion.

Chaganti and Sambharya (1987) found support for Miles and Snow's proposition that prospectors tend to recruit top managers from outside while defenders rely heavily on promotion from within. It also support the typology in finding that top management team in defenders is more likely to have a finance or production background, unlike that in prospectors with a marketing or R&D background.

Smith et al. (1989) found that the four strategies in Miles and Snow's typology differed significantly in the average age of their executives in the top management team. Executives of reactors tend to be the oldest, followed by those of analyzers, prospectors, and defenders. However, the authors did not found any evidence that there is any difference in the length of tenure for the four groups.

2.2.4 Empirical Studies: Using Miles and Snow's Typology in Strategic Alignment of IT

This section attempts to evaluate in the literature the outcome of the strategic alignment of information systems. Consistent with the objective of this study, the focus will be on the use of Miles and Snow's typology in presenting strategy. The review shows that when a firm's strategy is aligned with its information technology, it will perform better than where there is misalignment. In examining Miles and Snow's typology, the review also finds that reactors tend to erode organizational performance due to a lack of strategy, while defenders, prospectors, and analyzers are associated with a higher level of performance

2.2.4.1 Tan (1997)

The objective of this study was to link perceptions of business strategy, use of IT, and business performance, in the view of business executives. Defenders are expected to mainly use IT to create operational efficiencies through improving administrative and management information systems, while IT for prospectors is focused in expanding strategic alternatives of the organization, including linking with customers and suppliers, eroding and fusing organizational boundaries, and introducing new products and services. Analyzers and reactors are excluded in the study. When strategy is aligned with IT, both defenders and prospectors will achieve comparable and high levels of business performance. The results from the findings are consistent with the proposed "fit". The study also confirmed that alignment between strategy and use of IT has positive impact on business performance.

2.2.4.2 Johnson-Lindsey and Lederer (1999)

This research proposal attempted to identify the alignment between business strategic types and IS staffing orientation, and their relationship with IS performance. Business strategy under Miles and Snow's typology was operationalized using multiple items from Dyer and Song (1997). Staffing orientation was measure under four dimensions: retention policies, staffing and development policies, emphasis put on skills, results, and performance, and compensation policies. Five items were used to measure IS performance: contribution of IS to return on investment, sales revenue, market share, operating efficiency, and customer satisfaction.

The study proposed that defenders have an internal IS staffing orientation, prospectors have an external IS staffing orientation, and analyzers assume an intermediate position in IS staffing orientation. IS performance is proposed to be higher when business strategy is aligned with IS staffing orientation. Defenders, prospectors, and analyzers are expected to have a higher level of IS performance than reactors.

2.2.4.3 Sabherwal and Chan (2001)

The objective of this study is to examine the relation between business performance and the alignment of business strategy and IS strategy. Business strategies were categorized using Miles and Snow's typology and examined with six dimensions: defensiveness, risk aversion, aggressiveness, proactiveness, analysis, and futurity. IS strategy was operationalized in three types: IS for efficiency, IS for flexibility, and IS for comprehensiveness. Four dimensions including operational support system, market information systems, strategic decision-support systems, and inter-organizational systems were used to measure IS strategy. Alignment, then, was examined between business strategy and IS strategy related with business performance.

The study implemented two surveys in the U.S. banking industry. The first survey was addressed to the CEO, CIO, CFO, and senior end user. And the second one was responded by CEO and CIO from 62 companies. It was found that alignment is significantly related with organizational performance for prospector and analyzer.

2.2.4.4 Croteau and Bergeron (2001)

Another important contribution in the field of strategic alignment of IT was presented by Croteau and Bergeron (2001). This empirical study attempted to identify various profiles of technology deployment specific to different business strategy that could best support organizational performance. All four types of strategy in Miles and Snow's typology were utilized. Business strategy was measured with 23 items of Segev's instrument (1987). Technology deployment was operationalized with seven components: strategic impact of IS department, management style of teams, technological architecture, technological scanning, source of IS development, and IS performance evaluation. Finally, organizational performance was measured with perceptions of sales growth and profitability.

Partial Least Square tools (PLS graph) was used to analyze questionnaires from top managers of 223 organizations. The study found that prospector, defender, and analyzer are associated with higher level of performance, while reactor is negatively linked with organizational performance. The study also found that there is a profile specific to each type of strategy for prospector, analyzer, and defender. Finally, prospector and analyzer were found to perform better when their technological deployment is aligned with their business strategy.

2.2.4.5 Ranchhod and Hackney (2003)

This article investigated the level of information systems in organizations from a market

orientation perspective. Different from other studies, this study built an alignment between market orientation and level of information systems. Business strategy is treated as a mediating factor between market orientation and level of information system. The study proposed that three market orientations that focus on processing information from customers, competitors, and coordination of utilization of company resources. Miles and Snow's typology is expected to be associated with the market orientation, thus affecting the level of information systems, which consists of functional requirement, nonfunctional requirement, and top management perception and support. The study found that different market orientation leads to different levels of information systems. However, it did not give detailed data analysis and the alignment profile.

2.2.4.6 Summary of the Use of Miles and Snow's Typology in Strategic IT Alignment

The main theme concentrated on the performance implication of strategic alignment of IT, these articles investigated "what" is aligned with "which" strategic type in Miles and Snow's typology. Reactor was dropped out because it is out of the continuum and has a lack of strategy. Different aspects are looked into within the IS context. Use of IT, IS staffing, technology development, and level of information system were linked to the various strategic types. One major effort in these studies is to set up specific "profile" for each of the strategic types to understand their relationship with various concept in the IS field.

2.3 Outsourcing and IT Outsourcing

2.3.1 Various Theoretical Perspective of Outsourcing

Cheon et al. (1995) systematically examined various theoretical perspectives used in outsourcing research. Four main theories including, resource-based theory, resource dependency theory, agency theory, and transaction cost theory, which is the main concern of this study, are identified and reviewed. Among them the transaction cost theory is the most widely used.

Resource-based theory views an organization as a collection of resources. Resource is defined as fixed input, which enables a firm to perform a particular task (Cheon et al, 1995). According to this theory, competitive advantage can only be achieved from firm resource heterogeneity and firm resource immobility. In order to provide sustained competitive advantage, the resources must meet four criteria: value, rareness, imperfect immutability, and non-substitutability. Outsourcing is regarded as a strategic decision to fill the gaps in the firm's resources, depending upon their resource attributes.

Resource dependency theory takes an external approach and argues that firms depend, to a various degree, on some elements in their external environments. Three dimensions of resources, that are importance, discretion, and alternatives, determine a firm's decision to outsource its internal functions.

Agency theory focuses on designing the most efficient contract that governs the relationship between a principle and an agent. The choice between insourcing and outsourcing depends on agent costs, defined as "the costs incurred as a result of discrepancies between the objectives of the principle and the agent".

Transaction cost theory was introduced by Coase (1937) and developed by Williamson (1985). It maintains that organizations of economic activities depend on balancing production economies against the cost of transaction. Transactions here mean exchange of goods and/or services between organizations. There are two fundamental underlying assumptions in the transaction cost theory. Bounded rationality represents the inability of human beings to find and process all information with regard to a transaction. Opportunism includes hide and distortion of information, shrewd action, and Machiavellien intentions. Transaction cost theory identified two types of costs when considering the governance structure for a transaction: production costs and transaction costs. Outsourcing normally leads to lower production costs mainly thanks to economy of scale, but generally results in higher transaction cost from searching, negotiating, monitoring, and enforcing the contract. The rise in transaction costs may erode the cost advantage brought by production economy. Thus, the outsourcing option could be evaluated with the increase of transaction costs. Asset specificity, uncertainty, and frequency of contracting have been identified as the three main factors influencing transaction costs.

2.3.2 IT Outsourcing: A Transaction Cost Theory Perspective

2.3.2.1 Aubert et al. (1996a)

One of the most important studies of IT outsourcing using transaction cost theory was presented by Aubert et al. (1996a). They reexamined the three dimensions of transactions in transaction cost theory: asset specificity, uncertainty and measurement problems, and frequency of transactions. A framework is proposed that market transaction should prevail when asset specificity is low. When asset specificity is high, the other dimensions take charge when selecting a governance structure. Internal procurement would emerge when uncertainty meets frequent transactions. On the other hand, when uncertainty and frequency of transactions are not as high, outsourcing and strategic alliance are chosen as the popular option.

Case studies of ten large organizations outsourcing part of all of their IS activities were conducted. The study found that outsourcing prevails when asset specificity is low. When firms require more specific human assets, these activities are more likely to be brought in-house. Thus, software development was less outsourced than operations. Measurement problems were also found to relate to outsourcing activities. Transactions that are more observable and verifiable are more likely to be outsourced. Frequency is also a major factor, but it is asset specificity and measurement problems that mainly decide which activities to be outsourced.

2.3.2.2 Aubert et al. (1996b)

In another study, Aubert et al. (1996b) developed specific measures for the dimensions of transactions used in transaction cost theory, in the context of IT outsourcing. Frequency of transaction was dropped from the measurement since IT, in the context of IS operation, could always be regarded as infinite thanks to its continuous basis. One new dimension, the origin of the most important investment, was added in the measurement. It is defined as "the identity of the party making the investment that is most critical to the success of the transaction". The study proposed a model that when asset specificity is low, when there is no problem of measurement, and when the most important investment comes from the supplier, outsourcing should be the chosen governance mode.

All measures are either selected from previous literature, or generated from the case studies in Aubert et al. (1996a). Reliability and validity of the measures were assessed using data from a survey of 250 companies. In the final instruments, asset specificity was measured in six dimensions: client's investments, human resource specificity, HR replacement delay, structural liaison devices, supplier's investments, and uniqueness. Measurement problem was operationalized with five dimensions: formal measures, formalization, standardization, task complexity, and task difficulty. Origin of the most important investments was measured in two dimensions: business skills and technical skills. Governance mode, the level of outsourcing, includes four levels ordered by level of outsourcing from low to high: in-house with own employees, in-house with external employees, equipment hosted at supplier's site, and total outsourcing.

2.3.2.3 Ang and Straub (1998)

Another empirical research of IT outsourcing using transaction cost theory was performed by Ang and Straub (1998). In addition to production economies and transaction economies, financial slack was added to the examination of the determinants of IT outsourcing. Firm size was controlled to examine its effect on IT outsourcing decisions. Financial slack refers to financial resources in excess of what is necessary to maintain the organization. It is hypothesized that higher level of financial slack is linked with lower degree of outsourcing. Data was gathered from senior IT managers in 243 U.S. banks

The study found that IT outsourcing in banks was significantly influenced by production cost advantages offered by vendors. Transaction cost also plays a role in determining the outsourcing activities, but to a lesser extent than production costs. Finally, financial slack was found not a significant determinant, while firm size was an important control factor.

2.3.2.4 Summary of Transaction Cost Theory

Transaction cost theory is used in the field of IT outsourcing research. Asset specificity, uncertainty, and frequency of contracting have been identified as the three main factors influencing transaction cost. However, in the context of IT outsourcing, frequency of transaction has been dropped from the measurement since IT could always be regarded as an infinite resource continuously needed by the organization. In empirical studies, financial slack and firm size are added to control their effects on IT outsourcing levels.

2.4 Miles and Snow's Typology in IT Outsourcing: Previous Research

While the previous chapters examined strategic alignment of IT outsourcing as two separate strands, this chapter aims to identify literature that examined IT outsourcing in the context of strategic alignment of IT, with Miles and Snow's typology to present strategy. The review shows that although there was some theoretical research done in this area, little empirical study has been devoted to examine the relationship between Miles and Snow's typology and IT outsourcing. In addition, previous research put major emphasis on the component of the alignment profile, such as which strategy should be aligned with which kind of IT outsourcing. However, the performance of the strategic IT outsourcing profile is seldom examined.

2.4.1 Das et al. (1991)

This study is one of the major theoretical contribution to linking Miles and Snow's (1978) typology and IT outsourcing. The model proposed by the authors suggested that strategic MIS planning has to align with business strategy in order to optimize the firm's performance. The level of analysis is on business level. Strategic MIS planning was examined in two dimensions: content and process. A strategy's content specifies its fundamental components and orientation. Its process describes the characteristics of the approaches the firm follows in

developing and implantation its strategy. The content dimension is consisted of four categories: distinctive competence, information systems technology, systems design and development, and infrastructure. The process dimension is consisted of formality, scope, participation, influence, and coordination. The four strategic types, defender, prospector, analyzer, and reactor, by Miles and Snow (1978) were analyzed and an appropriate IS profile was proposed for each of these types. When strategy is aligned with strategic MIS planning, defender, prospector, and analyzer are proposed to increase the firm's financial performance. Reactor, due to lack of strategy, is proposed to erode performance.

In the profiles, source of technology was discussed for defender, prospector, and analyzer. It refers to "corporate preference about the origin of IS technologies". Defenders are expected to favor IS that are produced internally, mainly in order to reduce costs. To make up the gap of its own IS and state-of-the-art technologies, defenders are forced to intensify their internal R&D. However, they may form limited alliance with external suppliers for their information technology.

The diversity and complexity of information needs of prospectors is proposed to favor external provision of information technology. Because they are continually pursuing new business opportunities, external sources are proposed to be preferred to internal sources in acquiring information technology.

Analyzer represents an intermediate position between defender and prospector. It is expected that analyzers use external provision of information technologies more than defenders do and

less than prospectors do.

2.4.2 Hirschheim and Sabherwal (2001)

Another important theoretical study was presented by Hirschheim and Sabherwal in 2001. It examined different routes to strategic alignment of IT in businesses. The authors argued that alignment is a two-way process, in which either IT or business could influence the other. Using Miles and Snow's (1978) typology, the study proposed strategic IS alignment profiles for each of defender, prospector, and analyzer strategic types. The profile is consisted of three components. The information systems role reflects the way IS is viewed by senior management. Information systems sourcing refers to internal/external arrangements of IS provision. Information systems structure refers to the configuration of IS function and governance of IS management decisions.

According to the study, defenders would pursue an IS strategy characterized by utility, including IS role towards efficiency, outsourcing, and a centralized structure. Prospectors, on the other hand, would emphasize there IS strategy on creating and changing a market. In this strategy, IS is viewed as champions for business innovation. Insourcing is used to provide IS in-house and keep the knowledge know-how in the organization. And a decentralized structure is used to ensure proximity of IS knowledge to business units. Analyzers would choose an intermediate position between defenders and prospectors, characterized by a comprehensive IS role, selective sourcing, and mixed structure.

2.4.3 Grover et al. (1994)

The objective of this study is to understand motivations of IT outsourcing. It examined the relationship between gaps in IS resources and capabilities and extent of IT outsourcing. Strategy was treated as a moderating factor, using Miles and Snow's (1978) typology. Four discrepancy states were identified in gaps of IS resources and capabilities: discrepancy in quality of information, in quality of IS support, in quality of IS staff, and in IS cost-effectiveness. The study examined different types of outsourcing: applications development and maintenance, systems operations, telecommunications management and maintenance, end-user computing, systems planning and management, and overall outsourcing.

The study found that gaps in IS resources and capabilities has a significant relationship with extent of outsourcing. In terms of strategy, prospectors tend to be more responsive to gaps and aggressively pursue outsourcing opportunities. Analyzers were found not responding to gaps but rather to industry trends. Defenders tend to pursue safer outsourcing, instead of outsourcing core functions such as system planning and management pursued by prospectors.

2.4.4 Teng et al. (1995)

Another study testing the relationship between strategy and outsourcing was conducted by Teng et al. (1995). The authors attempted to test discrepancy theory in outsourcing decisions. Five discrepancy states were examined. Discrepancy in firm financial performance was added to the states in addition to the four states used in Grover et al. (1994). Strategic types

were hypothesized to have a direct relationship with IT outsourcing decisions, instead of having a moderating effect. The ANOVA results showed that there is no significant differences among the Miles and Snow's (1978) strategic types in IT outsourcing decisions, although prospectors were found to outsource more, though insignificant statistically. The authors argued that this result reveals a more advanced diffusion stage of IT outsourcing, in which general applications of outsourcing such as payroll pose low level of risk propensity across all strategic types. They also suggest later research be done in the area of outsourcing of strategic applications.

2.4.5 Summary of the Use of Miles and Snow's Typology in IT Outsourcing Research

The use of IT outsourcing with regard to Miles and Snow's typology is examined in these studies. It is reasoned that defender tends to produce IT internally while prospector prefer to outsource more. Analyzer holds an intermediate position. It is argued that IT is treated as utility in defender and innovation tools in prospector. The conclusion from theoretical reasoning tends to be that the level of IT outsourcing increases from defender, analyzer, to prospector. However, empirical evidence was rarely found to validate this argument.

2.5 Literature Review Summary and Conclusions

There are four major findings from the literature review. First, the need to align business

strategy with information technology is well documented. IT should not be seen as independent, but rather an integrated part into an organization's strategy. Second, Miles and Snow's strategic typology has been used and validated in the strategic alignment of IT literature. There is a specific IT profile corresponding to each of defender, prospector, and analyzer type of business strategy. When IT is aligned with business strategy, organizational performance tends to be enhanced. Third, IT outsourcing has been less studied in the literature of strategic alignment of IT. It has been proposed that prospectors tend to outsourcing more than do defenders, while analyzers take an intermediate position (Das et al., 1991; Hirschheim and Sabherwal, 2001). However, there is no empirical evidence of strategy's direct impact on degree of IT outsourcing (Teng et al. 1995). Only moderating effect was observed (Grover et al. 1994). Finally, there is no research examining the outcome of the alignment of strategy and IT outsourcing. IT outsourcing performance and success is vaguely defined, and there is no standard construct. Outsourcing performance is measure through different dimensions (i.e. technological vs. economical) and various views (i.e. top management vs. end user). A summary of major empirical studies of strategic alignment of IT and IT outsourcing using Miles and Snow's typology is provided in Table 3. We can conclude that further research is needed to examine the alignment of strategy and IT outsourcing, as well as the alignment's impact on specific level of performance.

Table 3. Summary of Major Empirical Studies of Strategic Alignment of IT Outsourcing Using Miles and Snow's Typology

Study	Research Question	Major Constructs	Methodology	Results
Tan (1997)	Does fit between a firm's strategy and its use of IT is positively associated with higher levels of firm performance?	-strategic type -IT usage -organizational performance	Data Collection: Survey of 65 organizations Data Analysis: T-test	Prospector and defenders use IT differently. Both show higher level of organizational performance.
Johnson-Lindsey and Lederer (1999)	How does IS staffing orientation align with business strategy, and the alignment's outcome on IS performance?	-strategic type -IS staffing orientation	Data Collection: A survey of top IS executives in the software development industry Data Analysis: n/a (research proposal)	Prospectors use external IS staffing. Defenders use internal IS staffing. Analyzers use combination of external and internal IS staffing. When IS staffing is aligned with business strategy, higher performance is expected.

Study	Research Question	Major Constructs	Methodology	Results
Croteau and Bergeron (2001)	What are the various profiles of technological deployment specific to various types and business strategy that best support organizational performance?	-strategic type -technological deployment -organizational performance	Data Collection: Two questionnaires by 223 top managers Data Analysis: Partial Least Square analysis	An outward technological profile contributes directly to organizational performance for analyzers, while an inward profile of technological deployment contributes indirectly to organizational performance for prospectors.
Sabherwal and Chan (2001)	What are the impacts of alignment of business and IS strategies on perceived business performance?	-business strategy -IS strategy -alignment -perceived business performance	Data Collection: Empirical data from two surveys of 164 and 62 companies Data Analysis: Configuration approach	Results indicate that alignment affects perceived business performance but only in some organizations. Alignment seems to influence overall business success in prospectors and analyzers but not in defenders.

Study	Research Question	Major Constructs	Methodology	Results
Grover et al. (1994)	What are the impact of corporate strategy and the role of information technology on IS functional outsourcing?	-gaps in IS resources and capabilities -business strategic type -IT role -extent of IT outsourcing	Data Collection: A survey of 188 top IS executives from the Spring 1992 edition of the Directory of Top Computer Executives Data Analysis: Correlation analysis	Gaps in IS resources and capabilities has a significant relationship with extent of outsourcing. Prospectors tend to be more responsive to gaps and aggressively pursue outsourcing opportunities. Analyzers were found not respond to gaps but rather to industry trends. Defenders tend to pursue safer outsourcing
Teng et al. (1995)	What factors may be associated with the IT outsourcing decision? Is there empirical evidence to support the relationships between these strategy-theoretical factors and the IT outsourcing decisions?	-discrepancy in resource performance -strategic type -strategic role of IT -IT outsourcing decision	Data Collection: A survey of top IS executives in randomly selected industries Data Analysis: ANOVA	There is no significant differences among the Miles and Snow's (1978) strategic types in IT outsourcing decisions, although prospectors were found to outsource more, though insignificant statistically.

3. Methodology

3.1 Research Question

The research question that we address in the study is whether there is a link between an organization's strategic type and its level of information technology (IT) outsourcing. More specifically, it will be investigated how strategic types in Miles and Snow's typology can be related to the level of IT outsourcing activities deployed by an organization.

3.2 Defining Constructs and Variables

This study is concerned with the following main constructs: strategy and IT outsourcing level. This section discusses each of these constructs and defines the variables associated with them.

3.2.1 Strategy

Strategy is defined as "the outcome of decisions made to guide an organization with respect to the environment, structure, and processes that influence its organizational performance" (Croteau and Bergeron, 2001). The current study uses Miles and Snow's

typology. This typology has been used by many to measure organizational strategy (Das et al., 1991; Grover et al., 1994; Teng et al., 1995; Tan, 1997: Croteau and Bergeron, 2001; Sabherwal and Chan, 2001). Multiple-item scale instruments were mainly used before in IS research. Qualitative methodology was rarely found. Instruments used for archival data analysis are developed to facilitate the current study. The development of such scales will be discussed in detail in the subsequent chapter.

3.2.2 Level of IT Outsourcing

IT outsourcing is defined by Willcocks and Kern (1998) as "the handling over to a third party management of IT/IS assets, resources, and/or activities for required results". Aubert (1996b) used "governance mode" to represent various level of IT outsourcing in an organization. Different situations are possible in the IT sourcing scenarios. An organization could perform all of its IT operations in-house using its own employees. Alternatively, it can use employees from a third-party supplier to perform in-house operations. At higher levels toward total outsourcing, the firm's equipment is hosted at a site owned and operated by its supplier. And finally, total outsourcing stands for letting the supplier performing all IT operations on its own equipment at its own location.

3.3 Relationship between the Key Constructs

Since the preference of innovation and change increases from defenders to analyzers and

to prospectors, we can measure if different strategic types will have different IT outsourcing behaviors. We can hypothesize that defenders will be the most cautious users of IT outsourcing while prospectors, being the most prone to change and innovate, will be the highest users of IT outsourcing. Analyzers will be between the two groups.

3.4 Developing Measurement Scales

The objective of this section is to develop a coding method to classify organizations, from their annual reports, into Miles and Snow's strategy typologies. Previously, questionnaires were mainly used to measure business strategies. However, as reluctance and resistance to academic questionnaires have been built in more and more corporate policies, surveys are more difficult to conduct to collect enough meaningful data for this level of analysis. On the other hand, secondary data such as public information provides a neutral viewpoint and is often examined by many. Therefore, we turn to secondary data to find another way to realize the measurement. Annual reports are usually used to describe an organization's strategy for its investors. They are accordingly chosen as the main subjects of this study. Please note that IT service providers are excluded from the subjects of investigation in this study since we are mainly discussing the use of IT outsourcing in organizations here, rather providing IT outsourcing services as the main product-market offering.

3.4.1 Quantitative VS. Qualitative Data

Based on Miles and Snow (1978), we come up with a table listing attributes for defenders analyzers and prospectors. The initial effort is to extract a word list that could be used to search in the annual reports to match the attributes. According to Chung et al. (2003), key terms identified as queries to search can be used in analyzing textual context, in their case, business intelligence topics in web pages. A computer program that "parse out" the key terms from the context would greatly facilitate the analysis process. The program, a parser as it is called, looks for key terms matching in its exact form or in associated phrases. In their case, the term of knowledge management could be parsed out in "knowledge management", "strategic knowledge management", or "knowledge management planning". However, we found this method neither reliable nor consistent in our context. A simple word list is effective in capturing exact technological terms, but can barely reflect the complexity and beauty of human language, not to mention used in describing such a complicated and holistic issue as organizational strategy. For example, we try to search "efficiency", "cost", and their related phrases for the attributes of a defender in several randomly selected companies. It comes out either with no results or meaningless ones. As we read through the reports, it is found that several of the companies are indeed "strong" defender candidates. However, the concept of efficiency is expressed in several ways within different contexts. After realizing that annual reports cannot be easily quantifiable, we turn to qualitative methodology in search of the classification method.

3.4.2 Documentary Analysis

While a simple search list cannot satisfy our needs, we found qualitative research is widely used to deal with archival data like annual reports. Documentation consists 64% of data collection in qualitative research (Dube and Pare, 2003). We follow Dube and Pare's (2003) suggestions in developing our coding scheme.

Clear research questions. As was discussed earlier, our research question is to investigate the variance in IT outsourcing levels among organizations employing different strategies.

Theory of interests. Prior theorizing constitutes an essential input in explanatory case design (Yin, 1994). The theoretical foundations of the Miles & Snow Typology can be traced to Child's (1972) classic conceptualization of strategic choice. Based upon the assumption made by Miles & Snow that organizations develop relatively enduring patterns of strategic behavior that actively co-align the organization with its environment, the authors consider the "adaptive cycle" characterizing this process as involving three problems and solution sets:

- An entrepreneurial problem set centering on the definition of an organization's product market domain.
- An engineering problem set focusing on the choice of technologies and processes to be used for production and distribution
- An administrative problem set involving the selection, rationalization, and development of organizational structure and policy processes.

A priori specification of constructs and clean theoretical slate. Dube and Pare (2003) recommend using existing theoretical constructs that help to shape the research design. At the same time, no construct is guaranteed a place in resulted theory, showing the contingent characteristics of documentary research. Although constructs could be established in advance, these may still need confirmation in the data. Some of the constructs may not be found. Some newly derived, and existing ones may need to be modified. We are ready to anticipate all of the contingencies since this is, indeed, part of the rationale and justification for conducting a qualitative approach.

In measuring the concept of strategy, we found two instruments, Conant et al. (1990) and Segev (1987), were among the most popular. We choose the constructs in Conant et al. (1990) as our priori specification of constructs because it is partly based on paragraph approach that is more appropriate to analyze annual reports.

According to Conant et al. (1990), the analysis of the four Miles & Snow strategic types revealed the existence of 11 distinctive strategic dimensions. Each dimension focuses on a particular issue related to strategic orientation, four paragraph-like answers are then proposed (one four each strategic type). Of interests here are those related to defender, analyzer, and prospector, since reactor is out of the continuum as discussed earlier. Also from Miles and Snow's original work in 1978, 19 attributes are extracted as items to describe organizational strategy. They are similar to those of Conant et al. (1990). Miles and Snow (1978) provided how each attribute differ across the strategic types. For example, in the product-market domain construct, narrowness and stability are expected to be found in defenders while broadness and development are to be found in prospectors, and a mix of both to be analyzers. A detailed summary of the 19 attributes and their categorization, along with previous testing on them, are shown in Table 4.

Table 4. Dimensions of the Adaptive Cycle

	Defender	**Prospector**	**Analyzer**
Product -market Domain (Conant et at., 1990)	Narrowness and stability	Broadness and development	Mixed
Way of Competition (Conant et at., 1990; Hambrick, 1983; Conant et at., 1987)	Aggressively maintain domain	Monitor a wide range of environmental conditions	Mixed
Environment Scan (Conant et at., 1990)	Ignore developments outside domain	Create changes	Frequently, limited to marketing, some R&D
Way of Growth (Conant et at., 1990; Hambrick, 1983)	Penetrate deeper	Location of new market	Both
Rate of Growth	Cautiously and incrementally	In spurts	Steady, mixed
Technology (Conant et at., 1990)	A single core	Multiple	Dual cores
Technology Buffer (Conant et at., 1990; Hambrick, 1983)	Vertical Integration	People	Mixed
New Technology	Update to maintain efficiency	Prototype	Mixed
Dominant Coalition (Conant et at., 1990)	Finance, Production	Marketing, R&D	Marketing, R&D, Production

Tenure (Chaganti and Sambharya, 1987; Smith, 1989)	Lengthy, promoted from within (production, finance, engineering)	Short, from outside	Mixed
Planning (Conant et at., 1990)	Intensive, problem solving	Extensive, problem finding	Both
Planning Sequence	Plan-Act-Evaluate	Evaluate-Act-Plan	Both
Structure (Conant et at., 1990)	Functional	Product	Matrix
Division of Labor	Extensive	Less Extensive	Moderate
Formalization	High	Low	Moderate
Control System	Centralized, long-looped	Decentralized, short-looped	Moderate
Coordination (Conant et at., 1990)	Standardization	Complex and Expensive	Extremely Complex
Conflict Resolution	Hierarchical	Coordinators	Both
Performance Appraisal	Against efficiency	Against competitors	Both

3.4.3 Pilot Cases Study

We use a set of pilot cases to look out for these dimensions in the data. Following Miles and Snow (1978), we started by selecting a single industry to develop the coding scheme, since the diversity of organizations across various industries may blind us in this phase. SIC code is used to select an industry and code 1499 (other metal mining) was randomly chosen for pilot cases. Moreover, the single industry study needs to be "narrowly defined for the purpose of simplicity" (Miles and Snow, 1978). Diamond and gemstone mining firms are selected, accordingly, as our main subjects of the pilot study. We acquired annual reports of seven random chosen companies from Mergent Online database. As the fiscal year varies in the firms, annual reports for 2003 are used in the analysis.

For each company, we read its 2003 annual report to identify descriptions and facts that correspond to the instrument of Conant et al. (1990) or the 19 attributes in Miles and Snow (1978). We then use Miles and Snow's typology to categorize each identified attributes into strategic types. Out of those constructs, eight are found in the pilot cases. Among the eight, six constructs are consistently identifiable and distinguishable in all the annual reports. These include product-market domain, domain maintenance, way of growth, technology, technological buffer, tenure of dominant coalition. When coding for tenure of dominant coalition, we use the ratio of inside board directors to outsiders as our main categorizing criteria. It comes from the rationale that defenders would more likely promotes its dominant coalition from within, while prospectors tend to use more

outsiders to facilitate their innovation processes. Inconsistency is not found in the dimensions. Thus, no reactor is identified. A detailed analysis of the six dimensions in our coding scheme is shown as following. A summary of the pilot coding is presented in Appendix 1.

Product-market domain

Every organization has developed a concrete definition of an organizational domain: a specific product or service and a target market or market segment. Defenders tend to have a stable and narrow domain, while prospectors a wide and unstable one. Analyzers represent a middle position between prospectors and defenders. They maintain a stable part of their domain while pursuing innovative opportunities in other areas.

Defender: "... we remain committed to our jewelry business to introduce gem stone intensive timepieces of the highest technical quality." (Aber Diamond, 1997 Annual Report, p3)

Prospector: African Gem Corp. is engaged in rough gemstone mining, tanzanite polishing, tanzanite trading, and luxury brands affiliation businesses. (African Gem Corp, 1997 Annual Report, p4)

Analyzer: Corona Gold is mainly operating in the gold mining industry. It invest a small portion of its excessive cash into a tire recycling business, Unisphere Waste Conversion

Ltd. (Corona Gold, 1997 Annual Report, p2)

Domain Maintenance

A firm's success hinges on its ability to maintain aggressively its domain. This aggressiveness is most evident in defender's continuous efforts to become more efficient technologically. They normally stress price competition or good customer service. On the contrary, prospectors frequently step into new market and come up with new products and service, creating changes in the industry. Analyzer would have both characteristics.

Defender: "Firestone's key competitive advantage is its substantial intellectual property database and expertise from more than forty years of diamond exploration worldwide." (Firestone Diamond, 1997 Annual Report, p5)

Prospector: "Our competitive advantage ultimately lies in the source of the product (our tanzanite mine) and our understanding of branding and marketing. We cannot compete in cutting and polishing on a large scale. India's beneficiation industry, amongst others, is decades old and the cost of labor is significantly more competitive". (African Gem Corp., 1997 Annual Report, p3)

Analyzer: "Corona is involved primarily in the acquisition, exploration and development of mineral resource properties in Canada.", "the Company, as a result of completing its plan of arrangement with Unisphere Waste Conversion Ltd. in 2002, holds approximately

3.8 million shares in that corporation." (Corona Gold, 1997 Annual Report, p4)

Way of Growth

This dimension captures how a firm grows. Defenders typically grow by penetrating deeper into their current markets, facilitated by their narrow and stable market domains. Growth in prospectors primarily results from the location of new markets and the developments of new products or services. Analyzers experience a growth pattern characterized by both market penetration and product-market development.

Defender: "Exploration efforts ... have been stepped up this year in an effort to extend mine life and/or capacity". (Aber Diamond, 1997 Annual Report, p3)

Prospector: "five years ago few people heard about Tanzanite, ... we established a market through advertising and marketing ..." (African Gem Corp., 1997 Annual Report, p6)

Analyzer: "... we look for acquisition opportunities in gold mines to strengthen our position...", "... when the stock market environment did not support aggressive mineral exploration and financing, the Company pursued other business opportunities to increase shareholder value." (Corona Gold, 1997 Annual Report, p4)

Technology

Technology here refers to the system in the operation management to meet the needs of the product-market domain. Efficiency is stressed by defenders in their technologies, aiming at how to do things better with current resources. In prospectors' view, technology is where innovation comes from, aiming at how to develop new products of new markets through technology innovation. Analyzers would have dual cores of technology corresponding those in both defenders and prospectors.

Defender: "Engineering performance, particularly related to the water retention dyke that was the fundamental challenge of the project, has ... been accomplished within budget ..." (Aber Diamond, 1997 Annual Report, p3)

Prospector: "The Company has embraced the concept of branding as the nucleus of our campaign." (African Gem Corp., 1997 Annual Report, p4)

Analyzer: "Drilling efficiently yielding positive results that, in the view of the Company's exploration team, significantly increased the number of contained ounces of gold in the mineralized zone." (Corona Gold, 1997 Annual Report, p5)

Technological Buffer

This dimension refers to the mechanism a firm employs to protect its current technology. A typical buffering device for defenders is vertical integration, providing them with the ability to control efficiently the production process and the ability to utilize their current

technologies to a maximized extent. As innovation is the core competence for prospectors, who operates the machines are much more important than the machines themselves in this type of firms. Prospectors embedded technology in their employees, human resource specificity, to continuously enjoy the creation and innovation of human intelligence.

Defender: "having acquired control of one of the great names in luxury retail" ... "our participation in the most lucrative "bookends" of the diamond trade: mining and retail." (Aber Diamond, 1997 Annual Report, p6)

Prospector: One whole chapter is dedicated to employee recruiting and development. Sustainability Report: "health, safety, and security"; "managing HIV/AIDS"; "community development"; "social investment initiatives". (African Gem Corp., 1997 Annual Report, p8)

Analyzer: "... we pay special attention to promoting the health, safety, and welfare of its employees and to the protection of the environment." (Corona Gold, 1997 Annual Report, p5)

Ratio of Inside to Outside Directors

Miles and Snow (1978) argued that the dominant coalition is mainly promoted from within for defenders, from outside for prospectors, and both from within and outside for analyzers. We look at the board of directors as the dominant coalition of the organizations

and try to see if there is any pattern in the ratio of inside directors to outsiders. Not surprisingly, defenders have on average 55% of their directors inside the organizations, while prospectors and analyzers have 69% of their directors from outside.

4. Data Collection & Analysis

4.1 Description of Data and Sample Used in the Study

Data of IT outsourcing level used in this study was previously collected in Aubert et al. (1999). The dataset contained items related to IT activities outsourced or conducted in-house. The sub-sample deals with one activity: CPU operations, which means the organizations' data centers. No non-response bias was found, either by comparing respondents' firm size with non-respondents firm size or by comparing the responses from late and early respondents.

50 companies are randomly selected to be analyzed in this study. Among them, one company is removed since it is an outsourcing service provider. Therefore, the final sample represents 49 Canadian companies in diversified industries ranging from aerospace to publishing.

4.2 Data Collection

Annual reports of fiscal year 1997 were collected for the 49 companies. Three main sources were used, the company's website, a comprehensive financial database Mergent Online, and Sedar.com, an online collection of Canadian financial fillings. We then read each annual report to identify the six dimensions extracted in the pilot study to categorize each company based on Mile's and Snow's strategy typology. To minimize subjective bias, only company names were provided when coding for the strategy construct. Measurement of strategies of all 49 companies was finalized and verified before level of IT outsourcing was known.

4.3 Analysis of Strategy Coding

Among the 49 companies, we found 28 Defenders (57%), 8 Prospectors (16%), and 13 Analyzers (27%). As they were in the pilot study, the six dimensions of the adaptive cycle are consistently identified through the annual reports. A detailed analysis of the six dimensions in the coding process is shown as following. A summary of the coding is presented in the Appendix 2.

4.3.1 Product-market Domain

This dimension refers to the specific product or service and a target market or market

segment. We found the domain of the defenders both narrow and stable, consistent to what Miles and Snow (1978) argued. Not only do defenders concentrate in carefully selecting domains, they also usually claim to stay in these domains in the long run. It is noted that narrowed does not necessarily mean singleness. Defenders could operate in a few, not many, areas that are closely interrelated. On the other hand, prospectors operate in multiple domains. Moreover, their domain "portfolio" changes frequently, incorporating new domains while quitting existing ones. The addition of domains is mainly done with ventures and acquisitions. A wide and dynamic domain characterizes prospectors. Analyzers hold a mixed domain both stable and changing. They keep part of their domain protected and unchanged while changing other part frequently. Three examples are given as following corresponding to each of the strategic types.

Defender: "Dover Industries concentrates its manufacturing in two business segments – Food Products and Paper and Plastic Products." (Dover Industries, 1997 Annual Report, p2)

Prospector: "We ventured into and out of a variety of operational areas such brick manufacturing, civil construction, and engineering." (Pe Ben, 1997 Annual Report, p3)

Analyzer: "Air Canada continued its strategy to ... expand services in international markets while moderates the growth in domestic capacity."

4.3.2 Domain Maintenance

To maintain its domain, defenders are found to stress their efforts mainly on price and customer service. This is consistent with their continuous focus on the narrow domains. Prospectors, in contrast, continuously bring new products and services into new markets. That is also in line with their dynamic domains. Analyzers are found to show both the characteristics of defenders and prospectors. Examples are given as following corresponding to each of the strategic types.

Defender:

"Our group is recognized for quality parts, timely delivery, and competitive prices." (UAP, 1997 Annual Report, p2)

"To maintain its leadership ..., The Group will focus its strategy on ... delivering more efficient customer service." (Tembec, 1997 Annual Report, p5)

Prospector:

" Several new aircraft were rolled out to serve various new market segments." (Bombardier, 1997 Annual Report, p7)

"We introduced Maxi & Co., a new format designed to respond to consumer's desire to

do their entire weekly shopping under one roof." (Provigo, 1997 Annual Report, p3)

Analyzer:

"Improving customer service is a key objective.", "We have focused on launching new or unique routes, creating a nonstop or direct service where there was none previously" (Air Canada, 1997 Annual Report, p3, p5)

4.3.3 Way of Growth

Defenders typically grow by penetrating, or "digging", deeper in their narrow and stable domain, since they are thoroughly familiar with their clients and customer needs. Product development in defenders is usually an extension of the current offering line or into closely related areas. Prospectors see their growth mainly as result of location of new markets and development of new products. They expand horizontally into related products and markets. Analyzers grow by penetrating vertically and expanding horizontally at the same time. Examples are given as following corresponding to each of the strategic types.

Defender:

"We will also be expanding our life and savings business, starting with our own auto and homeowner customers." (Allstate, 1997 Annual Report, p7)

"Ideal Metal continues to focus exclusively on the distribution of non-ferrous metals and on serving all market segments." (Ideal Metal, 1997 Annual Report, p4)

Prospector:

"We have created a niche in brokerage operations and capital markets ..." (Laurentian Bank, 1997 Annual Report, p3)

"We divested ourselves of consumer distributing, Sports Experts, Top Valu, and our American operations." (Provigo, 1997 Annual Report, p5)

Analyzer:

"The company is going into auto market in East Europe, Asia, and other new places." (Chrysler, 1997 Annual Report, p9)

"We aim to maximize synergies among related business" (Cara, 1997 Annual Report, p5)

4.3.4 Technology

Defenders are found to rely heavily on a cost-efficient technology. This efficiency, in turn,

is made possible by their relatively stable product-market domain. In the case of prospectors, the focus is put on how to use technology to develop prototype and new products, since their domains are unstable and changing frequently. We see analyzers use a mix of both types of technologies. Following are examples of each strategic type.

Defender:

The Lottery is operated on a computer system whose objective is "to operate in the most efficient way". (BC Lottery, 1997 Annual Report, p4)

" The automation of the Cambridge four mill ... reaps rewards of improved efficiencies." (Dover Industries, 1997 Annual Reports, p4)

Prospector:

"The company's development of technology will continue to focus on innovate and create new products." (Bombardier, 1997 Annual Report, p7)

"We are increasingly innovative in our use of technology as a revenue-producing tool" (Thomson, 1997 Annual Report, p9)

Analyzer:

"The new PCFS will become the platform for the cost-effective delivery of the Bank's core products." (Bank of Montreal, 1997 Annual Report, p9)

"We took another important step with our decision to buy eight wide body Airbus A330 and A340 aircrafts for new route offerings." (Air Canada, 1997 Annual Report, p4)

4.3.5 Technological Buffer

In terms of protecting their technology, we find that a common approach for defenders is vertical integration. By combining all stages of production into a single technological system, vertical integration offers the technological efficiency defenders are looking for. Vertical integration could be accomplished in mergers, acquisitions, or partnership and alliances. For prospectors, human asset specificity is given more priority, showing their belief that the ability of innovation does not lie in one specific machine but rather in the person who operates it. While one may argue that all companies treat their employees as an asset nowadays, we do find difference exist among the strategic types. Analyzers, as always, show characteristics of both defenders and prospectors. Examples are shown as following for each type.

Defender:

" A major global alliance with Sumitomo Rubber ... will restore Goodyear as the

world's largest tire company." (Goodyear, 1997 Annual Report, p7)

GEAC acquired several software companies to "dramatically cut expenses". (GEAC, 1997 Annual Report, p4)

Prospector:

Funding was provided to schools and universities for the training of new engineers. (Bombardier, 1997 Annual Report, p9)

"Provigo recognizes that reinventing its food retailing business cannot be accomplished without continuous training of its management and staff." (Provigo, 1997 Annual Report, p13)

Analyzer:

"··· added to an already formidable lineup of partners that includes the top three car rental companies, and several of the world's leading hotel chains." (Air Canada, 1997 Annual Report, p3)

"We seek strong relationships based honest communications with employees and their families." (Cameco, 1997 Annual Report, p1)

4.3.6 Ratio of Insider to Outside Directors

On average, defenders have 55.6% of their board of directors from inside, while prospectors have only 29.8% insiders. Analyzers are expected to have a ratio between defenders and prospectors but are found to have 24.7% insiders. The reason could be explained by the argument the analyzers need more scanning activities to follow prospectors' innovation trend. Accordingly, they have more outside directors than prospectors.

4.4 Linking Strategy with Outsourcing Levels

After we finish the coding of strategic types, we turn to the dataset of Aubert et al. (2004) for the outsourcing levels of these 49 companies. In the dataset, they are either outsourcing or doing their IT activities in-house. Among the 49 companies, 12 (24%) outsourced while the other 37 (76%) do not. Among 28 defenders, 5 (18%) outsourced. Among 8 prospectors, 4 (50%) outsourced. Finally, in the case of analyzers, 3 out of 13 (23%) outsourced. A detailed summary of the distribution of the companies is shown in Table 5.

Table 5. Outsourcing Profile for Miles and Snow's Strategic Typology

	Outsource	In-house	Total	Percentage of Outsourcing
Defender	3	10	13	18%
Prospector	4	4	8	50%
Analyzer	5	23	28	23%
Total	12	37	49	24%

5. Interpretation and Discussion

5.1 Relationships Between Strategic Types and Outsourcing

Consistent to our predicted model, we find that prospectors outsource more than their defenders counterparts do, while analyzers take an intermediate position. Due to their pursuit of efficiency, defenders prefer to own most or all the assets associated with a particular business. Their operating logic is centrally coordinated specialization. It is the requirement of specialization that defenders prefer to keep their IT in-house for further improvement since they know their systems and specific requirements better than anyone else does. While at the same time, it is the result of specialization that makes it harder for defenders to outsource their IT to an outside provider who cannot bear the high cost of tailoring to the specific needs of defenders, or even just transferring the current systems to the provider.

With innovation and creation as their central competency, prospectors can be thought of as a collection of special-purpose machines, each independently operated to serve a particular market. They continuously adopt new product-market innovations and discard old ones that cannot promise high profits with the first-mover's advantage. Normally, prospectors do not have all the required assets for its innovation. They need to use outside help extensively to push quickly their creation to the market. Furthermore, their frequent change in product or service portfolio does not allow them to have a stable information system for each innovation, let alone any further efficiency-improving efforts with those systems. To prospectors, IT could always be outsourced if it does not matter much with their product-market innovation and creation.

Since analyzers have both the characteristics of defenders and prospectors, they outsource more than defenders but less than prospectors do. The stable part of their product-market domain requires a specific IT, while the innovation part needs outside support to create new markets. Thus, analyzers hold an intermediate level of IT outsourcing

5.2 Relationships Between the Adaptive Cycle and IT Outsourcing

We extracted six dimensions in the adaptive cycle to describe the concept of strategy. While Miles and Snow's typology is a holistic approach and dimensions in the adaptive cycle are aligned with each other, we also want to look at the relationships between the

dimensions and IT outsourcing to understand the correlation in different viewpoints.

5.2.1 Product-Market Domain

Defenders operate in a particular field and stick to it in the long run. They know better than any other outsider does for the needs of the specialization. Accordingly, their IT needs are also so specialized that it is both too costly or too "core" to be outsourced. On the other hand, prospectors hold a wide and frequently changing domain. Setting up and maintaining each domain for its own IT needs limits their ability and cost their resources that should be used for innovation and creating market. They do not have the competence and expertise for the IT applications in each new field they come into. Please note here that we are excluding IT service providers, so creating innovative IT solutions is never a product-domain in this discussion. In this case, prospectors are more inclined to outsource their IT than defenders. Analyzers, since they have both a stable and a changing part in their domain, outsource more then defenders but less than prospectors.

5.2.2 Domain Maintenance

Defenders maintain their status in the domain extensively on a price basis. To maintain a competitive price, they need to monitor and lower their cost as much as possible. Since they know better about their specific IT needs than outside service providers. Maintaining IT in-house, rather than outsourcing it to an external partner, is actually the most cost-

efficient approach for defenders. In comparison, prospectors maintain their domain by frequently introduce new products and innovation. The emphasis is put on the "introduction" of new products rather than providing support for those new products, e.g. IT call centers. Moreover, providing specific IT solutions for all the many products and markets overwhelms the ability of prospectors to innovate. Therefore, outsourcing IT will let prospectors concentrate more on what they best: creation new products and markets. Analyzers, though they innovate to some degree, always follow prospector's lead and compete more on a price basis in the new market than prospectors. Accordingly, their IT needs are more specialized than prospectors but still not cost-efficient if keeping all in-house. That is why they outsourcing more than defenders but less than prospectors.

5.2.3 Way of Growth

Defenders typically grow by penetrating deeper in its own domain. They continuously dig through their particular market and get better and better in their specific field. This kind of growth is built on and forms the basis of specialization of defenders' IT needs. Their IT has to be tailored specifically to their particular market and products. And their IT requirement has to be different as much as possible in the particular area. Keeping IT in-house can meet these requirements and let defenders remain and improve their specialization. Prospectors, on the other hand, tend to grow horizontally. The time frame of their operations does not allow their IT to become too specific in one particular area since they continuously create new markets and get rid of new ones. To devote their efforts as much as possible in the process of innovation in products and markets, it is

more reasonable for them to outsource their IT. Analyzers grow vertically and horizontally at the same time. They keep part of their IT need in-house for the sake of specialization, and outsource other part to facilitate market innovation.

5.2.4 Technology

Technology here mainly refers to the manufacturing that produces the chosen products for the chosen market. Defenders strive to make their technology as efficient as possible, aiming at how to do things better with current resources. In terms of information needs, this means how to acquire as much useful information for defenders' specialization. Again the high level of required specialization makes it either hard of costly for defenders to outsource their IT. Conversely, prospectors use their technology primarily in order to innovate, creating new products and new markets. On one hand, their information need in one particular area is less specific than defenders. On the other hand, they need to continuously set new systems to meet information needs for their new markets. Since we exclude IT providers, prospectors would always use an external help for their IT needs.

5.2.5 Technological Buffer

In the protection of their technology, defenders think their know-how is embedded in the technology per se. They often use vertical integration to combine all or most of the stages of production to pursue long-term efficiency. Again, the specialization of their IT needs

makes them prefer keeping IT in-house. Prospectors believe that the essence of innovation lies in their employees, not in any particular technology or machinery, making much sense they often outsource their IT. Analyzers, due to their having both characteristics of defenders and prospectors, outsource to an intermediate degree.

5.2.6 Ratio of Inside Directors to Outsiders

Specialized firms always promote their directors from within since they better their particular needs. More innovative firms, in comparison, rely more and more outsiders to assist find future opportunities. In this sense, the smaller the proportion of insider directors, the more the possibility a firm outsource their IT for its particular needs.

6. Conclusion and Discussion

6.1 Summary of Results

At the first step, the current study adopted a qualitative methodology to measure strategy in organizations. The coding analysis found that Miles and Snow's strategies do exist and can be identified through secondary data such as annual reports. Six dimensions were consistently identifiable among the organizations to describe the adaptive cycle: product-market domain, domain maintenance, way of growth, technology, technological buffer,

and ratio of inside to outside directors.

Looking into the relationship between strategy and IT outsourcing, we confirmed our model that prospectors are the highest users of IT outsourcing, while defenders are most unlikely to outsourcing their IT. Analyzers are between the two groups. This relationship can be explained by differences in dimensions of the adaptive cycle. Defenders' specialization, focus on efficiency, and domain protection require them to know better and have more specific IT needs. IT outsourcing, long considered a major way to cut costs, may not achieve cost-effective in the case of defenders. Prospectors, on the other hand, stress innovation and human asset specificity. Developing new products and creating new markets, rather than setting up IT from scratch for those products and markets, are their major competence and where they put the most efforts. Therefore, we saw more prospectors outsource their IT to outside partners. Analyzers showed an intermediate position since they have characteristics of both prospectors and defenders. The specialization part of their strategy requires them to keep part of their IT needs in-house while the innovation part seeks the help of outsiders for IT. We argue that is why analyzers outsource more than defenders, but less than prospectors.

6.2 Contributions

6.2.1 Theoretical Contribution

1) Previously, MIS researchers of Miles and Snow's typology mainly measured strategy with questionnaires. While it is a very useful approach, the current study explored the use of archival data like annual reports. The results indicate that qualitative approach is also appropriate in discussing the concept of strategy. Moreover, this approach adds to the neutrality of the data and thus provides a more objective view.
2) The study confirms that the adaptive cycle exists in organizations' strategy. Dimensions in the adaptive cycle are aligned with each other in each type of the strategies.
3) The study demonstrates how the level of IT outsourcing is associated with different type of strategies using Miles and Snow's typology.

6.2.2 Practical Contribution

The current study also makes an important practical contribution in a few aspects:

1) The results indicate that prospectors should outsource their IT while defenders should keep their IT in-house.

2) IT is closely related to strategy. Therefore, the role of IT should be viewed as an important and differentiating asset in supporting different strategies.
3) Annual reports are a good source to study strategies of organizations.

6.3 Limitations and Future Research Avenues

The first limitation of this study is its single use of secondary data. While the results indicate that archival data is useful in strategy research, it is only one aspect of the data. In the case of annual reports, description could be written differing from the underlying facts in order to serve publish relation purposes. A further study including both a survey and a secondary dataset would improve the quality of the results. Second, the analysis was performed on the sample of Canadian firms. It is questionable if the results can be generalized beyond this group. Finally, strategy was measured as a snapshot, rather than over a period of time. Especially, this study does not address the question of changing strategy. Another longitudinal study in this area could significantly improve the results and also help us better understanding strategy and IT outsourcing.

References

Ang, S., and Straub, D.W. (1998) Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry. *MIS Quarterly*, 22, 4, 535-552

Aubert, B.A., Patry, M., and Rivard, S. (1999) Impartition des services informatiques au Canada: Une comparaison 1993-1997 (chapter2.2) in Impartition : fondements et analyses, M. Poitevin editeur, Presses de l'Universite Laval, 203-220

Aubert, B.A., and Rivard, S., and Patry, M. (1996a) A Transaction Cost Approach to Outsourcing Behavior: Some Empirical Evidence. *Information & Management*, 30, 2, 51-64

Aubert, B.A., and Rivard, S., and Patry, M. (1996b) Development of Measures to Assess Dimensions of IS Operation Transactions. *International Journal of Management Science*, 24, 6, 661-680

Bergeron, F., and Raymond, L. (1995) The Contribution of Information Technology to the Bottom Line: A Contingency Perspective of Strategic Dimensions. *Proceedings of the Sixteenth International Conference on Information Systems*, Amsterdam

Bowman, E.H., and Constance, E.H. (2001) Does Corporate Strategy Matter. *Strategic Management Journal*, 22, 1-23

Chaganti, R., and Sambharya, R. (1987) Strategic orientation and upper echelon characteristics. *Strategic Management Journal*, 8, 393-401

Chan, Y.E., Huff, S.I., Barklay, D.W., and Copeland, D.G.. (1997) Business Strategic Orientation, Information Systems Strategic Orientation, and Strategic Alignment. *Information Systems Research,* 8, 2, 125-150

Cheon, M.J., Grover, V. and Teng, T.C. (1995) Theoretical Perspectives on the Outsourcing of Information Systems. *Journal of Information Technology*, 10, 209-219

Child, J. (1972) Organizational Structure, Environment, and Performance – The Role of Strategic Choice. *Sociology*, 6, 1-22

Chung, W., Chen, H., and Nunamaker, J.F. (2003) Business Intelligence Explorer: a knowledge map framework for discovering business intelligence on the web. *Proceedings of the 36th Hawaii International Conference on Systems Sciences*, Hawaii

Coase, R.H. (1937) The Nature of the Firm. *Economica*, 4, 386-405

Conant, J.S., Mokwa, M.P., and Wood, S.D. (1987) Management styles and marketing strategies: An analysis of HMOs. *Health Care Management Review*, 12, 4, 65-75

Conant, J.S., Mokwa, M.P., and Burnett, J.J. (1990) Pricing and performance in health maintenance organizations: a strategic management perspective. *Journal of Health Care Marketing*, 9, 1, 25-36

Croteau, A.-M., and Bergeron, F. (2001) An Information Technology Trilogy: Business Strategy, Technological Deployment, and Organizational Performance. *Journal of Strategic Information Systems*, 20, 2, 77-99

Das, H.R., Zahra, H.A., and Warkentin, M.E. (1991) Integrating the Content and Process of Strategic MIS Planning with Competitive Strategy. *Decision Sciences*, 22, 5, 953-984

Dube, L., and Pare, G. (2003) Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations. *MIS Quarterly*, 27, 4, 597-635

Gilley, K.M., and Rasheed, A. (2000) Making More by Doing Less: An Analysis of Outsourcing and its Effects on Firm Performance. *Journal of Management*, 26, 4, 763-790

Grover, V., Cheon, M.J., and Teng, T.C. (1994) An Evaluation of the Impact of Corporate Strategy and the Role of Information Technology on IS Functional Outsourcing. *European Journal of Information Systems*, 3, 3, 179-190

Grover, V., Cheon, M.J., and Teng, T.C. (1996) The Effect of Service Quality and

Partnership on the Outsourcing of Information Systems Functions. *Journal of Management Information Systems*, 12, 4, 89-116

Hambrick, D.C. (1980) Operationalizing the Concept of Business-Level Strategy in Research. Academy of Management Review, 5, 4, 567-575

Hambrick, D.C. (1983) Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. *Academy of Management Journal*, 26, 5-26.

Henderson, J.C., and Venkatraman, N. (1993) Strategic Alignment: Leveraging Information Technology for Transforming Organizations. *IBM Systems Journal*, 32, 1, 472-483

International Data Corporation. (1999) *U.S. and World Outsourcing Markets and Trends*, International Data Corporation

Mintzberg, H. (1973) Strategy-making in three modes. *California Management Review*, 16, 2, 44-53.

Hirschheim, R., and Lacity, M. The Myths and Realities of Information Technology Insourcing. *Communications of the ACM*, 43, 2, 99-107

Hirschheim, R., and Sabherwal, R. (2001) Detours in the Path toward Strategic Information Systems Alignment. *California Management Review*, 44, 1, 87-108

Johnson-Lindsay, A., and Lederer, A.L. (1999) Business Strategy, Staff Orientation, and Information Systems Performance. *Proceedings of the Fifth American Conference on Information Systems*, Milwaukee

Lee, J.N., and Kim, Y.G. (1999) Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation. *Journal of Management Information Systems*, 15, 4, 29-61

McFarlan, F.W. (1984) Information Technology Changes the Way You Compete. *Harvard Business Review*, 62, 3, 98-103

Miles, R.E., and Snow, C.C. (1978) *Organizational Strategy, Structure, and Process.* McGraw Hill, New York

Miles, R.E., and Snow, C.C. (1984) Fit, Failure, and the Hall of Fame. C*alifornia Management Review*, 26, 3, 10-28

Miles, R.E., and Snow, C.C. (1986) Organizations: New Concepts for New Forms. *California Management Review*, 28, 3, 62-73

Miles, R.E., and Snow, C.C. (1992) Causes of Failure in Network Organizations. *California Management Review,* 34, 3, 53-72

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

Porter, M.E. and Millar, V.E. (1985) How Information Gives You Competitive Advantage. *Harvard Business Review*, 63, 4, 149-160

Ranchhod, A., and Hackney, R. (2003) Evaluating IT in the Independent Financial Services Sector in the UK Taking Into Consideration Marketing Orientation and Strategic Typology. *Proceedings of the Ninth American Conference on Information Systems*, Tampa

Raymond, L., Paré, G., and Bergeron, F. (1995) Matching Information Technology and Organizational Structure: An Empirical Study with Implications for Performance. *European Journal of Information Systems*, 4, 3-16

Reich, H.R., and Benbasat, I. (2000) Factors that Influence the Social Dimension of Alignment Between Business and Information Technology Objectives. *MIS Quarterly*, 24, 1, 81-113

Sabherwal, R., and Chan, Y.E. (2001) Alignment Between IT and Business Strategies: A Study of Prospectors, Analyzers, and Defenders. *Information Systems Research*, 12, 1, 11-33

Segev, E. (1987) Strategy, Strategy-Making, and Performance in a Business Game. *Strategic Management Journal*, 8, 6, 565-577

Smith, K.G., Guthrie, J.P., and Chen, M.J. (1989) Strategy, size and performance. *Organizational Studies*, 10, 1, 63-81

Snow, C.C., Miles, R.E., and Coleman, H.J. (1992) Managing 21st Century Network Organizations. *Organizational Dynamics*, 21, 1, 5-20

Tan, F.B. (1997) Strategic type, Information Technology, and Performance: A Study of Executive Perceptions. *Proceedings of the Third American Conference on Information Systems*, Indianapolis

Teng, T.C. , Cheon, M.J., and Grover, V. (1994) Decisions to Outsourcing Information Systems Functions: Testing a Strategy-Theoretic Discrepancy Model. *Decision Sciences*, 26, 1, 75-103

Venkatraman, N. (1989a) The Concept of Fit in Strategy Research: Towards Verbal and

Statistical Correspondence. *Academy of Management Review,* 14, 3, 423-444

Venkatraman, N. (1989b) Strategic Orientation of Business Enterprises: The Construct and Its Measurement. *Management Science,* 35, 8, 942-962

Williamson, O. (1985) *The Economic Institutions of Capitalism.* Free Press, New York

Yin, R.K. (1999) *Case Study Research, Design and Methods.* Sage Publications, Beverly Hills

APPENDIXES

Appendix 1. The Concept of Fit in IS and Managerial Literature

When investigating the issue of alignment, researchers often refer to the concept of "fit" to illustrate its special property that separates alignment from mere combination. This chapter looks into the managerial literature to see what is usually implied by "fit" and how to operationalize the concept in empirical research. Venkatraman (1989a) developed a framework to analyze the fit construct. Six perspectives of fit were identified and discussed, including their theoretical meaning and requirement for analyzing themes. Two dimensions, degree of specificity and whether to anchor fit as a criterion, were used to develop the framework.

1. **Fit as Moderation.** This perspective is rooted in contingency theory. Fit is identified where the interaction between two variables predicts a third variable in a certain way. Regression analysis, including main and interaction effect and two and three way ANOVA are often used to establish this perspective of fit.
2. **Fit as Mediation.** This perspective specifies a certain intervening mechanism between independent variables and dependent variables. Tests of mediation are usually carried out with path analysis.
3. **Fit as Matching.** In this perspective, fit is defined theoretically as a match between two related variables. Fit is not specified by a criterion, as are the two previous perspectives. This kind of fit means that certain combination of levels of

both variables would have the best effect.

4. **Fit as Gestalts.** In this kind of fit, gestalts are defined as the degree of internal coherence among a set of theoretical attributes. Instead of looking into single factors, this perspective attempts to identify patterns or clusters. It is most useful to use this perspective when a large number of variables are involved. Multivariate statistical tools, such as cluster analysis and MANOVA are used to establish this perspective. The descriptive validity and predictive validity are the two main analytical issues regarding fit as gestalts. Descriptive validity requires that the gestalts be interpretable in terms of the theoretical positions implied by fit. To ensure predictable validity, gestalts have to be linked to an external variable, such as business performance.
5. **Fit as Profile Deviation.** In this perspective, fit is defined as the degree of adherence to an external specified profile. The critical issues involved in this perspective include building the ideal profile, adding multivariate dimensions, and using a baseline model to assess power of the test.
6. **Fit as Covariation.** According to this perspective, fit is defined as a pattern of internal consistency among a set of underlying related variables. And it can be best described through an illustration. The underlying variables are combined into a latent variable, which can have impact on the dependent variable.

The author suggests using multiple perspectives and within one research issue, instead of ranking the six perspectives. Moreover, the statistical methods should not be regarded as interchangeable without confounding the underlying theoretical meaning of fit.

Appendix 2. A Summary of Coding Results in Pilot Case Study

	Product Market Domain	Domain Maintenance	Way of Growth	Technology	Technological Buffer	Inside vs. Outside Directors
Aber Diamond (D)	"... our core jewelry business and remain committed to introducing gem stone intensive timepieces of the highest technical quality." (D)	"our mission ... is to source the finest gems and transform them into the finest quality jewelry available in terms of design integrity, materials, manufacturing and after-care services" (D)	"Exploration efforts ... have been stepped up this year in an effort to extend mine life and/or capacity" (D)	"Engineering performance, particularly related to the water retention dyke that was the fundamental challenge of the project, has ... been accomplished within budget ..." (D)	"having acquired control of one of the great names in luxury retail" ... "our participation in the most lucrative "bookends" of the diamond trade: mining and retail." (D)	5:2
African Gem Corp. (P)	1) Rough Tanzanite(a blue gemstone); 2) Polished Tanzanite; 3) Tanzanite trading; 4) Affiliated	"Our competitive advantage ultimately lies in the source of the product (our tanzanite mine) and our	"five year ago few people heard about Tanzanite, ... we established a market through advertising and	"has embraced the concept of branding as the nucleus of our campaign." (P)	One whole chapter dedicated to employee recruiting and development.	3:4

	program with luxury brands. (P)	understanding of branding and marketing. We cannot compete in cutting and polishing on a large scale. India's beneficiation industry, amongst others, is decades old and the cost of labor is significantly more competitive" (P)	marketing ..." "To inform and educate the industry through jewelers store sales staff seminars" (P)		Sustainability Report: "health, safety, and security"; "managing HIV/AIDS"; "community development"; "social investment initiatives" (P)	
Corona Gold (A)	Gold mining, tire recycling. (A)	"Corona is involved primarily in the acquisition, exploration and development of mineral resource properties in Canada." (D) "the Company, as a result of completing its plan of arrangement with	"... we look for acquisition opportunities in gold mines to strengthen our position..." (D) "... when the stock market environment did not support aggressive mineral exploration and financing, the Company pursued	"Drilling efficiently yielding positive results that, in the view of the Company's exploration team, significantly increased the number of contained ounces of gold in the mineralized zone." (D)	"... we pay special attention to promoting the health, safety and welfare of its employees and to the protection of the environment." (P)	1:4

		Unisphere Waste Conversion Ltd. in 2002, holds approximately 3.8 million shares in that corporation." (P)	other business opportunities to increase shareholder value." (P)			
Diamond Resources (D)	Diamond exploration and mining in Canada	"... we determined to focus on diamond exploration and focus our operation in Canada ... with our strong technical team" (D)	"... to implement our focus, we acquired our interests in Franklin and Otish projects" (D)	"... new mines were officially opened in February and has reduced mining costs"	N/A	4:4
Firestone Diamonds (D)	Diamond mining and exploration. (D)	"Firestone's key competitive advantage is its substantial intellectual property database and expertise from more than forty years of diamond exploration worldwide." (D)	"... we increased the scale of the Company's exploration activities and to work with joint venture partners on a selective basis to allow us to finance and accelerate the development of an expanded	"...due to forty years of technological excellence, ... operating cost savings are expected to be substantial and to pay for the additional capital costs during the first two years of operation." (D)	"... we will depend on our intellectual property database and use them to identify attractive, large scale exploration projects that have the potential to yield significant	4:2

			portfolio of exploration projects." (D)		reserves of gem quality diamonds." (D)	
Potash (D)	Potash Mining	"Our excess potash production capacity, held in abeyance for increased demand, proved to be a prime factor in our 1997 financial results." (D)	"... it can increase production as markets grow and further reduce its costs per ton." (D)	"Strong reserves and low-cost, efficient operations are other PCS strengths." (D) "We have in excess of five million tons of low-cost Saskatchewan potash production capacity." (D) "Modified hoisting systems installed at Rocanville and Allan improved reliability and maintenance costs." (D)	"Solidly established in potash, in 1995 the Company entered the phosphate industry by purchasing Texasgulf, North America's premier phosphate producer." (D)	3:12
Southwestern Resources (D)	Gold and silver mining. (D)	"The Agreement with Anglo has reduced shareholders'	"... continue our exploration and mining effort in new places like	"The initial exploration is generally low cost and in most areas,	"With the rebound of zinc prices to above 57 cents per	4:2

		risk considerably on this Property and work commitments by Anglo will ensure that an efficient program will be conducted to test the economic significance of this mineralization." (D)	China, Peru, and Canada" (D)	once properties are advanced to the drilling stage..." (D)	pound, management of the Company has decided to initiate the Accha-Yanque Zinc Project located in southern Peru." (D)	

Appendix 3. A Summary of Coding for Miles and Snow's Strategy Typology

	Product Market Domain	**Domain Maintenance**	**Way of Growth**	**Technology**	**Technological Buffer**	**Inside vs. Outside Directors**
Alcan (D)	Aluminum mining and processing. "Alcan's ongoing strategic priorities are to continue the implementation of our Full Business Potential program, to maintain a proactive role in promoting aluminum as the material of choice..." p2	"Our successful initiatives in critical areas such as cost reduction ..." (D) p3	"... we have attained one-third of our targeted $300 million, after tax, in productivity improvements." (D) p5	"... new mill was officially opened in February and has reduced milling costs" (D) p4	"For instance, we have forged partnerships with key customers that will lead to further increases in the use of aluminum by important global industries." (D) p5	5:7
Allstate (D)	Insurance	"First and foremost, we're strengthening the Allstate customer experience. For two years we've been focusing on the best ways to provide a	"We will also be expanding our life and savings business, starting with our own auto and homeowner customers." (D)	"An easier renewal process and increased contact with key customers to encourage new policy	"Seamless phone links from agents' offices to call centers where sales representatives can answer	5:4

		unique insurance experience to our customers." (D) p9	p7	purchases and improve retention rates." (D) p7	customer questions 24 hours a day, seven days a week." (D) p12	
BC Lottery (D)	Lottery Gaming	The Corporation depended on the web to provide customer access to most of the information needed. Also its Customer Service Dept. answered more than 36 thousand calls a year. (D) p7	"... we are experiencing a transition from a lottery company to a broader business encompassing casinos and electronic and linked bingo." (D) p4	The lottery is operated on a computer system whose objective is to "operate in the most efficient way". (D) p6	"In March 1997, BCLC was giving responsibility to conduct and manage slot machines and electronic and linked bingo." (D) p2	6:2
Cadillac Fairview (D)	Commercial Real Estate	"Completed acquisitions of new or additional interests in five dominant retail centers and eight office buildings at an average unlevered yield of 9.5 percent and at prices well below replacement	"Increased occupancy and rental rates across our entire portfolio of retail and office properties." (D) p7	"We purchased these interests below replacement cost. Given our experience in repositioning and leasing prime space, and the	"A $17 million redevelopment program at Tillicum Mall in Victoria, British Columbia that will include the relocation of Zellers into the former Eaton's store and conversion of	7:6

		cost." (D) p5		increasing demand for office space in the face of diminishing supply in major markets, we expect these properties to generate increased yields in the years ahead." (D) p14	the shopping centers second level into space for large-format retailers. In addition, there are plans to add a free-standing cinema." (D) p9	
Canadian National (D)	Railway	"Opened our centralized Customer Support Centre in Winnipeg." (D) p2 "We will continue to contain our costs, not just by downsizing and centralizing, but also through innovative purchasing tactics	"We will focus our energies and resources on doing what we do best: operate a long-haul rail network." (D) p6	"Achieved $30 million reduction in the cost of materials and services." (D) p2	"In 1996, we consolidated three under-utilized locomotive and six heavy equipment railcar maintenance facilities in eastern Canada into Toronto, for annualized savings in excess of $30	5:6

		and improved asset utilization." (D) p6			million. We also consolidated CN's three work equipment maintenance shops into Winnipeg. The acquisition of sophisticated, low-maintenance equipment, combined with additional repairs in the field, has reduced the level of shop maintenance." (D) p6	
Credit Lyonnais (D)	Banking, Financial Services	The Bank "pledge to work tirelessly to improve the quality of our services to our customers." (D) p3	"Through the pro-active efforts of our staff and the measures taken, we have cut our operating expenses and boosted productivity,	"We have even managed to amplify this trend, improving our cost-to-income ratio by more than three points." (D) p1	"A worldwide customer database has been compiled and is accessible via the Crédit Lyonnais intranet. The resulting	5:13

			while reducing our risks." (D) p2 "The introduction in 1997 of a worldwide business line dedicated to major corporations and institutions has enhanced Crédit Lyonnais' responsiveness to these customers' specific needs." (P) p6		synthesis of available information on each customer group is creating opportunities for the sale of a wider range of products." (D) p5	
Dominion Textile (D)	Fabric Producer	"Price pressure in the more basic denim sectors will likely continue but the current inventory overhang throughout the industry should slowly clear as	"During the latter part of 1997, Klopman also began to benefit from new product introductions focused on niche markets	"Swift responded to these challenges by initiating extensive cost reduction programs in manufacturing and	"The Dominion Nonwovens Group, consisting of Nordlys, Poly-Bond, and Dominion Nonwovens Sudamericana, was established,	5:7

		the year progresses." (D) p6	in which its special competencies in dyeing and finishing can be exploited." (P) p8 "Poly-Bond has continued to add capacity and to increase manufacturing productivity." (D) p6	administrative expenses and exited the year having realized $20.0 million of annualized margin improvement." (D) p5 "... its profitability was significantly higher as a result of increased efficiencies, reduced fixed costs and lower cost raw material substitution." (D) p8	integrating the corporation's nonwovens activities on a strategic, managerial and geographic basis." (D) p8	
Dover Industries (D)	Food processing and food packaging. "Dover Industries	"... increased production during the year and with the completion of	"A capital investment and cost reduction plan was started	"The automation of the Cambridge	"Robinson Cone improved performance in 1997 as a result	7:5

	concentrates its manufacturing in two distinct business segments – Food Products and Paper and Plastic Products" p2	the new and improved flour packing equipment reduced labor costs considerably." (D) p3 "The quality of the Western and Ontario wheat crops and by-product returns helped to improve operating income during the year." (D) p4	in the late summer, a new sales manager was engaged and an improved quality product from the plant was coming on stream by yearend." (D) p4 "Volume and margin pressure was offset by continued cost reduction and improved plant efficiency." (D) p5	flour mill's packaging floor was completed in 1997. The mill is now reaping the rewards of improved efficiencies in the bagged flour operations." (D) p4	of diligent focus on cost reduction and efficiency gains." (D) p2	
FCA (D)	Account Receivable Management	"FCA has been successful in bidding on and winning government contracts at both the federal and provincial level." (D) p5	"In spite of successes in improving operating efficiency, the Company fell short in bringing in new business,	"FCA has been in transition over the last two years – a transition defined by consolidation,	"Operations in the Maritime provinces were consolidated into Moncton, New Brunswick. The Calgary and	5:3

			primarily in the U.S. market." (D) p3	reorganization and the implementation of efficiency measures in its North American operations." (D) p5	Winnipeg branch offices were closed and operations merged with other branches." (D) p6	
GEAC (D)	Software	"In the coming year, the Division plans to begin re-engineering its products to take advantage of new technologies as used in other Geac products." (D) p6	"During Fiscal 1998, the Division will continue to focus on long-term customer retention and help its customers leverage their investment by strengthening its core applications." (D) p8	"...the Division's advertising, circulation, marketing and complementary products maximize efficiency and profitability of papers worldwide." (D) p6	"Geac acquired Dun & Bradstreet Software Services, Inc., of Atlanta, Georgia (DBS) and its worldwide affiliates effective November 1, 1996. The undertaking was managed to: • Dramatically cut expenses. • Continue most of the more than $200 million annual	4:3

					maintenance renewal stream." (D) p4	
Gennum (D)	IC Manufacture	The Company repeatedly contributed its success to information acquired from customer service. (D) p4	"The DynamEQ®-II, the second generation of an advanced hybrid product introduced in 1996, has been especially well received by the industry as it provides greater functionality for the complex miniaturized hearing instruments now being introduced in the market." (D) p2	"Technology and process improvements are ongoing in Gennum's in-house wafer fabrication facility, the assembly, packaging and test areas." (D) p6	"One of the greatest challenges , which faced the company during the year was the recruitment of skilled and experienced professionals." (P) p3	4:3
Goodyear (D)	Tire Production	"...to be One Revolution Ahead signifies an uncompromising commitment to	"Investments continue in Ultra-Tensile Steel, the strongest	"New, efficient warehouse and distribution	"A major global alliance with Sumitomo Rubber Industries/	9:4

		technology, cost and quality that brings products to the market for a new generation of technically sophisticated drivers..." (D) p2	tire reinforcement material." (D) p10	facilities were completed or under construction in Luxembourg, Germany and Turkey." (D) p7	Dunlop was announced in February, which will restore Goodyear as the world's largest tire company and recapture the top position in the tire industry." (D) p2	
Greyhound (D)	Public Transportation	"Increasing fleet utilization and decreasing costs is a continual process, driven by local and regional needs." (D) p9	"... a simultaneous repositioning was accomplished with the addition of the Greyhound Air service to Greyhound Canada's transportation services." (D) p4	"For the last three years, Greyhound has developed computer technology to aid its analysis of schedules and routes to increase overall efficiency." (D) p5	"Greyhound allows them to arrange their travel through one source by combining ground and air seamlessly." (D) p7	2:3
Haley (D)	Aerospace	The Company's surge in sales was largely accredited with its good	"Areas, which were upgraded include the molding lines	"Presto has completed a reorganization of certain of	"... the Company entered into a 50/50 joint	3:3

		customer relationship management with big corporations such Boeing and GM. (D) p4	and melt room. A portion of the facility was reconfigured to allow for the production of physically larger castings utilizing the cellular manufacturing technique." (D) p4	its production areas, which has resulted in a more efficient work flow." (D) p8	venture agreement with Amcan Castings Limited of Hamilton, Ontario, to establish a high pressure magnesium die casting facility to make parts for the automotive industry." (D) p8	
Hubbard (D)	Fabric Processing and Manufacture	"The company is known for its manufacturing of high quality fabrics and the market is very receptive to the company's new orientation." (D) p4	"...the plant's higher level of activity does not result from the recruiting of new customers but from an increase in the volume of the most important customers who are very often exporters." (D) p5	"The project also includes the changes in the layout of the finishing department in order to enhance its productivity." (D) p4	"... the company acquired $ 240,000 worth of knitting machines." (D) p2	4:3

Ideal Metal (D)	Aluminum Production	"The emphasis is on offering customers innovative solutions to the special challenges they face in their specific markets. In addition to reliable metal supply, the focus is on understanding the customer application and on value-added services." (D) p4	"Ideal Metal continues to focus exclusively on the distribution of non-ferrous metals and on serving all market segments." (D) p6	"One of the major strengths of the Ideal Metals Group has been the commitment and capability of its staff." (P) p5	"In 1987, Ideal Metal acquired A & M Non-Ferrous Metals in Vancouver, British Columbia, meeting its objective to become a broad-based company serving the Canadian market from coast to coast." (D) p4	5:3
Jean Coutu (D)	Pharmaceutical Distribution	"... in particular, the setting up of areas designed for confidential consultations between pharmacists and customers and a new layout for cosmetic	"In addition to the opening and renovation of some 30 outlets, the 1996-1997 fiscal year was marked by the acquisition and integration of five Mayrand	"The Jean Coutu Group earmarked $7.5 million for a new phase in the construction and layout of its distribution centre located	"Furthermore, the strategic alliance between The Jean Coutu Group and Uniprix made it possible to finalize the largest transaction in	6:6

		departments were extremely promising initiatives judging by the very favorable reaction on the part of consumers in outlets where they are already featured." (D) p5	outlets." (D) p4	in front of the company's head office in Longueuil." (D) p4	the history of the retail pharmacy industry in Quebec: the acquisition of all Cumberland shares and the sharing of its points of sale." (D) p4	
Newalta (D)	Waste Management	"The relative impact of transportation on the total cost to the producer will be reduced and, as a result, the effective market area for our facilities will expand beyond the current 100-kilometre radius." (D) p8	"... the Company continued to focus on internal growth and productivity improvements." (D) p4	"The development of processes to increase recovery efficiencies and to improve the quality and consistency of the products will create long-term competitive advantages." (D) p4	"With the mid-year acquisition of TriWaste, Newalta expanded its collection and recycling operations to include waste antifreeze, oil filters, waste solvents, and related materials." (D) p10	5:2
Northwest Territories Power (D)	Electricity Production	A series of customer service program to	Adding new plants worth of $5 million to	Deployed a series of cost reduction	Employee training program. (P) p9	5:2

		acquire feedback. (D) p7	increase production. (D) p3	program, resulting in saving of $1 million. (D) p5		
Quebecor (D)	Publishing	"The Company, as anticipated, reaped the benefits of the synergies and savings arising from the acquisition in March. With the combined effect of the rationalization of overhead expenses, a sizeable drop in its recycled fibre supply costs, and the increased productivity at some of its mills, Donohue generated pre-tax savings of approximately $43 million, on	"In 1996 Quebecor Multimedia acquired five new firms and the company now comprises six production facilities, a distribution center and an electronic publishing center." (D) p5	"This move not only reduced paper consumption substantially, but also provided an opportunity for the paper to modernize its graphic design." (D) p6	"The acquisition of an interest in Joncas Postexperts Inc. in early 1996 created significant synergy between this company and various other Quebecor Communications Inc. divisions. Joncas Postexperts Inc.'s activities include postal preparation, computer service, brokerage and administration of mailing	8:4

		an annual basis, ten months after the transaction." (D) p13			lists, fundraising campaign management, storage, and inventory management." (D) p8	
Potash (D)	Fertilizer	"Our excess potash production capacity, held in abeyance for increased demand, proved to be a prime factor in our 1997 financial results." (D) p2	"... it can increase production as markets grow and further reduce its costs per ton." (D) p3	"Strong reserves and low-cost, efficient operations are other PCS strengths." (D) p4 "We have in excess of five million tons of low-cost Saskatchewan potash production capacity." (D) p4 "Modified hoisting systems installed at	"Solidly established in potash, in 1995 the Company entered the phosphate industry by purchasing Texasgulf, North America's premier phosphate producer." (D) p3	3:12

				Rocanville and Allan improved reliability and maintenance costs." (D) p5		
Tecumseh (D)	Air Compressor	"Our challenge will be to work hand in hand with our customers to establish fair and equitable pricing, which provides us with the means for continuous research and product improvement." (D) p2	"The combination provides Tecumseh with a rare balance of refrigeration appliance compressor capability along with unitary air conditioning compressor manufacturing and distribution throughout India. We have named the new company Tecumseh India Private Limited." (D) p2	"The necessity to increase operating efficiency and reduce costs is present in all our planning and in our customer negotiations." (D) p1	"It is clear that the future of Tecumseh Products Company is dependent to a substantial degree upon our ability to build a cohesive global family of cooperating manufacturing and distribution entities." (D) p2	6:3
Tembec (D)	Forest Products	"To maintain its	"The focus of	"The Group	"it is growing to	6:7

		leadership position in the industry, the Group will focus its strategy on reducing production costs, raising profit margins by increasing its products' added value, and delivering more efficient customer service." (D) p5	the Group will be to control costs and to consolidate its market position. Resin and Lignin will continue to expand their market share. And R&D will continue to concentrate on fermentation optimization, high-performance resins, and lignosulfonates. " (D) p10	strategy will be to continue to implement the aggressive 5 year cost reduction and capacity optimization at each of its pulp manufacturing sites." (D) p8	meet the challenge of the future with the total commitment of all our people. It is: "A company of people building their own future"." (P) p2	
Toronto Hydro (D)	Energy Services	"Local distribution companies operate under a Performance Based Regulation regime in Ontario that ensures a high level of customer service,	"In 2003, we invested $122 million in capital projects on our distribution system and operations." (D) p12	"... we put even greater focus on efficiency improvements and cost containment." (D) p6	Implemented an ERP system to integrate very functions of the Company. (D) p23	6:5

		while requiring steady efficiency and productivity improvements." (D) p7				
Trimark Financial (D)	Mutual Fund	"These programs are intended to help these advisers add value and provide sound advice to their clients and build mutually satisfying long-term relationships." (D) p9	"But as a company, we remain single-minded and focused on using our extensions to complement and build on our expertise and on our core business: managing and distributing investment products and related services to the Canadian public." (D) p9	"Nevertheless, the quest for improvements continues; we are already well engaged in a process to identify further modifications to these documents that will make them more friendly for their intended audiences." (D) p16	"The November 1996 acquisition of Bayshore Trust Company, now known as *Trimark Trust*, provides additional products and services to retail and institutional investors." (D) p3	7:3
UAP (D)	Distribution, marketing, and rebuilding of replacement parts and accessories for automobiles, trucks, and industrial	"The UAP/NAPA Group is recognized for quality parts, timely delivery and competitive Prices." (D) p2	"Five TRACTION stores were added: in Prince Albert and Regina through acquisitions,	"UAP creates value through efficient networks." (D) p5 "... we	N/A	5:5

	machinery.	"Future success will rest on market knowledge, more efficient distribution" (D) p4	and in Kamloops, Ottawa and Dartmouth through start-ups. Three new sales locations are planned for 1998 to round out the cross-Canada network." (D) p3	continued to implement measures aimed at improving existing operations." (D) p4		
Union Gas (D)	Natural Gas Storage and Transportation	"The delivery business would remain regulated and focus on offering safe, reliable and efficient distribution, storage and transmission services to natural gas customers. The retail energy services business, which provides customers with	"Our distribution systems were extended to 23 communities previously unserved by natural gas." (D) p6	"In this market we seek to meet individual customer requirements for energy efficient technologies, emissions reduction, cost savings and the substitution of gas for other fuels." (D) p8	"The amalgamation will further, by about $2 million a year, the efficiencies achieved through our shared services initiative, which is providing ongoing annual savings to customers of approximately	6:2

		value-added products and services such as appliance sales and rentals, financing, service work, energy retailing and energy management, would eventually be pursued outside of regulation in a fully competitive market." (A) p5			$14 million a year." (D) p5	
Upton (D)	Oil Exploration	"New discoveries in the Gainsborough area promise to add to the production base. The exploitation of existing production, such as infill drilling at the Parkman and Star Valley pools in 1996, consistently adds	"Upton's focus on the Williston Basin continues to provide low operating costs and the opportunity to efficiently add reserves." (D) p6	"The commitment to shareholders is to provide consistent growth of long term reserves, coupled with efficient production management, to build	"In July 1996, Upton purchased production from Crestar Energy Inc. primarily at the Willmar and Alida pools. Upton's existing high working interest and operatorship in the area added value to the	4:4

		to the reserve base." (D) p9		predictable earnings and enhance shareholder value." (D) p5	Crestar acquisition. The acquisition of these assets serve to offset the risk inherent to reserve additions through Exploration. (D) p9	
Air Canada (A)	Canadian market (stable) and international market (new). "Air Canada continued its strategy to diversify its transportation revenue base by expanding services in selected international markets while moderating the growth in domestic capacity." p3	"Improving customer service is a key Objective" (D) p3 "The leisure market wants top value, which prompted last year's launch of Websavers and World Seat Sales" (D) p4 "... we have focused on launching new or unique routes, creating a nonstop or	"We launched more new Open Skies routes to the US increasing our market share ..." (P) p3 "Our new non-stop route from Toronto to Osaka is just the first of what should be..." (P) p4 "The founding of Star Alliance last May was a landmark	"We have made much of Air Canada having one of the youngest and most technically advanced and efficient fleets in the industry." (D) p4	"Integrating our services with those of quality airline partners." (D) p6 "took another important step with our decision to buy eight new wide body Airbus A330 and A340 aircraft." (P) p6 "added to an already formidable lineup	3:10

		direct service where there was none previously," (P) p4 "Air Canada pioneered the hub busting concept, using small Canadair jets to launch short haul routes under Open Skies." (P) p2	achievement for Air Canada" (D) p3		of partners that includes the top three car rental companies, and several of the world's leading hotel chains." (D) p8 "Constantly renewing the fleet even as we expand makes a strong statement to our customers and alliance partners about the quality we put behind our brand." (P) p6	
Bank of Montreal (A)	Diversified Financial Services	"We have made more than $2 billion of new strategic investments over the past several years without interrupting our	"Another major ingredient of our strategy that augurs well for sustained, consistent earnings growth is the focus we place	"... the new PCFS will become the platform for the cost-effective delivery of the Bank's core products and	"As part of its strategic plan, Bancomer will identify or create scale economies around businesses with cross-	2:15

		stream of record earnings and ROE." (P) p4 "PCFS has also introduced a new pricing strategy and has begun to reshape the retail distribution system to provide greater accessibility and customer choice, as well as reducing transaction costs." (D) p8	on diversification: diversified geographic markets, diversified lines-of business and diversified customer segments." (P) p5	services." (D) p9	border operations that can benefit from Bank of Montreal's unified continental capabilities." (D) p4	
Bank National (A)	Financial Services, Investment Banking, Securities Brokerage	"In concrete terms, the Bank has diversified into securities brokerage, mutual funds and insurance." (P) p4	"This year, the Bank opened its first private banking centre, which offers personalized services to a very specific client segment: the owners	"the Bank launched Operating Excellence, a program aimed at reducing operating expenses." (D) p6	"the Bank had earlier combined its own Corporate Banking division with Lévesque Beaubien Geoffrion's Institutional	6:18

			and officers of our client businesses." (P) p5		Financing Services." (D) p2	
Cara (A)	Branded Restaurant, Institutional Catering	"... we developed Toast! a new cafe concept combining Second Cup coffees with an innovative food menu creating new twinning opportunities, particularly with Swiss Chalet." (P) p6 "While the food business is mature, new growth segments by changes in technology, economics and demographics." (A) p14	"Developed in 1997, Toast! is an upscale cafe. focused on superior food and service Ð featuring Second Cup coffees and Swiss Chalet rotisserie chicken among the menu items." (P) p3 "By creating these two segments, we aim to maximize synergies and operating efficiencies among related businesses, become more responsive to	"We do not take our people human resources focus with new development programs. Most important, culture of respect and integrity." (P) p8	"During the year, we built on our successful twinning and multiple branding approaches Ð and on increasing synergies among our businesses." (D) p4	3:6

			opportunities, reduce corporate overheads, and provide operating businesses with the resources needed to meet their objectives." (D) p5			
Chrysler (A)	Auto Manufacturing, Auto Financing	"We are harnessing information to enhance our customer relationship management." (D) p8 "We are the first to put an attractive and viable range of fuel cells vehicles on the market." (P) p9	The Company is going into auto market in East Europe, Asia, and other new places. (D) p9 "... we invested $54 billion in developing new products and new technologies." (D) p10	"To maximize efficiency, same plants were used to build separate production lines" (D) p7	Merged with Mercedes Benz to bring together "all key organizational functions." (D) p3	7:13
Cameco (A)	Uranium and Gold Mining	"Our core business is uranium	"At the same time, Cameco's share of	"Cameco and other producers will	"Cameco values the contribution of every	1:10

		production and the supply of services to the nuclear industry. During 1996, Cameco moved toward its vision of increasing its presence in the uranium industry and of becoming a recognized gold producer." (A) p5	production reached 16.6 million pounds U3O8—the highest in the corporation's history—and output of conversion services again exceeded 10,000 tones." (D) p3 "Construction at the Kumtor gold operation in Kyrgyzstan was virtually complete by the end of 1996 and commissioning of the mill was under way." (P) p6	continue to expand and invest in new mines such as McArthur River and Cigar Lake to meet long-term needs." (A) p13	employee. We seek strong relationships based on honest communication s with employees and their families, customers, shareholders and suppliers." (P) p1	
Cominco (A)	Mine Development	The Company's strategy is to develop every	The Company Participated in development of	The Company claims its success is due	The Company acquired Sumitomo	1:7

		quality ore body rather than concentrate on any specific ones. (P) p5	new gold and zinc mines, in addition to existing copper, lead and silver ones. (A) p2	to its "ability to locate and explore new mines". (D) p8	Group to explore the Pogo gold property. (D) p6	
Imperial Oil (A)	Crude Oil Production, Natural Gas Production, Other Chemicals	"In petroleum products, our strategy is to increase profitability by shifting our mix of sales towards market segments that provide higher value." (P) p6	"We are preparing an application to develop three more phases, which we expect will increase production by an additional 30,000 barrels a day at the turn of the century." (D) p3	"The nature of our business requires that we stay focused on improving those aspects of our operations that we can control." (D) p4 "The first of these priorities, execution excellence by the most capable people, is critical to success in every aspect of our	"Imperial is the country's largest producer of crude oil and a major producer of natural gas. It is also the largest refiner and marketer of petroleum products – sold primarily under the Esso brand – with a coast-to-coast supply network. As well, the company is a major producer of petrochemicals. " (D) p3	4:5

				business." (P) p5		
Manulife (A)	Life Insurance	"Investment in technology has also been maintained at a very high level so as to deliver customer service in a convenient and cost-efficient manner." (D) p5	"Where we once had only one line of business that was increasingly vulnerable, today we enjoy three robust and rapidly growing businesses." (P) p6 "Distribution capacity in Canada was considerably expanded with a number of new marketing alliances." (D) p4	"Investment in technology has also been maintained at a very high level so as to deliver customer service in a convenient and cost-efficient manner." (D) p5	"In November of 2000, we made available a share ownership plan enabling employees to purchase stock in the Company." (P) p10	3:15

Northern Telephone (A)	Telecommunications	"The continuing high level of service delivered to our customers throughout this period of profound change is a testimonial to the professionalism and service ethic of our employees." (D) p3	"Northern Telephone's newest line feature, Voice Mail, was introduced to individual line business and residential customers in Timmins and Cochrane during 1996 and is growing rapidly in popularity." (P) p5 "Northern Telephone's Internet link, NT.NET, established itself as a major force in the Northeastern Ontario market." (P) p6	"Our continuous improvement philosophy guides the company to improve internal processes, to reduce waste, rework and costs, and be more efficient and effective in delivering customer service." (D) p4	"The "Employees" pillar will develop our people and culture to be our primary competitive advantage" (P) p4	2:9
SNC (A)	Engineering	"Further to our	"These results	"We	"During the	3:8

	Construction in Various Industries	international presence, we opened two new representative offices: one in South Africa, a rapidly growing market, and the other in Brazil. We are thereby better positioned to take advantage of opportunities in these regions, notably in the mining and metallurgy sector." (P) p4	are attributable in part to our decision to focus on selected niches in which we have recognized expertise, such as turnkey construction and large project management." (D) p4 "We pursued our strategic plan during the year by reinforcing and diversifying our financing capabilities." (P) p8	complement this know-how with international experience in the execution of both traditional engineering, procurement and construction management contracts as well as turnkey lump sum and concession-type projects, increasingly with financing included." (A) p9	year, we acquired Pellemon, a company specializing in the pharmaceuticals and biotechnology sector." (D) p4	
Videotron (A)	Cable services, electronic games, pay TV, internet service.	"... cable television remains its core market." (A) p2 "... the Company	"The consumer now has a choice between a lower cost basic tier and an extended basic	"The cable market is composed mainly of two types of users, distinguished	"The offering of new telecommunications services, packaged with cable services,	4:7

		intends to position an increasing number of cable services to meet the various usage profiles of consumers." (A) p2 "Vidéotron continued the massive upgrade program for its local residential network, which was launched in 1996." (efficiency focused) (D) p4 "The Company began fiscal 1998 with the introduction of a new tier of cable television services made possible by the availability of four new French-	service, with eight more channels, for a slightly higher monthly charge." (A) p3	among other things by their attitude towards new technologies. The first type fears or distrusts new technologies, while the second appreciates them." (A) p4	represents a major commercial advantage, distinguishing Vidéotron from its competitors." (D) p5	

		language specialty channels." (P) p4 "New and enhanced products and services are being developed, along with bundling and pricing strategies." (P) (D) p5				
Alberto Culver (P)	Packaged Consumer Goods	"... the lifeblood of the Alberto-Culver Company has been the development of new products with powerful brand names" (P) p6	"... we launched Advanced Alberto VO5 premium priced shampoos, patented conditioners and treatments." (P) p6 "While new products are important, we have also shown an enduring ability to grow and	"Internationally, we grew our product portfolio internally and through acquisitions." (P) p8	"Important in all this news is the fact that we are willing to search for and develop ideas whatever their source." (P) p8	3:13

			strengthen brands that have been in our portfolio for many, many years." (A) p6			
Biomira (P)	Pharmaceutical Devices	"The first step in establishing a market presence occurred in April, when our TRUQUANT® BR™ RIA breast tumor marker test became the first and only product of its kind to be approved for marketing by the US Food and Drug Administration (FDA)." (P) p2	"Among our 1997 priorities is further exploration of peptide-based vaccines and other innovative strategies for immunotherapy of cancer." (P) p5	"Biomira has the option of pursuing a number of complex tasks in parallel rather than in sequence." (P) p4	"The company maintains links with the University of Alberta and with Edmonton's Cross Cancer Institute, one of several internationally recognized research and treatment centers, which collaborate in clinical trials and other aspects of research and development." (P) p1	3:5

Bombardier (P)	Airplane, Public Transportation	Several new aircraft were rolled out to serve various new market segments. (P) p7	The Dash 8 Series 400 plane was developed and began commercial service. (P) p7	The Company's development technology will continue to focus on innovate and create new products. (P) p7	Funding was provided to schools and universities for the training of new engineers. (P) p9	3:15
Hawker Siddeley Canada (P)	Mining, aerospace, leasing, medical care.	"Following the sales of its mining and sawmill equipment operations in August 1995 and January 1996 and of its aerospace and railcar-leasing operations in May and July 1996 the Company entered 1997 with its shareholding in BeaconEye Inc. as its only interest in an operating unit." (P) p2	Sale of old equity and in search of new ones. p4	N/A	N/A	1:5
Laurentian Bank	Personal and	"The acquisition	"To take	"Laurentian	"The Bank	4:15

(P)	Commercial Banking	of Trust Prêt et Revenu operations in June 1996 brought us major advantages in Trust, Private Banking and Funds Management." (P) p3	advantage of these trends and position itself in the new markets, Laurentian Bank is focusing on five broad areas of new development." (P) p3 "We have also created a niche in Brokerage Operations and Capital Markets, where a new team of institutional brokers has developed a solid track record." (P) p4	Bank is making major investments in technology and training to create future development. " (P) p3 "The Car Financing Centre created in 1995 is now in place across Quebec." (P) p6	continued, in 1996, to develop training and incentive programs directing its employees towards their new role as financial advisors." (P) p4	
Northrock Resources (P)	Crude oil and natural gas.	"Northrock's entry into West Central Alberta was established ... in	"Natural gas production in West Central Alberta has a high heating	"With this strong technical support, we have	N/A	2:4

		August 1996.This transaction positioned Northrock with a considerable opportunity base in this prolific, liquids-rich natural gas producing area." (P) p4	value and has a liquids content of up to 100 barrels per million cubic feet of natural gas. As a result, these properties attract high operating netbacks." (Rationale to enter new market.) (P) p5	identified opportunities to test deeper horizons. This exposure to deeper, higher risk targets is a significant expansion of our overall risk portfolio ..." (Use technology to innovate) (P) p5		
Pe Ben (A)	Oilfield services Transmission pipeline Bulk petroleum transportation.	"... ventured into and out of a variety of operational areas such as brick manufacturing, civil construction and engineering." (P) p3	N/A	N/A	"... the company diversify into serving many areas of the industry, including the upstream, downstream and transmission segments of the market." (D) p4	2:5

					"People are the power behind Pe Ben's growth." (P) p6	
Provigo (P)	Food Retail and Distribution	"In fiscal 1997, we introduced Maxi & Co., a new format designed to respond to consumers' desire to do all their weekly shopping under one roof." (P) p3	"During the past few years we divested ourselves of Consumers Distributing, Sports Experts, Top Valu and our American operations." (P) p5	"Private label products are also an important part of the supermarket reinvention. Pioneered in the late 70's, private label growth in the past has been erratic." (P) p9	"Provigo recognizes that reinventing its food retailing business cannot be accomplished without continuous training of its management and staff." (P) p13	4:7
Thomson (P)	Legal and regulatory publishing, healthcare and financial services information, newspapers and leisure travel.	"We acquired Computer Language Research, a leading provider of tax compliance software, thereby broadening our offerings to tax professionals."	"We significantly increased our reinvestments in the enhancement and creation of new information/publishing products and services with a	"... we are increasingly innovative in our use of Technology as a revenue-producing tool..." (P) p6	"... superior management and staff. They are our most valuable resource – our ultimate competitive advantage." (P) p3	9:8

		(P) p2 "... divesting 32 non-strategic businesses for total proceeds of $393 million." (P) p4 "... the acquisition of Fritidsresor AB, the Nordic region's second largest air-inclusive holiday operator, was completed." (P) p5 "We operate in a multiplicity of marketplaces, both product and geographic, and this diversity is one of our greatest strengths." (P) p6	particular emphasis on electronically-delivered products." (P) p4		"West Publishing Company, acquired in June 1996 for $3.4 billion and our largest acquisition ever, was successfully integrated with our existing US legal information/ publishing interests." (D) p4	